Plugged In: Legal Trends, Investor Opportunities and Hard-Earned Lessons in Southeast Asia's Renewable Energy Transition


Sonya Kalnin, Partner (left)
Clarinda Tjia-Dharmadi, Partner and
Energy Sector Head – Asia Pacific (right)
Watson Farley & Williams LLP

Introduction:
A Region Entering a Decisive Energy Decade

Southeast Asia is entering a pivotal decade. Energy demand is rising rapidly as industrialisation, urbanisation and electrification accelerate, while governments pursue ambitious emissions targets that require major shifts in generation, transmission and regulation.

For Japanese investors, the opportunity is significant. The region is both a strategic economic partner and an established destination for Japanese capital, and Japan's strengths in energy technology and infrastructure finance position it well for this transition. In practice, we are seeing Japanese sponsors and financial institutions focus on structures that prioritise long-term stability, disciplined risk allocation and bankable execution across the region.

The landscape, however, remains complex. Regulations vary by jurisdiction, grid capacity often lags renewable rollout, and local content rules, permitting, land acquisition, offtake bankability and foreign ownership limits continue to shape investment decisions.

Over the next decade, progress will depend less on policy ambition and more on each country's ability to deliver bankable, grid-integrated and executable frameworks. Investors with a full-lifecycle legal perspective, from development through financing to exit, will be best placed to capture long-term value.

Indonesia:
Scale with Structural Complexity

In Indonesia the opportunity is clear. The pathway is not.

Indonesia is widely-regarded as the most important renewable energy market in Southeast Asia, both in scale and long-term strategic significance. It has abundant resources across geothermal, hydro, solar, wind and biomass, alongside the highest energy consumption in ASEAN.

Opportunities

Indonesia has set a target of over 73% renewable energy in its energy mix by 2060, compared to a current share of approximately 13%, highlighting a substantial growth gap.

The RUPTL 2025–2034 outlines 69.5 GW of new capacity, with 76% expected from renewables, led by solar, hydro, wind and geothermal. Cross-border opportunities are also emerging, including large-scale renewable exports to Singapore, which has granted conditional approvals for up to 3.4 GW of imports from Indonesia starting in 2028. These approvals are designed to advance project development, and the selected consortia must still complete the process of securing the necessary development rights and regulatory clearances in Indonesia before construction and transmission can proceed.

Challenges

Indonesia remains a complex market for investors. PLN

retains its monopoly over transmission and distribution and is the sole offtaker for most projects, requiring IPPs to operate within a regulated PPA framework. Procurement is lengthy, often 12–18 months to reach PPA signing, and grid infrastructure remains uneven outside major regions. Local content rules, mandatory partnerships and shifting regulations add further complexity. Because PLN's PPA payments are in Rupiah while financing is typically in USD, lenders require indexation, hedging and other currency-risk protections.

Indonesia's regulatory framework also limits the security package in structures where PLN or another state owned entity holds a majority interest. Presidential Decree No. 59/1972 bars SOEs, including PLN, from granting guarantees or using state assets (including shares in project companies) as collateral for foreign loans. The World Bank Negative Pledge may impose additional limits on security over those assets. Indonesian transactions therefore rely on carefully structured alternatives to provide lender protection while complying with these constraints.

Coal continues to dominate the generation mix, creating tension with renewable energy targets.

Investor insight

Indonesia remains a market of scale and long-term opportunity, but execution depends on careful structuring of local partnerships, navigating regulatory complexity, grid readiness, financing constraints and realistic timelines, an approach we frequently see adopted by Japanese sponsors and lenders operating in the market. It is a market that rewards persistence, informed negotiation and adaptability.

Vietnam: Growth with Infrastructure Constraints

Vietnam's challenge is not demand. It is infrastructure catching up with ambition.

Vietnam is increasingly central to Southeast Asia's renewable energy transition. The Revised Power Development Plan VIII commits the country to a substantial expansion of renewable capacity by 2030 and a deep transformation of the power sector by 2050.

Opportunities

Vietnam's net-zero commitment by 2050 anticipates renewables reaching 74–75% of the energy mix. The Revised PDP8 reflects this scale, significantly increasing wind, solar and storage targets while adding biomass, waste-to-energy and hydropower.

Vietnam's strong solar irradiation and onshore/offshore wind resources support large-scale renewable growth. Rising electricity demand from sustained economic expansion further reinforces the need for rapid capacity additions and pressures existing infrastructure.

Regulatory progress is also advancing. The Electricity Law 2024 and its implementing regulations provide clearer rules on development, pricing and market participation. The Direct Power Purchase mechanism

Vietnam PDP8 and Revised PDP8: Power Generation Capacity Targets

Power Source	PDP 8 (issued under Decision 500/QD-TTg)	Revised PDP8 (issued under Decision 768/QD-TTg)
Wind	• onshore wind: 21,880 MW • offshore wind: 6,000 MW	• onshore & nearshore wind: 26,066 – 38,029 MW • offshore wind: 6,000 – 17.032 MW, expected to be operational between 2030 – 2035
Solar	12,836 MW (not including existing rooftop solar power)	46,459MW – 73,416 MW (including concentrated and rooftop solar power)
Biomass, waste-to-power and other new sources	• biomass: 1,088 MW • waste-to-power: 1,182 MW	• biomass: 1,523 – 2,699 MW • waste-to-power: 1,441 – 2,137 MW • geothermal and other new sources: 45 MW
Hydropower	29,346 MW	33,294 – 34,667 MW
Hydro-pump storage	2,400 MW	2,400 – 6,000 MW
Battery storage	300 MW	10,000 – 16,300 MW

under Decree 57/2025 is a major step toward enabling corporate renewable procurement, with further regulatory updates expected in the coming months.

Challenges

Renewable deployment has, in some areas, outpaced supporting infrastructure, with transmission capacity not always keeping up with new generation and resulting in curtailment and dispatch uncertainty. Administrative processes remain a bottleneck, as multi-agency approvals, permitting and land acquisition delay timelines and increase costs. Bankability issues in PPAs, including tariff structures, offtake commitments and risk allocation, also remain central investor concerns.

A further issue is the review of historic FiT entitlements for solar and wind projects that reached COD without a Construction Completion Acceptance certificate. The Government Inspectorate has identified more than 170 such projects, requiring EVN to reassess their FiT eligibility.

Under Resolution 17/NQ-CP (26 January 2026), the government has instructed the Ministry of Industry and Trade and EVN to address these FiT issues, coordinate with provincial authorities, verify compliance and manage administrative violations. Provincial authorities must seek guidance from the Ministry of Justice where needed to ensure consistency.

Despite this resolution, the issue remains unresolved, and a clearer, higher-level directive may be required to achieve final clarity.

Investor insight

Vietnam has strong momentum and a clear high-level policy direction but turning this into bankable projects will depend on aligning infrastructure development, regulatory execution and financing frameworks. For investors, the opportunity lies not only in scale but in structuring projects that can navigate these constraints and deliver reliable, long-term returns, with transmission readiness and curtailment risk remaining key considerations for Japanese lending institutions in particular.

Philippines: Openness with Execution Challenges

Policy has opened the door. Infrastructure still determines who gets through it.

The Philippines is characterised by a highly open, policy-driven renewable energy market. The removal of foreign ownership restrictions in 2022 marked a significant shift, positioning it as one of the most accessible markets for international investors in Southeast Asia.

Opportunities

The Philippines benefits from substantial renewable resource potential, including offshore wind, solar and geothermal capacity, with geothermal already an established and globally significant segment. This is supported by one of the region's most comprehensive renewable energy policy frameworks, featuring competitive auctions, net metering schemes, tax incentives and long term targets of 35% by 2030 and 50% by 2040, providing a clear pathway for market development.

Recent auction rounds have shown strong investor interest, with significant capacity awarded across solar, wind and storage. The continued expansion of solar including floating and rooftop applications and emerging offshore wind highlights the breadth of opportunity across technologies.

Challenges

Despite this strong policy foundation, execution remains a key constraint. Permitting processes involve multiple agencies and evolving regulatory frameworks, particularly in emerging sectors such as offshore wind and battery storage.

Grid infrastructure limitations create congestion risks, particularly for projects located far from demand centres. Port and logistics infrastructure also require further development to support large-scale offshore wind deployment. In addition, reliance on imported technology affects both cost structures and delivery timelines.

Investor insight

The Philippines offers strong policy support and a growing pipeline of opportunities, but successful delivery still requires alignment across permitting, infrastructure

and supply-chain considerations to achieve bankable projects. For investors, including Japanese strategic investors with experience in regulated infrastructure and long-dated assets, the opportunity lies in navigating this balance between openness and execution, and structuring projects that move efficiently from policy to delivery.

Thailand: Stability with Gradual Evolution

Thailand offers predictability but not always speed.
Thailand represents a more measured and structured pathway in Southeast Asia's energy transition. It benefits from a relatively stable regulatory framework and a clear policy direction, including a target of achieving carbon neutrality by 2050.

Opportunities
Thailand's renewable sector benefits from a strong resource base across solar, wind and biomass, supported by a robust agricultural supply chain. A structured policy framework,including feed-in tariffs and the Alternative Energy Development Plan targeting 30% renewables by 2037, provides added visibility.

Investment opportunities are strengthened by Board of Investment incentives, especially in areas such as energy storage, carbon capture and digital infrastructure. Thailand is also positioning itself as a regional data-centre hub, leveraging its energy network and access to renewable power.

Looking ahead, upcoming renewable bid rounds are expected to prioritise solar-plus-storage, wind and biomass, alongside growing interest in private offtake structures and corporate procurement.

Challenges
Despite this stability, execution remains shaped by structural constraints. Grid capacity limitations continue to require significant modernisation to support higher levels of renewable integration.

Regulatory processes, including stakeholder consultations and licensing requirements, can extend project timelines. Adjustments to tariff structures and project schedules introduce variability into financial assumptions, while existing fossil fuel infrastructure continues to influence the pace of transition

Investor insight
Thailand offers a stable and predictable platform for renewable energy investment, but successful delivery requires structuring projects with enough flexibility to accommodate regulatory timelines and grid constraints. This profile aligns well with the approach often taken by Japanese corporates and financial institutions, who prioritise regulatory visibility and long-term operational certainty in deploying disciplined, long-term capital.

Singapore: Coordination and Regional Influence

Singapore does not generate scale. It coordinates it.
Singapore occupies a distinct position in Southeast Asia's energy transition. Rather than serving as a source of large-scale renewable generation, it acts as a regional hub for coordination, financing and innovation, shaping how the transition is delivered across the region.

Opportunities
Singapore has committed to net zero emissions by 2050 and plans to import around 6 GW of low carbon electricity by 2035, placing regional interconnection at the core of its energy strategy. With limited domestic resources, Singapore is prioritising enabling technologies and system level solutions, directing investment toward hydrogen, ammonia, carbon capture and sustainable fuels. This is supported by a proactive regulatory environment led by the Energy Market Authority, including regulatory sandboxes and funding initiatives such as the S$10bn Future Energy Fund.

Singapore is also strengthening its position as a centre for sustainable finance, carbon markets and energy trading, facilitating capital flows and supporting project development across Southeast Asia. In parallel, it continues to advance cross border energy initiatives, reinforcing its role as a key enabler of regional power integration.

Challenges
Singapore's structural constraints remain a defining factor. Limited land and natural resources restrict large-scale renewable generation, with solar expected to meet only a small share of overall demand.

Significant investment is required in infrastructure, including grid upgrades, interconnection systems and supporting technologies. At the same time, solar intermittency and aging infrastructure present ongoing operational and system-level challenges.

Investor insight

Singapore's role in the energy transition is driven by its ability to enable regional solutions, from financing and technology development to cross-border power trade. For investors, it serves as a strategic platform to access, structure and scale regional opportunities, making it a central hub in Southeast Asia's energy ecosystem. For Japanese groups managing Southeast Asia exposure from regional hubs, Singapore often plays a central role in coordinating financing, risk management and cross-border execution.

Regional Themes: Aligning Policy, Infrastructure and Capital

Across these markets, a clear pattern emerges, regulatory ambition is moving faster than infrastructure, and infrastructure is moving faster than bankability.

Common themes include:

- long-term PPAs as the basis for bankability;
- grid constraints and curtailment risks;
- permitting and land acquisition challenges;
- local content and regulatory complexity; and
- supply chain and EPC-related risks.

In many cases, projects fail not for lack of capital, but due to misalignment across these factors. This misalignment is structural across the region, not jurisdiction-specific, and increasingly determines which projects move forward and which stall.

Conclusion: From Targets to Delivery

Southeast Asia's energy transition is defined by both scale and complexity. Policy direction is clear and capital is available but the challenge lies in delivery. For investors, including Japanese investors with deep experience in long-term infrastructure, the opportunity is significant. However, the next phase will be shaped less by ambition and more by the ability to turn policy into projects that are bankable, deliverable and sustainable.

Success will depend not only on where capital is deployed, but on how effectively it is structured, aligned and executed. Those who navigate these dynamics will not just participate in the transition but help shape how it unfolds across the region.

Climate and Carbon Regulation Landscape in Southeast Asia

Jurisdiction	Climate Legislation	Carbon Tax	ETS / Carbon Market	Mandatory Reporting	CBAM
Thailand	Draft Climate Change Act	In development	ETS + carbon credit in development	National GHG database in development	In development
Vietnam	LEP 2020, Decree 06	In development	Yes (full rollout by 2029)	Yes (biennial inventory)	No
Indonesia	Integrated (sectoral)	Yes (2025)	No	Some sectors	No
Singapore	Carbon Pricing Act (2018)	Yes	No (ICC offset allowed)	Yes (phased CRD rollout)	No