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The Nuclear Option



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Investor interest in nuclear power is burgeoning as demand trends alter perspectives on a previously taboo energy source.

Nuclear energy has not been a priority for institutional investors in recent decades.

Significant safety concerns are a key factor, following disasters such as Three Mile Island (1979), Chernobyl (1986) and Fukushima (2011). New nuclear projects often mean high upfront costs and long construction timelines. Reputational risk remains a concern, as interest in nuclear energy ebbs and flows. There is also the challenge of managing waste, plus an ever-shifting political and regulatory environment – not to mention technological innovation.

And yet nuclear energy cannot be ignored. It is presently enjoying something of a resurgence, driven by factors including growth in global energy demand, the expansion of AI and data centres, and pervasive energy security concerns.

Sondre Myge, Head of ESG at Norwegian fund management firm Skagen Funds, tells *ESG Investor* that nuclear energy has “significant potential to ensure energy independence and affordability”. He describes the sustainability features of nuclear as “favourable”, with much of the backlash being “disproportionate”, and “legitimate concerns” around waste having technological solutions.

“Our impression is that more investors are opening up to nuclear,” says Myge. “Key triggers for this change are the emerging realisation of the importance of energy security and increasing interest around **small modular reactors (SMRs)** as more investor-friendly ways of constructing nuclear energy.”

Historically, the construction of large-scale reactors in advanced economies has been subject to substantial delays and large cost overruns. Initial investment costs surpassing US\$10 billion are prohibitive for private investors, meaning projects struggle to start without some form of government involvement.

But nuclear power offers a stable and carbon dioxide-free energy source and is cheap to run once it is operational. It also is not dependent on weather, unlike wind and solar.

“There is a significant opportunity with nuclear for investors to secure long-term revenue streams on stable baseload power that at the same time contributes to supply in a growing power demand setting,” says Myge.

Jean-Hugues de Lamaze, Portfolio Manager at Ecofin Global Utilities & Infrastructure Trust, has noted a “clear evolution of sentiment” towards nuclear. “Some countries which were considering the technology as overly expensive, and no longer required, are coming back on that view,” he says.

“Even those who were the most anti-nuclear over the past couple of decades, due to risks and costs associated with the technology, are re-launching the debate about the need to re-activate some of the fleet, or even possibly invest in a new generation of nuclear units SMRs could be part of the solution.”

Pension fund perspectives

Nuclear energy is second only to hydropower among low-emissions sources globally. The deployment of nuclear – alongside solar, wind, electric cars and heat pumps – since 2019 prevents 2.6 billion tonnes of CO2 annually from entering the atmosphere, according to the **International Energy Agency (IEA)**. This is equivalent of 7% of global emissions.

Nuclear is set to produce more electricity this year than ever before. In 2024, more than seven gigawatts (GW) of nuclear power capacity were brought online, the IEA found. This is 33% more than in 2023, bringing the global total of installed nuclear capacity to 420GW.

As of February 2025, there were 62 nuclear reactors under construction in 15 countries around the world, with a combined total capacity of nearly 70GW.

Global ambitions to expand nuclear energy include **an initiative** to triple capacity by 2050, with more than 40 countries having introduced supportive policies. According to the IEA, investment in nuclear **has risen** to approximately US\$65 billion in 2023, nearly double the level a decade ago.

Expanding nuclear energy will require significant investment. However, public funding alone for this expansion will be insufficient, with private financing needed to scale up investments.

Pension funds in **Denmark, Sweden, and the Netherlands’ PME** have stated their willingness to invest in nuclear energy. But institutional investors at large still seem reluctant to discuss the topic, with several declining the opportunity to contribute to this article.

“We foresee a huge increase in electricity demand coming, and we think that nuclear energy can potentially play role in adding electricity instead of fossil fuels,” says Daan Spaargaren, Responsible Investment Strategist at PME, which provides pensions to 350,000 employers and employees in the metal and technology sector and represents £59.9 billion (US\$65.6 billion) in AUM.

“When it comes to financing new nuclear energy plants, that’s a bit more difficult. Private investors like pension funds can chip in, but the risks are very high. Construction periods are very long, so there needs to be a suitable model for investors to invest in nuclear energy plants and that comes with returns for the intermediate period.”

PME previously said that the Dutch government needs to be a partner for private investors wanting to invest in nuclear energy investments to mitigate any risk that they may face.

Spaargaren adds that, while investors are more open to considering nuclear energy investments, they may still need more convincing that it suits their current risk-return structure.

Morten Rask Nymark, Head of Equities at Denmark’s US\$35 billion AUM Industriens Pension, says the scheme is a long-term investor in nuclear power, and that there’s “no doubt” it will play a key part in the future energy supply in some countries, alongside solar and wind.

The pension fund is currently invested in nuclear power through American and European utility companies and energy companies that own and operate nuclear power plants. It has also invested in the development of smaller plants by a US company through a private equity fund.

“It is clear that both energy consumption from **big tech** and the need for energy security are driving the prospects for nuclear power,” says Nymark. “We expect that the demand for nuclear power will increase.”

Further fund offerings

While the nuclear-focused fund market remains relatively nascent, rising investor interest means an increase in new vehicles being launched.

Last month, BNP Paribas Asset Management introduced a quant-driven vehicle for investing in the nuclear energy value chain, capitalising on what the firm described as a “multi-decade investment opportunity, driven by growing global electricity demand and energy security concerns”. The fund invests in uranium mining and enrichment, energy generation (including power plant operations and technologies), and specialised engineering or related services.

“We’ve tried to create something that is not only pegged to the uranium price, but also gives investors a diversified solution across the whole nuclear value chain,” says Roberto Bartolomei, Head of Sales for THEAM Quant Funds at BNP Paribas Global Markets. “The fund was in response to existing demand from investors, and since the launch we’ve seen quite a bit of demand across all regions we operate in.

“Nuclear has been a taboo for so long and has only started changing in the last few years,” he adds. “A lot of investors understand that this is needed for future energy development.”

BNP Paribas has invested €40 million in the fund, with the asset manager telling *ESG Investor* that a “reasonable target” for the end of this year would be at least €100 million.

“We are convinced that there is a paradigm shift regarding investor perceptions of nuclear,” says Stanislas Mesland, Head of Equities Strategies at BNP Paribas’ Quantitative Investment Strategies, asserting that the few existing solutions that are available “were not ideal from a risk-return perspective”.

According to Mesland, the firm has seen demand from large pension funds and smaller family offices.

Fellow asset manager VanEck launched a Uranium and Nuclear Technologies ETF in February 2023, which has US\$391.8 million in net assets. The firm also previously launched a separate Uranium and Nuclear ETF in 2007, which has US\$998.9 million in net assets.

“Around 2022 we had strong belief that nuclear energy was poised for a comeback, and we started exploring possibilities on how to capitalise on that and give investors access to this opportunity,” says Kamil Sudiyarov, Senior Product Manager at VanEck.

“We sought to offer our clients something with a deeper exposure to nuclear industry beyond just uranium. It was a bit of a slow start, but last year we felt like our approach was vindicated as we gained a lot of assets.”

Smaller solutions, bigger impact

Demand from primarily US-based big tech companies to support the expansion of AI and data centres has been a big factor in the resurgence of interest in nuclear.

Data centres already account for roughly **2.5% of total US electricity demand**, but AI expansion could drive that to 7.5% by 2030.

Last year, Microsoft **reached a deal** to re-activate a nuclear reactor on Three Mile Island in Pennsylvania to supply its data centres. Meanwhile, companies including **Amazon** and **Google** are investing in SMRs to provide reliable energy for their data centres and powering their AI infrastructure as demand grows.

According to the IEA, SMRs have the “potential to be a game-changer” when it comes to overcoming the traditional obstacle of financing. The smaller scale of SMRs makes them potentially more attractive to commercial investors, opening the door to broader private sector participation in nuclear energy. The first wave of SMRs is expected to start commercial operations around 2030.

SMRs’ success is highly dependent on whether government support, innovation and new business models enable them to bring down their costs quickly enough. If that happens, SMRs could account for 10% of all nuclear capacity globally by 2040, with the US alone accounting for a fifth of the growth in SMRs.

“There has been a long-term shift in investor attitudes toward nuclear power, especially with the emergence of new technologies that offer safer operation, and ability to meet power demands at different scales,” says Julie Gorte, Vice President for Sustainable Investing at Impax Asset Management.

“We are concerned about reports that SMRs may actually generate higher volumes and more radiotoxic waste than current conventional nuclear technologies, and that SMRs may have higher neutron leakage than conventional boiling water reactors. Investors are closely watching the development of SMRs.”

Leslie Samuelrich, President at US asset manager Green Century Funds, warns that SMRs still carry **myriad problems** which industry has been unable to solve, including dealing with radioactive materials and waste, as well as other safety issues. Nor are SMRs necessarily more economical than large reactors.

“Nuclear power is among **the most costly approaches** to solving America’s energy problems and we think it is a poor investment,” says Samuelrich.

“Other US asset managers have dropped all of their exclusions, including those on nuclear energy, but we are steadfast in our analysis that nuclear energy is dangerous and does not belong in sustainable investment portfolios. Investors will have less risk from clean energy – solar, wind, geothermal sources – than they face from fossil fuel sources.”

At last November’s COP29 in Azerbaijan, the UK and US **signed an agreement** to jointly invest billions in research and development to accelerate the deployment of advanced nuclear technologies, helping to “strengthen energy security”. The agreement came into effect on 1 March.

The UK government has also **looked to accelerate** the growth of nuclear power by slashing red tape and preparing to approve more plants in England and Wales. Nuclear development is currently restricted to eight sites under rules which had not been reviewed since 2011.

Proposed changes to planning legislation, set out in a statement in early February, will enable SMRs to be built in the UK, making energy more affordable and creating “thousands of new highly skilled jobs”, according to the government. Great British Nuclear **has concluded negotiations** with the four bidders participating in the SMR competition, with the winner set to be announced on 11 June.

At France’s AI Action Summit in February, President Emmanuel Macron underscored the country’s **nuclear energy credentials** as part of a pitch to get energy-intensive AI firms to start or expand operations.

Samuelrich expects tech sector demand to drive SMR growth, also fuelling calls for to build new nuclear plants and reopen shuttered ones.

“But why should the public pay for their dirty energy needs with higher electricity costs and tax subsidies for building more nuclear power plants? This shifts to the public both the costs and the risks from potential environmental harm, such as tainted water, and public health risks from airborne emissions or possible nuclear explosions,” she says.

“We don’t believe nuclear energy is needed, given the lower cost and safer sources of clean energy from solar, wind, hydro and geothermal energy.”

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