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EL SALVADOR'S NEW NUCLEAR ENERGY LAW

Executive Summary

- *In July 2024, El Salvador passed the **New Nuclear Energy Law** to diversify its energy matrix by including nuclear energy as a potential future source. The law establishes the **Organization for the Implementation of the Nuclear Energy Program (OIPEN)** to guide the development of nuclear capabilities, primarily focusing on electricity generation, industrial applications, and research, with by-products aimed at medical and agricultural uses.*
- *The Government has set a seven-year timeline to establish the country's first research reactor by 2030. International collaboration with countries like Argentina, the United States, Spain, and South Korea, as well as compliance with International Atomic Energy Agency (IAEA) safety and legal protocols, are integral to the program's framework.*



Background

- *El Salvador's energy mix has long relied on hydropower, geothermal energy, and other renewable resources, but these have limitations in terms of long-term growth. Recognizing the need for energy security and reduced dependency on imported fuels, the government under President Nayib Bukele has turned to nuclear energy as a viable alternative. Nuclear energy is viewed as an opportunity to reduce carbon emissions and increase energy independence.*
- *El Salvador has initiated diplomatic efforts to secure partnerships, notably with Argentina, which has substantial experience in nuclear technology. Agreements include workforce training programs and knowledge exchange. The government plans to train at least 400 nuclear professionals over the next seven years, and its objective is to construct the country's first research reactor by 2030.*



Analysis

- *Nuclear energy presents a dual-edged opportunity for El Salvador. It can enhance the country's technological capacity, drive energy independence, reduce fossil fuel reliance, contribute to mitigating climate change, and foster innovation in industries reliant on stable energy sources.*
- *Key aspects of the law include the creation of a Nuclear Emergency Committee composed of the National Police (PNC), Civil Protection, and other ministries. The Nuclear Energy Control and Supervision Directorate will collaborate with the PNC to enforce safety and security measures.*

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- *The law enforces penalties ranging from \$10,000 to 10% of the nuclear installation's total cost in case of violations, and requires civil responsibility coverage of up to \$300 million, including a minimum of \$150 million for potential environmental or human damage.*
- *Initial stages of the program will be government-managed, though it is not yet clear if private investments will be allowed in the future. However, several challenges must be addressed, including high upfront investment costs (with no disclosed budget), public skepticism, and concerns over catastrophic environmental and health risks.*
- *Additionally, the long development timeline postpones immediate energy benefits, prompting some political voices to argue that renewable energy projects might offer faster and more cost-effective solutions, while generating more jobs in the short term.*



Strategic

Recommendations

- **Capacity Development & Safety:** *The government should prioritize building local expertise through continuous training programs and ensure stringent safety measures. Leveraging international support from IAEA and partners like Argentina will be essential.*
- **Public Engagement:** *Engaging civil society and environmental organizations in frequent public forums will foster transparency and ease public skepticism about the program's safety and environmental impact.*





- ***Small Modular Reactors (SMRs):*** Investing in SMRs could be an ideal solution for El Salvador's constraints on space for renewable energy projects. SMRs can diversify the energy matrix and offer a more manageable scale for the country's needs without compromising safety.
- ***Financial Risk Mitigation:*** El Salvador should adopt phased investment strategies starting with research reactors to spread out costs and reduce financial risk. Ensuring strong liability provisions will also be key to managing the potential for environmental or human harm.
- ***Balancing Innovation and Sustainability:*** The government should balance the development of nuclear energy with ongoing investments in renewable energy to ensure the maximum long-term benefit. A balanced energy portfolio can promote sustainable economic growth while safeguarding against environmental risks.

Conclusion

El Salvador's nuclear energy program aims to foster energy independence and environmental sustainability.

For it to succeed, efficient management, transparent communication, and adherence to international safety standards are critical.

The program has the potential to reshape the country's energy landscape by reducing reliance on fossil fuels and enhancing long-term economic growth.

However, it must be carefully balanced with continued investment in renewable energy sources to ensure a sustainable, resilient energy future.





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