Learning to Love the Atom Again: Why the Future of Artificial Intelligence is Nuclear
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In his speech before the United Nations General Assembly on 8 December 1953, President Dwight Eisenhower proposed - in paraphrased terms- that the atom bomb be given to those who can "strip its military casing and adapt it to the arts of peace." Commonly referred to as the 'Atoms for Peace' speech, Eisenhower's words launched an International Atomic Energy Agency and a generation of research into nuclear energy. Since the Cold War's end, America's relationship with nuclear power has attracted less attention, but the artificial intelligence (AI) revolution is forcing the United States to take a "new look" at its power grid.

Throughout 2025, senators, think tanks, and federal commissions likened the pursuit of better AI to the Manhattan Project that built the bomb. The vast sums of energy required to fuel such a task, however, may need its own project. Although President Donald Trump issued an executive order to reinvigorate the nuclear industrial base last May, these energy demands have been overshadowed by mounting fascination with the need to win a technology race with China. Considering U.S. public opinion toward atomic energy reached a near record high last year, there is no better time to expand the atom's role in support of a coherent AI strategy.

The Dawn of a Nuclear Renaissance

During the early Cold War, nuclear technology drove a revolution in energy *generation*, powering everything from American cities to aircraft carriers. The skyrocketing number of AI data facilities in the United States, on the other hand, represents a potential crisis in energy *consumption*. When asked if the country can support the growing demands of its data centers, former President of Energy at Microsoft Brian Janous responded: "No. Utilities have not experienced a period of load growth in almost two decades and are not prepared for—or even capable of matching—the speed at which AI technology is developing." The White House is exploring nuclear options to meet this challenge, yet its AI strategy released last July only mentions nuclear power briefly on page sixteen. This point deserves more attention.

America's 94 reactors currently supply twenty percent of its energy with 97 gigawatts (GW), and the largest of them—located in Georgia—has a generating capacity of 4.5 GW. A recent Goldman Sachs report projected that the United States needs 47 GW of additional energy to power its AI centers through 2030—the equivalent of half the country's nuclear capacity. Meta CEO Mark Zuckerberg has taken notice. In January, he secured a series of nuclear energy deals to power his 6.6 GW AI compound under development in Ohio. Companies that did not exist twenty years ago, such as Meta and OpenAI, could soon demand more than ten percent of the nation's power grid, and the needs are only increasing.

Professor Joohyun Moon of Dankook University suggested recently that small modular reactors (SMRs)—automobile-sized nuclear batteries—could offer energy solutions for national security purposes in forward areas, such as the Indo-Pacific. Although the United States approved its first

SMR design in 2022, it will not be operational until 2029, and only three SMRs are currently active in Japan, China, and Russia. Some studies cast doubt on the affordability of SMRs and question whether they would increase the risk of proliferation given the enriched uranium they need to operate. Moreover, these reactors only generate up to 300 megawatts, so while they could be useful in certain military contingencies, their output pales in comparison to the forecasted energy demands of AI.

Microsoft alone plans to build at least six data centers in Texas, each of which might consume enough energy to power more than 100,000 homes. Once Meta completes its Ohio facilities, it will have at its disposal energy reserves capable of powering roughly five million homes. Data centers in the United States could therefore devour nearly one quarter of the energy used by all American households before 2030. Without tighter integration between a national AI strategy and America's nuclear sector, these numbers appear unsustainable.

Reversing the Ship

Going all in on nuclear energy also requires sustainable solutions to disposing of spent nuclear fuel and investing in high-capacity pressurized water reactors, but such solutions have not been forthcoming. President Barack Obama's administration slashed funding for Nevada's Yucca Mountain disposal facility in 2009 and suspended development of a nuclear waste repository there. Despite the first Trump administration's requests to fund the disposal program between 2018 and 2020, Congress has yet to approve a plan. Any rapid increase in nuclear energy must be accompanied by a commensurate spike in disposal capacity.

In addition to these concerns, the United States closed thirteen reactors between 2013 and 2022, which has encouraged the current administration to reverse course. Last year, the Department of Energy pledged to quadruple America's nuclear output from 100 GW to 400 GW by 2050. President Trump also issued an executive order to unburden AI companies of federal regulations and requested that they shoulder the burden of energy costs. The next step is to fuse these developments with a theory of success that explains what "winning" the AI race looks like and then align that vision with the energy requirements needed to support it—much of which will be nuclear.

The Long Shadow of 1945

In her historical account of U.S. citizenship during the early atomic age, Sarah Robey explains how "American culture has never truly partitioned the difference between 'atoms for peace' and 'atoms for war.'" Over the last eighty years, these blurred lines generated both hyperbolic and apathetic responses to the nation's relationship with nuclear power. The atom became equal parts provider and destroyer, but these conversations disappeared once public fears of a Cold War going hot subsided. With American optimism toward nuclear energy now sitting at 61 percent, there is no better time to reignite the discussion about the atom's role in American society.

Despite the Trump administrations' efforts to break ground on new nuclear plants over the last ten years, AI theory has outpaced the long-term realities of AI application, especially regarding the energy equation. Advancing AI research will force western societies to embrace the atom for

the purpose of sustaining life rather than destroying it much as Eisenhower theorized in 1953. Accepting this reality by establishing deeper connections between energy generation and AI strategy is the first step toward finding sustainable solutions to AI's role in war and peace.

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