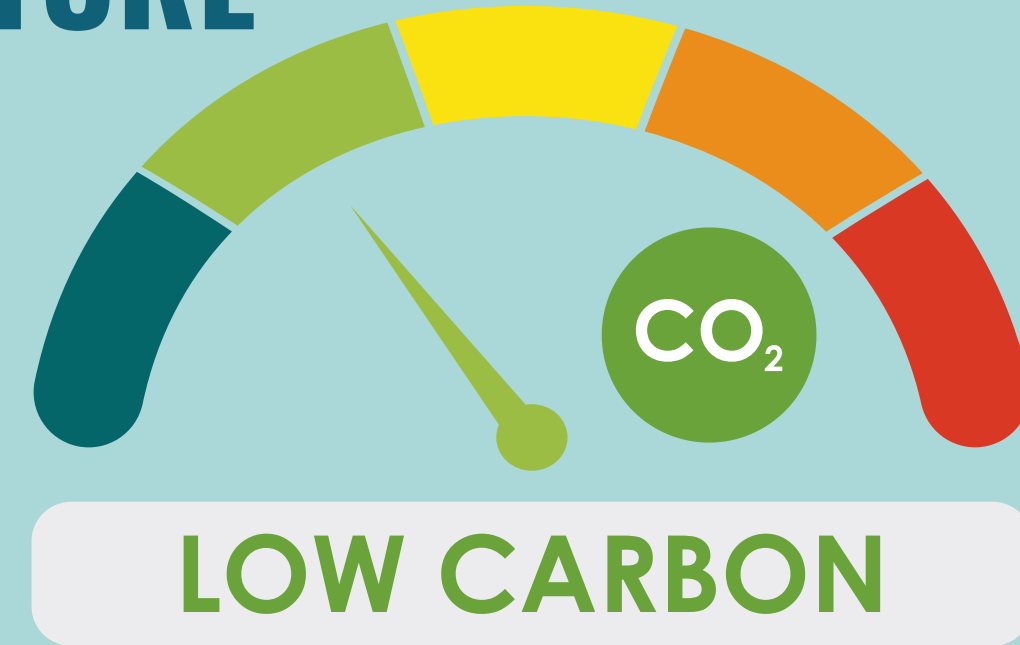


## NUCLEAR ENERGY: POWERING A SECURE, LOW-CARBON FUTURE

Compiled by Julius Cesar Trajano

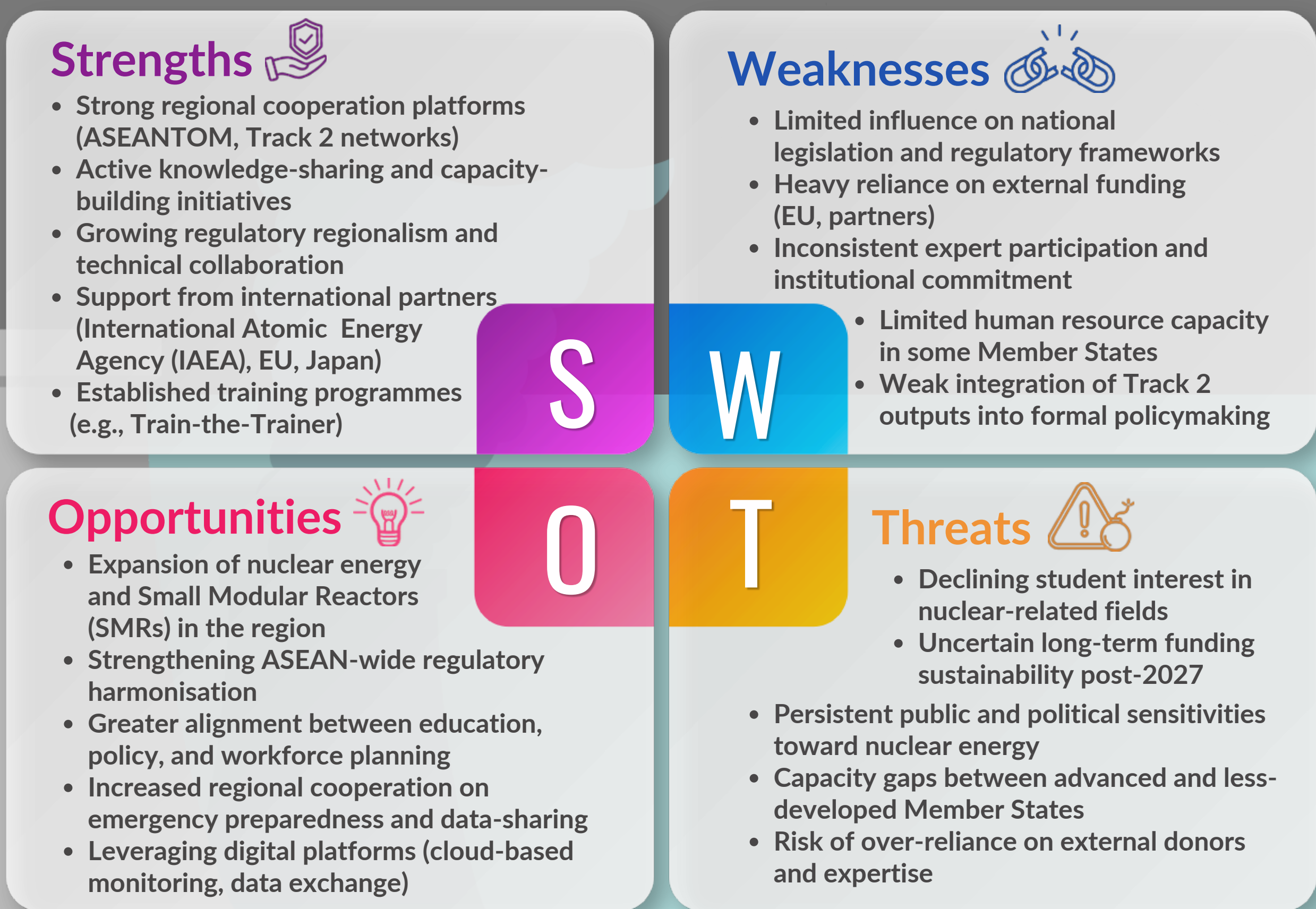
Nuclear power enhances energy security by providing a stable, low-carbon source of baseload electricity that reduces reliance on imported fossil fuels and exposure to volatile global energy markets. By diversifying the energy mix and ensuring consistent supply, it strengthens resilience against geopolitical disruptions and long-term demand pressures.



### SWOT ANALYSIS:

#### Nuclear Governance Capacity-Building in Southeast Asia

The **Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis** below examines the current state of nuclear governance capacity-building in Southeast Asia, focusing on the roles of ASEAN Network of Regulatory Bodies on Atomic Energy (ASEANTOM), Track 2 networks, and academic institutions. It highlights key strengths and opportunities, while identifying structural weaknesses and emerging threats that may affect the region's long-term nuclear security preparedness and governance.



Sources: Compiled from Mely Caballero-Anthony and Julius Cesar Trajano (Eds). (2025). Nuclear Governance in the Asia-Pacific. London: Routledge, <https://www.routledge.com/Nuclear-Governance-in-the-Asia-Pacific/Caballero-Anthony-Trajano/p/book/9781032130682>, accessed 11 May 2026; and Julius Cesar Trajano. (2024). "Deploying Small Modular Reactors in East Asia: Implications on Nuclear Governance," International Journal of Nuclear Security, Vol. 9 No. 1, doi: 10.7290/ijns09125181.

## NUCLEAR ENERGY PLANS IN ASEAN COUNTRIES

The table below provides an overview of nuclear energy plans across selected ASEAN Member States, highlighting varying levels of readiness and policy development. It underscores the region's growing interest in nuclear power alongside the diverse regulatory, technical, and political challenges shaping national pathways.



COUNTRY	STATUS OF NUCLEAR PLANS	KEY TARGETS / DEVELOPMENTS	KEY CHALLENGES / NOTES
Philippines	Advanced (preparation stage)	Target ~1.2 gigawatts (GW) by 2032; scaling to 4.8 GW by 2050; possible revival of Bataan Nuclear Power Plant	Regulatory readiness improving; financing and public acceptance issues
Vietnam	Advanced (revived programme)	Restarting nuclear plans (e.g., Ninh Thuan); target deployment ~2030	Past delays due to debt; relatively strong technical base
Indonesia	Early-intermediate (planning stage)	First plant targeted ~2034; proposed sites in Sumatra and Kalimantan	Infrastructure and regulatory capacity still developing
Thailand	Early stage (consideration)	Exploring SMRs; international cooperation	Public acceptance and policy clarity remain key issues
Malaysia	Early stage (feasibility studies)	Considering nuclear for long-term energy mix; strengthening frameworks	Focus on legal and safety readiness before deployment
Singapore	Exploratory (feasibility studies)	Studying advanced nuclear technologies including SMRs	Land constraints and safety considerations
Cambodia	No immediate plan	Exploring nuclear as a future option	Limited technical and financial capacity
Lao PDR	Very early stage	Interest in nuclear technology for development	Limited infrastructure and regulatory readiness
Myanmar	Limited / constrained	Cooperation on nuclear technology (e.g., SMRs)	Political instability and sanctions constraints
Brunei	No immediate plan		No concrete plans yet

Sources: Compiled from Julius Cesar Trajano. (2025). "Deploying Small Modular Reactors in East Asia: Implications on Nuclear Governance," International Journal of Nuclear Security, Vol. 9 No. 1, doi: 10.7290/ijns09125181; Sharon Seah, Christopher Len and Alvin Chew. (2025). Nuclear Energy Developments in Southeast Asia/ Singapore: ISEAS-Yusof Ishak Institute, <https://www.iseas.edu.sg/centres/asean-studies-centre/books-on-asean/nuclear-energy-developments-in-southeast-asia-2/>, accessed 11 May 2026; and Southeast Asia Public Policy Institute. (2025). Framing a Nuclear-Powered Future for ASEAN, [https://seapublicpolicy.org/wp-content/uploads/2025/09/SEAPPI\\_Framing-a-Nuclear-Powered-Future\\_May-2025.pdf](https://seapublicpolicy.org/wp-content/uploads/2025/09/SEAPPI_Framing-a-Nuclear-Powered-Future_May-2025.pdf), accessed 11 May 2026.