

While Nuclear Energy Attracts Attention, Investors Should Not Lose Sight On The Promise Of Renewables

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In 1979, the accident at Three Mile Island Nuclear Generating Station in Pennsylvania changed the investment calculus and public opinion about nuclear power. It was almost 40 years before another reactor was built in this country. Subsequent international accidents at Chernobyl and Fukushima did not help matters.

However, as climate change threatens the natural world and the viability of the capital markets, the tone around nuclear energy has started to change. It has even garnered bipartisan and Wall Street support, shifting investors' attention towards this sector.

So, does nuclear energy provide a low-emissions solution to rapidly rising energy demands? Or does it distract investors from the stronger opportunities in renewables?

The Case (and Frequent Setbacks) of Nuclear Energy

To be sure, nuclear energy is intoxicating. Nuclear power is a proven technology that produces electricity with low emissions. Currently, the US draws 19% of its electricity from nuclear power.¹ When it comes to the percentage of “clean” power (low emissions), the number jumps to 48%. With energy demand set to double by 2030 due to the insatiable thirst of artificial intelligence,² nuclear advocates insist it is the safest, cleanest and cheapest solution to the energy and climate crisis.³

Of course, the power derived from wind, water and solar (WWS) also provides safe, clean energy. But, as the proponents of nuclear like to say, “the sun doesn’t shine all day, and the wind is not constant.” Nuclear plants run 24 hours a day, 7 days a week, offering a near-constant

baseload of power. That sounds good on paper, but growing nuclear capacity has not been that easy. In part, this is because of nuclear energy's checkered history, liabilities from an investment standpoint and lack of public support. In practice, it is just difficult to get plants built.

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“On-time and under budget” is not a phrase associated with nuclear plant construction. 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 this year and ended up costing almost \$35 billion “for what may be the most expensive power plant ever.”⁴ There is hope that new technology and modular construction could change that, but hope is not a plan.

So nuclear is expensive and slow to build when all goes well. When it doesn't? Look no further than the accident at the Fukushima Daiichi Nuclear Plant in Japan. The cost for the cleanup is in the hundreds of billions and still piling up.⁵ Even if there is no accident, disposing of spent uranium is a treacherous undertaking. It remains a threat to the environment for centuries and requires great measures to “dispose” of it safely. This includes keeping it out of the hands of bad actors who can use it in dirty bombs.

The Stronger Investor Case for Renewables

Nuclear advocates argue the high costs and long construction time is due to political opposition and the under-investment in nuclear over the

past 50 years.⁶ Until recently, the same could be said for renewables.⁷ Despite this, the results for renewables have been very different. Subsidy math is always fuzzy, but momentum to subsidize renewables picked up steam in the 1990s. Since that time, the share of electricity in the U.S. produced by WWS has gone up 150%.⁸

The speed at which wind and solar installations can be built is a big reason for this. Wind and solar installations take from 6 months to 2 years to build.⁹ By contrast, nuclear plant construction this century has averaged about 10 years once construction has started.¹⁰ Need more evidence? In just 2020 and 2021 alone, the world added 464 gigawatts of power-generating capacity of wind and solar, more than the capacity of *all* the nuclear plants ever built.¹¹

WWS is not a panacea. Like any industrial energy source, there are challenges. It requires a lot of land and energy storage is also a concern (“the sun doesn't shine all day”). Despite this, the capital markets are much more interested in investing in renewables than nuclear. Even in nuclear's heyday, Congress had to pass the Price-Anderson Nuclear Industries Indemnity Act in 1957 to entice private investment in nuclear. Investors recognize that renewables come on more quickly, use much less water, and have a much lower risk profile. In addition, the Inflation Reduction Act (IRA) is set to turbocharge energy storage and improve distribution.¹²

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Extending the operating life of the current nuclear capacity makes perfect sense. As of April 30, 2024, there were 54 commercially operating nuclear power plants with 94 nuclear power reactors in 28 states.¹³ There is already \$6 billion set aside in the 2022 Bi-partisan Infrastructure Law to do this, and just this week Constellation Energy Corp. agreed to invest \$1.6 billion to revive the shuttered Three Mile Island nuclear reactor and sell all the energy to Microsoft Corp. That makes sense. Building new nuclear plants at the expense of renewables does not. There is no time to waste.

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¹ <https://www.eia.gov/tools/faqs/faq.php?id=427&t=21>

² <https://www.forbes.com/sites/arielcohen/2024/05/23/ai-is-pushing-the-world-towards-an-energy-crisis/>

³ Why we must embrace nuclear energy to fight climate change | World Economic Forum (weforum.org)

⁴ <https://www.gpb.org/news/2024/04/29/second-new-nuclear-reactor-completed-in-georgia-the-carbon-free-power-comes-at-high#:~:text=The%20new%20Vogtle%20reactors%20are,the%20total%20nears%20%2435%20billion.>

⁵ <https://www.asahi.com/ajw/articles/14762193>

⁶ <https://ca.rbcwealthmanagement.com/liutfieldwealth/blog/4188242-Nuclear-energy-sector-getting-the-push-it-needs>

⁷ <https://www.rff.org/publications/reports/beyond-subsidy-levels-the-effects-of-tax-credit-choice-for-solar-and-wind-power-in-the-inflation-reduction-act/>

⁸ <https://www.eia.gov/energyexplained/electricity/electricity-in-the-us.php>

⁹ <https://www.theguardian.com/news/ng-interactive/2024/may/24/nuclear-power-australia-liberal-coalition-peter-dutton-cost>

¹⁰ <https://web.stanford.edu/group/efmh/jacobson/Articles/I/24-01-MZJ-HRTestimony.pdf>

¹¹ <https://www.twincities.com/2022/09/18/farhad-manjoo-new-nuclear-power-no-longer-has-the-appeal-it-once-had/>

¹² <https://www.utilitydive.com/spons/the-inflation-reduction-act-will-turbocharge-energy-storage/633118/>

¹³ <https://www.eia.gov/tools/faqs/faq.php?id=207&t=21>