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TAG Spotlight: Indo-Pacific Market Readiness for SMR Partnerships



The core module of China's Linglong One, the world's first commercial small modular reactor (SMR), installed on August 10, 2023. (Photo: China News Service via Getty Images)

Key Takeaways

- **Southeast Asia's accelerating energy demand from data centers and electrification amid broad economic growth is creating structural pressure on power supply portfolios.** Governments' increasing focus on securing low-carbon, baseload power sources are creating new opportunities for civil nuclear energy, particularly small modular reactors (SMRs).
- **SMR adoption in Asia will be a long-term play.** Experienced domestic suppliers and government preference for indigenous technologies and builders create a complex environment for foreign companies in Japan and South Korea. Meanwhile, Southeast Asian markets offer long-term potential for commercial deployment that is expected to surpass currently low regulatory and technical



readiness, particularly in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

- **Navigating political dynamics as well as regulatory environments will be key to business success.** Across most markets in Southeast Asia, deployment will hinge on strengthening regulatory frameworks, overcoming public concerns, building local capacity and workforce, and addressing financing gaps. Companies that position themselves now as trusted technical and policy partners with key stakeholders will be best placed when market conditions align.

State Of Play

Small modular reactors (SMRs) offer scalable nuclear power generation designed to be more flexible, cost-effective, and quicker to deploy than traditional large reactors. In Northeast Asia, Japan and South Korea are pushing forward with indigenous SMR commercialization programs, limiting space for foreign entrants. In contrast, Southeast Asian governments actively seek international collaboration and rely on foreign partners to build capacity. Their appeal for Southeast Asia lies in their ability to provide clean, dispatchable baseload power in grid-constrained environments, with a perception of greater safety compared to traditional nuclear power.

COMPARATIVE VIEW

Globally, SMR commercialization is still at an early stage. Canada, the United Kingdom, and the United States are advancing in licensing and pilot deployment, while China's state-owned China National Nuclear Corporation (CNNC) has achieved a notable milestone with its HTR-PM at Shidao—the world's first grid-connected, commercially operated SMR. This marks technological leadership in pilot deployment, but China's overseas record remains limited, with six overseas projects compared to Russia's Rosatom State Corporation, which as of October 2025, had participated in building 20 reactors abroad.

While China is ahead of the U.S. on demonstration, its existing overseas activity has been concentrated in traditional large-scale nuclear reactors rather than SMRs. Russia's extensive overseas experience with conventional projects, established supply chains, and ability to offer state-backed financing give it a clear competitive edge in capital-constrained markets. However, the economics of SMR exports are expected to differ significantly from traditional nuclear projects—owing to their modular design, smaller footprint, and potential for standardized deployment—which could gradually reshape competitive dynamics once commercialization advances.

SOUTHEAST ASIA



Political appetite for nuclear energy varies across Asia, but the last two years have seen a surge in interest across Southeast Asia amid growing energy demands. Vietnam, having suspended its large-scale nuclear program in 2016, now views nuclear energy as crucial to the country's power mix, as evident from the Politburo's recent request for early implementation of nuclear power plants in Ninh Thuan province, but geopolitical considerations have restricted U.S. players.

Indonesia has publicly signaled interest in nuclear energy and initiated regulatory reviews but faces significant disaster risk and infrastructure hurdles. The Philippines has high-level political support and is exploring feasibility studies, though election cycles could disrupt continuity. Singapore, while publicly cautious, has taken deliberate steps in studying various SMR options and has shown interest in offshore or floating SMRs as part of efforts to increase its clean energy supply.

Malaysia has engaged with the IAEA on nuclear capacity building and in July 2025 launched negotiations with the United States for a 123 Agreement, signaling emerging political will. For companies, Malaysia offers an opening to shape regulatory frameworks from an early stage, though its public acceptance remains nascent. In early September, the U.S. government added Singapore and the Philippines to the list of authorized countries for nuclear technology exports – a critical step to enable bilateral commercial cooperation.

JAPAN AND SOUTH KOREA

Japan and South Korea stand apart. Both have advanced nuclear sectors, mature regulatory frameworks, strong political backing for SMR development, and robust supporting infrastructure and manufacturing capabilities – conditions that make them prime potential leaders in domestic and overseas SMR deployment. In practice, however, both governments are already advancing SMR development through domestic companies and have signaled a preference for homegrown commercialization pathways. Japan's Ministry of Economy, Trade and Industry (METI) is funding domestic consortia to develop next-generation reactors, while South Korea's government is backing Korea Hydro & Nuclear Power (KHNP) and other local firms for SMR exports and domestic deployment. These policies, combined with well-established supply chains and financing channels, leave limited entry points into those markets for foreign SMR developers outside of joint venture or technology partnership models.

TAIWAN

Taiwan, where nuclear energy is highly divisive, remains a high-potential wildcard. Taiwan completed its nuclear phase-out in May 2025 in line with the ruling party's "nuclear-free homeland" policy, and despite strong support for restarting the country's last nuclear plant, an August referendum failed to pass due to low turnout. However,



rapidly growing electricity demand from Taiwan's semiconductor and AI sectors could pressure the current government to pursue advanced nuclear options such as SMRs, although Taiwan is unlikely to be among the first wave of adopters.

The long-term potential for SMR-related business opportunities in Taiwan remains uncertain, given persistent public skepticism about nuclear energy, unresolved waste issues, and anticipated local opposition. Still, the government has taken initial steps to explore the technology, including the National Atomic Energy Research Institute's submission of a four-year SMR research plan to the National Science Council – seeking at least NTD 100 million (USD 3 million) annually in funding ahead of potential global commercialization by 2030 – as well as plans to send personnel to study in advanced nuclear energy countries such as Europe, the United States, and Japan in an effort to establish a national SMR research team.

Market Entry Considerations

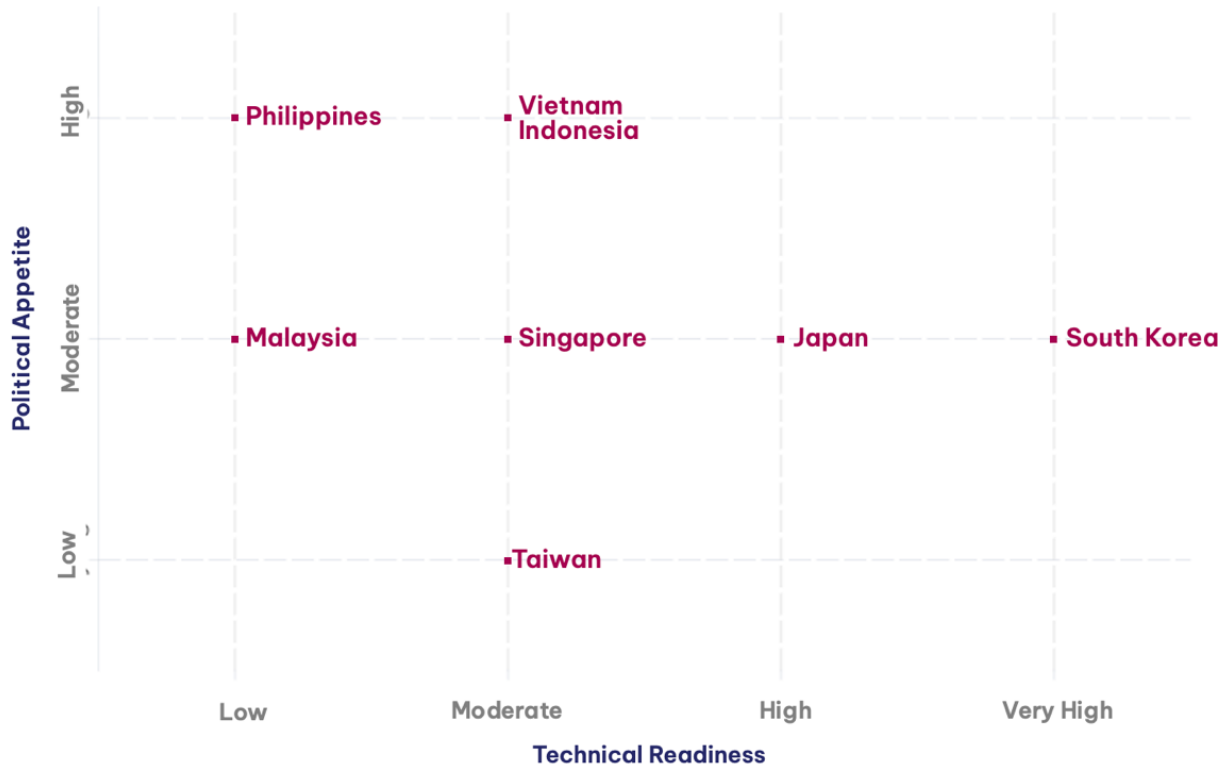
INDUSTRY PERSPECTIVE

The SMR market in Southeast Asia is at an inflection point where government appetite, regulatory frameworks, and energy security needs are evolving—but commercial entry points remain limited as countries study rather than commit to specific SMR designs. For industry, this means opportunities are less about near-term deployment orders and more for laying the groundwork for future market capture. Success in the region will follow companies that play the long game, treating the next 5 years as a preparatory phase to engage with key stakeholders, demonstrate technology, identify financing models, and cultivate partnerships.

Firms that commit early, remain engaged across political cycles, and approach this period as market creation, familiarity, and capacity building—rather than immediate sales—will be best placed to transition from early-stage partnerships to deals once conditions mature.



SMR Readiness by Market



Source: The Asia Group



- **123 Agreements:** As of October 2025, Vietnam (2014), Indonesia (1981), the Philippines (2024), Singapore (2024), Japan (1988), South Korea (2015), Taiwan (2014), and Thailand (2025) have active 123 Agreements with the U.S. government that enable civilian nuclear cooperation with U.S. companies. Malaysia signed an MOU with the United States in July 2025 to launch negotiations for a 123 Agreement, signaling political will but leaving a multi-year procedural step before cooperation can begin. Markets with existing agreements enjoy a significant advantage, as they eliminate a major compliance barrier and shorten lead times for SMR deployment; in markets without them, companies should expect a lengthy negotiation process before commercial projects can move forward.
- **Government Support:** In most Southeast Asian markets, nuclear adoption will require sustained high-level political commitment. Mapping political stakeholders, tracking policy debates, and engaging early with regulators can shorten the path to market entry.



- **Regulatory Environment:** Few markets have SMR-specific licensing, safety, or waste disposal frameworks. Companies that work now to shape regulatory language—through technical assistance, information exchanges, and advocacy—can build goodwill and lower entry barriers.
- **Foreign Competition:** State-backed competitors are already offering turnkey nuclear packages with financing attached. U.S. companies will need to leverage trusted partnerships, safety credentials, and proactive government engagement to remain competitive. Exposure mapping of competitive landscapes can clarify where and how to position effectively.
- **Openness to International Partnerships:** Southeast Asian countries are notably receptive to foreign collaboration; Vietnam, Malaysia, and Indonesia have signed MOUs with both the U.S. and South Korea. Singapore is conducting regular study trips to the United States. This openness creates early opportunities for engagement and technical cooperation, even if full-scale adoption remains years away.
- **Infrastructure Readiness:** Engineering capacity, grid integration, and supply chains vary widely by market. Early feasibility assessments and local partnership development can mitigate these constraints while creating “first-mover” advantage.
- **Domestic Stability & Disaster Risk:** Political volatility and high natural disaster exposure in markets like Indonesia and the Philippines could disrupt long-term investment planning. Stress-testing market entry strategies through scenario planning and ongoing political can strengthen resilience before capital is deployed.

Industry and Business Implications

WHAT COMPANIES SHOULD BE DOING NOW

- **Early Engagement and Advocacy:** Firms should expand technical dialogues with regulators and ministries in markets such as Indonesia, Vietnam, Thailand, and the Philippines. Engagement on safety, workforce, licensing, and waste management can build trust and shape regulatory frameworks to align with U.S. standards.



- **Partnership Development:** Given state-backed competition from Russia's Rosatom and China's CNNC, Western firms should prioritize partners with local utilities, engineering firms, and financial institutions. Public-private partnerships can showcase new technologies and provide a use case for local adoption. Brand-building partnerships with local universities and training institutions can help develop familiarity and trust.
- **Market Assessments for a Regional Strategy:** Companies should prioritize comprehensive market assessments to identify which countries are most likely to move first, determine alignment on SMR design preferences, and develop a coherent regional strategy that sequences engagement strategies accordingly. For example, Singapore's exploration of floating SMR pilots could allow early demonstration projects, while Vietnam and the Philippines may provide mid-term opportunities once 123 frameworks and feasibility reviews are operationalized.
- **Build Core Narratives:** Unlike Russian or Chinese turnkey packages, U.S. and Western firms can differentiate by emphasizing safety, technology advantages, environmental compliance, workforce training, and governance standards—factors increasingly scrutinized by governments and investors.

Looking Ahead: 2025–2028 Energy Watchpoints

Several developments in the next 12–36 months will shape the pace and direction of SMR adoption across Southeast Asia. For companies with long-term ambitions, sustained monitoring, policy engagement, and readiness to pivot will be essential.

- **Philippines:** Continuity on nuclear feasibility studies post the 2025 election will determine whether political momentum survives leadership changes. Early outreach to incoming administrations can secure policy alignment.
- **Vietnam:** The Politburo's recent openness to SMRs and the ongoing review of the national nuclear energy policy offers an opening for technical engagement and advisory partnerships before regulatory frameworks are finalized.
- **Indonesia:** Planned nuclear regulatory updates and potential IAEA cooperation could signal a market shift; close monitoring will allow rapid positioning.
- **Singapore:** Pending government decisions on feasibility studies and regulatory preparations for offshore or floating SMR pilot projects could set a regional precedent. Companies should be prepared with tailored proposals, safety cases, and financing models to influence early policy direction.



- **Taiwan:** Despite the failed nuclear referendum to restart the island's last nuclear power plant on August 23, the government is currently working to lay the groundwork for potential adoption of SMRs. A key watchpoint will be how much progress the government makes in advancing these initiatives and whether they translate into tangible policy shifts.
- **U.S. Legislative Carve-outs:** Changes in export financing rules could expand U.S. firms' ability to compete with state-backed rivals; advance preparation for financing structures is key.

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