

March 23, 2026

Subject: Support for California AB 2647

The Breakthrough Institute (BTI) appreciates this opportunity to comment on California Assembly Bill 2647, and to express our thoughts and support for the proposed bill. BTI is an independent, Berkeley-based 501(c)(3) environmental global research center that's pro-growth, pro-technology, and pro-development. We are bipartisan and advance durable solutions that are grounded in empirical and cutting-edge research. BTI acts in the public interest and does not receive funding from industry.

AB 2647

AB 2647 represents a targeted and pragmatic step toward modernizing California's longstanding statutory restrictions on nuclear energy. By removing limitations on advanced nuclear reactor deployment in the state of California, AB 2647 paves the way for cleaner, more reliable, and economically beneficial energy solutions that can contribute significantly to California's energy reliability and decarbonization efforts. By creating a clear statutory pathway for advanced reactors, the bill removes an outdated regulatory barrier while preserving the broader structure of California's existing framework. Importantly, AB 2647 ensures that advanced nuclear technologies can be considered alongside other clean energy generation based on system needs, cost, and performance.

AB 2647 builds on prior legislative efforts, including AB 305 (2025), while adopting a more targeted and administratively durable approach. Whereas AB 305 focused on exempting small modular reactors and included additional directives related to electricity procurement and natural gas phase-out planning, AB 2647 refines this framework by establishing a narrower, technology-neutral exemption for advanced nuclear reactors tied to Nuclear Regulatory Commission (NRC) licensing. AB 2647 represents a more flexible, durable, and implementable pathway for enabling next-generation nuclear technologies in California.

Our extensive research on innovative energy solutions to achieve decarbonization, a goal that California shares, has shown that nuclear energy is a critical component of a reliable, low-carbon

electricity system. Our research is unbiased to a specific state or technology.¹ It predates this legislative effort, and therefore, cannot be tailored to support a preferred outcome.

Our work has provided a basis for a series of major publications on the deployment of new nuclear energy. The Department of Energy has used our methods and findings when modeling a variety of net-zero efforts that indicate the need for 200+ GW of new nuclear capacity by 2050.² More recently, we have co-authored the most up-to-date cost analysis of nuclear energy in conjunction with national laboratories and leading universities.³ The National Laboratory of the Rockies, (previously the National Renewable Energy Laboratory) now uses the findings as the standard values in their Annual Technology Baseline.⁴

Based on the model results, states that have laws restricting new nuclear power plant projects may forgo local capital investments of \$64 to \$75 billion cumulatively between 2020 and 2040.⁵ In particular, California will relinquish substantial capital investment opportunities that might be unlocked if state-level restrictions were revised or repealed. California might otherwise benefit from advanced nuclear projects worth up to \$12 billion in direct investment.⁶

Such direct investment translates into significant in-state economic activity, including large-scale construction spending, procurement of materials and equipment, and the development of local supply chains. These projects generate substantial state and local tax revenues through property taxes, sales taxes, and income taxes associated with construction and long-term operations. In addition, direct investment supports workforce development, creating demand for skilled labor, engineering services, and long-term plant operations personnel, with multiplier effects that extend across regional economies.

¹ Adam Stein, et al., The Breakthrough Institute, *Advancing Nuclear Energy*, Jun. 2022.
<https://thebreakthrough.org/articles/advancing-nuclear-energy-report>

² Julie Kozeracki, et al., U.S. Department of Energy, *Pathways to Commercial Liftoff: Advanced Nuclear*, Sept. 2024. Pg 12.
https://liftoff.energy.gov/wp-content/uploads/2024/10/LIFTOFF_DOE_Advanced-Nuclear_Updated-2.5.25.pdf

³ Idaho National Laboratory, *Meta-Analysis of Advanced Nuclear Reactor Cost Estimations*, Abdalla Abou-Jaoude, et al., INL/RPT-24-77048, Jun. 2024. <https://doi.org/10.2172/2371533>

⁴ National Renewable Energy Laboratory, *Annual Technology Baseline: Nuclear Energy*, 2024, <https://atb.nrel.gov/electricity/2024/nuclear>

⁵ Adam Stein, et al., The Breakthrough Institute, *Advancing Nuclear Energy*, Jun. 2022. Pg 105.
<https://thebreakthrough.org/articles/advancing-nuclear-energy-report>

⁶ Compared to \$15 billion and \$12 billion for New Jersey and Illinois, respectively, as seen in the figure below.

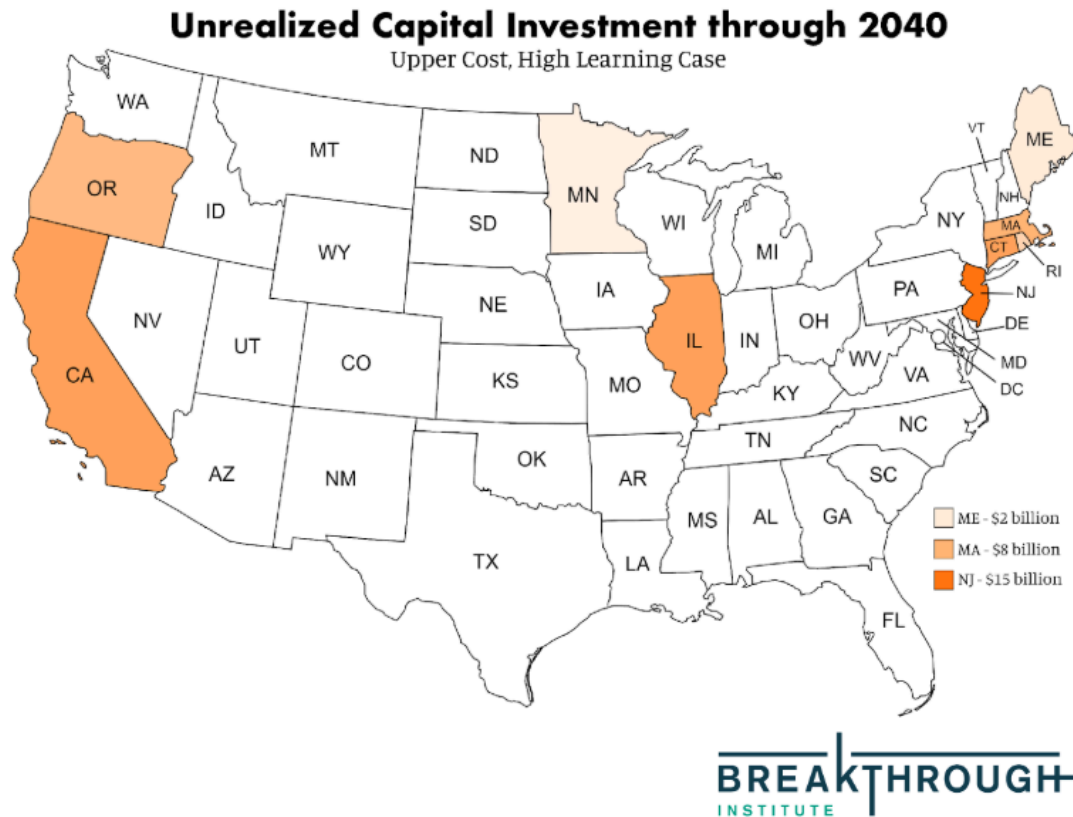


Figure 1. Cumulative unrealized capital investment between 2020 and 2040 in the Upper Cost, High Learning model for states with current legal limitations on building new nuclear energy facilities. (Data from ref. 1)

In addition to these direct investment effects, nuclear energy projects provide high-quality, long-duration employment and stable local tax revenues, particularly in communities transitioning away from fossil generation. Compared to other clean energy technologies, nuclear facilities support a significantly larger and more sustained on-site workforce, including during both construction and multi-decade operations, resulting in greater long-term employment and economic stability. Across these sectors, new nuclear energy facilities can provide hundreds of new jobs.⁷ It has become increasingly evident that in repowering fossil fuel plants with nuclear technology, not only are new jobs created, but numerous jobs are transferable between the two

⁷ Idaho National Laboratory, *Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear Plants*, J. Hansen, et al., INL/RPT-22-67964 Revision 2, Sept 2022. <https://fuelcycleoptions.inl.gov/SiteAssets/SitePages/Home/C2N2022Report.pdf>

technologies; an additional boost to local tax revenues.⁸ Communities that live near nuclear power plants have historically supported their operation due to the significant local economic benefits, increased job creation, and enhanced energy security they provide.⁹

Advanced reactor designs, including small modular reactors, also enable the reuse of existing infrastructure and brownfield sites, further amplifying local economic benefits while minimizing land-use and environmental impacts. This is just one way that nuclear energy has the lowest environmental impact of any energy source.^{10,11} Federal policy reinforces this opportunity. The 2024 ADVANCE Act includes provisions to support the deployment of advanced reactors, particularly at retired fossil fuel sites, and commits resources to facilitate these transitions.

California has a unique opportunity to lead the nation in deploying small modular nuclear reactors. Over the past few decades, the state has led the country in the deployment of clean energy technologies, and AB 2647 ensures that California remains at the forefront of clean energy innovation and economic growth. Natural gas still makes up over 39 GW of California's generation capacity and provides over 43.6% of the state's electricity generation (as of 2024).¹² Retiring fossil fuel and brownfield sites could be replaced with small modular reactors to reduce the state's carbon footprint; the California Energy Commission defines nuclear as "clean" and "zero-carbon."

Electricity demand growth is projected to be double that of previous decades and it is more important than ever to procure clean and reliable energy technologies.¹³ Much of the capacity cannot be replaced solely by battery storage; more generation is essential for meeting demand.

⁸ Repowering retiring coal plants with SMRs could add more than 650 jobs in the affected regions. These nuclear jobs typically offer higher wages compared to those at coal plants. Nearly 80% of coal plant jobs are transferable to nuclear plants. See, Idaho National Laboratory, *Investigating Benefits and Challenges of Converting Retiring Coal Plants into Nuclear Plants*

⁹ Department of Energy Office of Nuclear Energy, *5 Reasons Nuclear Is a Good Neighbor*, 2024.

<https://www.energy.gov/ne/articles/5-reasons-nuclear-good-neighbor>

¹⁰ Nuclear energy has the lowest life-cycle greenhouse gas emissions and land use of any energy source. See, United Nations, *Integrated Life-cycle Assessment of Electricity Sources*, 2022. https://digitallibrary.un.org/record/4020227/files/1382376_EN.pdf

¹¹ Nuclear energy has the lowest mining impact, use of raw materials, and critical minerals. See, Seaver Wang, et. al., *Updated Mining Footprints and Raw Material Needs for Clean Energy*, Breakthrough Institute, 2024. <https://thebreakthrough.org/issues/energy/updated-mining-footprints-and-raw-material-needs-for-clean-energy>

¹² Electric Generation and Capacity. CEC. <https://www.energy.ca.gov/data-reports/energy-almanac/california-electricity-data/electric-generation-capacity-and-energy>

¹³ International Energy Agency, *Electricity 2026: Analysis and Forecast to 2030* (Paris: IEA, 2026), <https://www.iea.org/reports/electricity-2026>.

Investing in advanced reactors and replacing fossil fuel plants with nuclear will further California's energy transition away from carbon-intensive power generation and towards a clean energy future.

California has long been the first mover in clean energy adoption, and its next generation of energy generation should be driven by economic and technological viability, not outdated restrictions. This is particularly important as large energy consumers, including hyperscale data center operators, are increasingly investing directly in advanced nuclear energy to secure reliable, firm, zero-carbon power for growing electricity demand. Allowing advanced reactor deployment ensures that the state can pursue nuclear projects based on grid needs, market conditions, and cost-effectiveness.

We support the bill's use of a definition tied to NRC licensing and post-2005 design approval, which provides a clear, administrable standard aligned with federal regulatory practice. By relying on Nuclear Regulatory Commission approval as the threshold for qualifying advanced reactors, the bill avoids duplicative or conflicting state-level technology determinations while maintaining rigorous safety oversight. This approach enhances regulatory clarity, reduces investment uncertainty, and ensures that any future projects deployed in California meet well-established federal safety and environmental standards. In doing so, AB 2647 provides a legally durable and administrable pathway for considering advanced nuclear energy within the state's broader clean energy portfolio. This will also enable the selection of the technology that is best suited to the needs of the state without limiting options.

By lifting these restrictions, California can accelerate energy investment, modernize its electricity infrastructure, and secure a long-term clean energy future, all while maintaining its competitive edge as a national leader in clean power.

Conclusion

To achieve a clean, reliable, and cost-effective energy system, California must reconsider its longstanding moratorium on nuclear energy. AB 2647 offers substantial benefits, including significant direct and induced economic benefits, the creation of quality jobs, and minimized environmental impact through low-emission energy generation. We urge you to support AB 2647

as a forward-looking policy that aligns with California's clean energy and economic development goals.

Sincerely,

Adam Stein, PhD
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The Breakthrough Institute

