

Investing in fusion and fission – a bright new chapter for nuclear power

Nuclear power, once viewed as problematic, is undergoing a worldwide renaissance of viability. Shifts in policy, geopolitics, public opinion, economics, and technological progress have converged to increase the investability of this green energy source.

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In the context of our current climate emergency, nuclear power - together with and as a complement to renewable energy - emerges as one of the highest potential technologies to solve our climate crisis. And while for the past decades nuclear was seen as a dangerous and lethal technology, the current global backdrop is forcing institutions and the public to reassess their views on and fears of the technology.

Earlier this year, the European Commission adopted a Complimentary Climate Delegated Act (CCDA) that listed nuclear energy as a *transitional* environmentally sustainable activity under the EU Taxonomy - a regulation that defines sustainable activities. After an in-depth technical assessment, the following conclusion was reached: *“the analysis did not reveal any science-based evidence that nuclear energy does more harm to human health or to the environment than other electricity production technologies already included in the Taxonomy as activities supporting climate change mitigation.”*

While nuclear is still described as *“transitional”* and activities must

comply with strict safeguards criteria under the regulation, this is a strong signal that institutional attitudes are changing and that nuclear is a crucial part of our path to net zero.

Though member states retain the right to scrutinise and potentially object to the CCDA before its adoption, it sports strong legislative scaffolding with backing from the EU Parliament and growing public support. In fact, according to the International Atomic Energy Agency, nearly half of Europeans approve of nuclear power.

Given its favourable standing with politicians and the public, it is likely that the CCDA will come to full fruition in 2023. This adoption will allow all nuclear investments in compliance with stipulated conditions to be greenlit as “environmentally sustainable” and opens the door to eager green investors and earmarked public funds.

Beyond our climate crisis, the conflict between Russia and its European neighbours has critically altered a once interdependent oil and natural gas economy, pushing Europe to seek energy independence. Prompted by fewer tanker deliveries, infrastructure outages, and depleted storage and supplies, European fuel prices have skyrocketed in recent months.

The continent’s two top energy sources – gas and oil – originate almost solely from Russia. Given the unsustainability of fossil fuels and the unreliability of Russian suppliers, a shift to independent renewable energy seems a prudent path forward.

Beyond policy making and geopolitical events, there is a lot of development going on in terms of the next generation of nuclear energy, including small modular reactors in nuclear fission and nuclear fusion. Advanced next-generation nuclear reactors are designed to produce less waste than current reactors, are highly automated, and designed to be inherently safe. They are also smaller, can be mass-manufactured, and

installed safely underground. Being inherently safe means that the reactor is designed in such a way that if something should go wrong, it shuts down to a safe state solely thanks to the laws of physics, with no intervention or action required by plant operators.

The other tier of development of particular interest is nuclear fusion. Fusion is the energy of the sun, and unlike nuclear fission where atoms are split, in fusion, atoms are merged. This type of reactor is inherently safe by design, generates no prolonged radioactive waste, and is sustainable given it does not emit CO₂ or other greenhouse gases into the atmosphere. Fusion fuels are widely available and nearly inexhaustible.

Investors are taking note of the current positive environment for nuclear energy. Rystad Energy *predicts* that the growth of fission and fusion will continue soaring, with a projected \$91 billion being invested in the sector by the end of 2023. Already established in the US and Europe, atomic energy is surging in the heavily populated countries of India and China too.

This phenomenon has not gone unnoticed by tech giants, who are now also pouring resources into next-generation nuclear startups worldwide. According to *Bloomberg*, “venture funding for startups focusing on nuclear energy reached a peak in 2021, with an investment amount that year of \$3.4 billion.”

Elon Musk declared nuclear energy sources as crucial to national security and noted venture capitalist Marc Andreessen called for 1,000 new state-of-the-art plants to be constructed in the US and Europe. Going beyond lip service, other heavyweights like Bill Gates, Jeff Bezos, and Peter Thiel are funding next-gen fusion and fission firms.

EU-based investors should now take a cue from their US counterparts,

who are cashing in on this industry's explosive growth. When it comes to atomic energy's ongoing evolution, the symbiotic relationship between the economic gain and ecological good is a net gain for all. With its maximised safety and minimised risk, investors are wisely banking on fission and fusion as a winning energy source for a new tomorrow.

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