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To the point!

Cross-Asset- and Strategy-Research

Nuclear energy: the undead power source

Why a German nuclear revival would be expensive and unhelpful

At the beginning of 2024, I argued in this column that Germany's decision to phase out nuclear energy following the Fukushima disaster in 2011 was most a mistake. However, I also made the case that a return to nuclear power—driven by growing nostal-gia—would probably be an even bigger mistake.

The new government under Chancellor Friedrich Merz has rightly abandoned the idea of a nuclear revival, despite campaign promises to the contrary, particularly from the Bavarian Christian Social Union (CSU). While the government has accepted the reality of nuclear energy's challenges, a majority of Germans – 55% – still support its return. To provide context for these view, LBBW Research authored a study explaining why nuclear energy no longer has a future in Germany. The following summarizes key findings from that report.

No unique German path

A popular narrative among nuclear proponents is that Germany is an irrational maverick, separating itself from a world firmly committed to nuclear power as a clean energy solution. But this claim does not hold up on closer inspection. As shown in the chart on global electricity production, nuclear power is on the decline worldwide, while renewables are rapidly expanding.

Nuclear power is not suitable as a backup for wind and solar

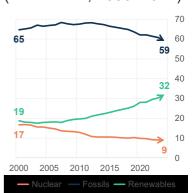
But what happens when neither the sun shines nor the wind blows? Could nuclear energy effectively supplement the naturally fluctuating power output of renewables? Unfortunately, the answer is no. Not only would the remaining capacity of Germany's decommissioned nuclear plants fall far short of what's needed to cover such shortfalls, but nuclear power is also far too

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Merz is leaving nuclear energy behind

Global electricity generation by source (Share in %, 2000–2024)



Source: Our World in Data, Energy Institute - Statistical Review of World Energy, LBBW Research inflexible. When renewable energy output drops, replacement sources must be able to ramp up almost immediately. However, nuclear plants cannot simply be switched on and off – it can require several days to restart them. To bridge such gaps, what's needed instead are more energy storage solutions and hydrogen-ready gas plants, which can start up quickly from a cold state.

Nuclear energy cannot bridge renewable gaps

Too costly: who will pay the bill?

In addition to its lack of flexibility, nuclear energy faces significant financial hurdles. Germany already has some of the highest electricity costs in Europe. Reintroducing nuclear would make energy even more expensive, unless the government heavily subsidizes the industry with taxpayer money. France is a prominent example of nuclear financial challenges. Its state-owned operator, EDF, is struggling with massive cost overruns and delays for new projects, prompting the French Court of Auditors to advise stopping all future nuclear investments. Similar problems are evident in the UK, where the Hinkley Point C reactor has seen construction delays and exploding costs. In Germany, former nuclear operators have unanimously rejected restarting old plants. The reasoning is simple: many critical components, such as turbines and cooling systems, have already been dismantled, and reviving these facilities would not be economically feasible.

The costs are far too high

The unresolved waste problem

Oh, and let's not forget the radioactive waste that no one wants – oddly enough, not even Markus Söder, Bavaria's premier and one of the most ardent nuclear energy advocates. Instead, many, including Söder, pin their hopes on nuclear fusion, even though it remains decades away from commercial viability.

Nuclear fusion remains a distant prospect

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