Big Tech is making bold moves on nuclear energy

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Key Takeaways

- Microsoft is set to revive Three Mile Island to power data centres for the next two decades.
- Google is backing small modular reactors with Kairos Power to secure carbon-free energy.
- Amazon has struck multiple nuclear deals, from Small Modular Reactors (SMRs) to long-term utility partnerships.
- Meta signed a 20-year nuclear power deal to fuel its AI workloads.
- Palantir and Equinix are pushing advanced nuclear tech for faster, smarter deployment.

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Big tech companies face a challenge – and it appears they've found a solution. The challenge is how to sustainably power data centres, the backbone of today's most energy-intensive technologies, including artificial intelligence (AI) and digital assets.

Now, the tech giants driving the growth of these data centres are increasingly turning to nuclear energy as a sustainable answer. Bold moves began in earnest in late 2024, and momentum is accelerating through 2025. This piece summarises the key steps leading tech companies have taken in the nuclear space.

Microsoft

Microsoft have made a deal with Constellation Energy to reopen Three-Mile Island1. Unit 1 of Three Mile Island, which shut in 2019, will reopen potentially as soon as 2027. This deal will provide nuclear energy for Microsoft's data centres for two decades. In the announcement, Constellation's CEO stated, "The decision here is the most powerful symbol of the rebirth of nuclear power as a clean and reliable energy resource."

Alphabet (Google)

Alphabet is partnering with Kairos Power for Small Modular Reactors (SMRs)2. The agreement is to develop and deploy up to 500 megawatts (MW) of SMR capacity by the early 2030s. With Google expected to deploy 6-7 SMRs, the deal puts a stamp of approval on the technology. Google aims to cut the cost of nuclear builds and secure reliable carbon-free power for AI and cloud operations.

Amazon

Amazon have multiple deals to secure nuclear energy3. Amazon are collaborating with Energy Northwest to develop two SMR facilities in Washington state, expected to generate 320 MW (with an option of later expanding to 960 MW) of clean power. They are also partnering with X-energy to help commercialise Xe-100 high-temperature gas-cooled SMR technology for reliable carbon-free electricity. Amazon's long-term agreement with Dominion Energy to supply carbon-free electricity from existing nuclear plants to Amazon Web Services data centres in Virginia. Finally, they have partnered with Talen Energy to build a data centre adjacent to Talen's Susquehanna nuclear facility in Pennsylvania to leverage existing zero-carbon power.

Meta

Meta has a deal with Constellation Energy for the Clinton Clean Energy Centre4. Starting in 2027, the deal ensures a carbon-free power supply for two decades. This agreement will expand the capacity of the Clinton plant to increase output by around 30 MW and support Meta's long-term energy needs for growing AI workloads.

Palantir

Planatir announced a $100 million deal with The Nuclear Company5 to develop a Nuclear Operating System (NOS) to manage reactor construction using Palantir's Foundry platform. The system will handle supply chain, permitting, safety, and progress tracking and aims to cut delays and costs while improving safety in nuclear project delivery.

Equinix

Equinix announced multiple advanced nuclear deals this month. Equinix are a global data centre and digital infrastructure company serving cloud, network, and enterprise customers. They are partnering with Oklo on a 500 MW agreement for advanced nuclear reactors to power data centres, they also have a pre-order of 20 Radiant microreactors for flexible, on-site clean power. In addition, they also have deals with ULC-Energy and Stellaria, next-generation nuclear developers, to purchase power in Europe.

How the WisdomTree Uranium and Nuclear Energy UCITS ETF (NCLR) aims to capture the opportunity:

- Uranium is the fuel for nuclear energy and its supply deficit is expected to widen as more nuclear capacity is deployed. NCLR invests in this category.
- Building more reactors means manufacturing more components like turbines and requiring more services to maintain the infrastructure. This is why midstream companies will become even more important. NCLR invests in this category.
- There is a lot of mention of new technologies like small modular reactors (SMRs). Companies that are developing SMRs have been among the top-performing stocks in this theme this year. NCLR invests in this category.

The WisdomTree Uranium and Nuclear Energy UCITS ETF provides investors with access to the growth of uranium and nuclear energy.

The ETF targets the most value-accretive segments of the uranium and nuclear value chain, including those poised for growth as nuclear energy adoption accelerates. This value chain consists of:

- **Upstream activities (60% weight):** Uranium mining and the production of other raw materials for nuclear reactors.
- **Midstream activities (25% weight):** Companies involved in uranium conversion, enrichment, fuel fabrication, and storage, as well as those supplying critical infrastructure, equipment, and services to the nuclear industry.
- **Innovators (15% weight):** Developing advanced technologies such as small modular reactors and conducting research and development in fusion technology.

By investing across the nuclear value chain, investors gain exposure to established sectors like uranium mining and midstream companies that play a critical role in making uranium ready for reactors. The strategy also includes innovators driving next-generation nuclear technologies, such as small modular reactors and fusion research, both poised for significant growth.

Stock selection and weighting are based on revenue exposure to the uranium and nuclear energy value chain. Upstream companies must derive at least 50% of their revenue from the theme, while midstream companies require a minimum of 10%, a threshold that accounts for their strategic role in the value chain while acknowledging their diversified business models. Weightings are adjusted in favour of companies with higher revenue exposure, subject to caps and liquidity requirements.

1September 2024
2,3 October 2024
4,5 June 2025

Important Risks Related to this Article

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