



Cross-Border Low-Carbon Electricity & Carbon Units: Indonesia, Singapore and ASEAN

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About the Authors



Peter Doraisamy

Group Managing Partner of PDLegal

pdoraisamy@pdlegal.com.sg

With 25 years of practice, Peter is widely recognised as a leading advocate in the Asia-Pacific region, acting in complex commercial litigation and international arbitration, particularly in maritime and shipping, international trade, commodities, restructuring and insolvency, insurance, shareholders' disputes, employment, corporate governance, and fraud and asset recovery. Beyond contentious matters, he advises on joint ventures, mergers and acquisitions, and restructuring exercises, representing multinational corporations, publicly listed companies, high-net-worth individuals, and law firms. Peter is admitted as a Barrister-at-Law (Middle Temple) and Advocate & Solicitor of the Supreme Court of Singapore, holds an LL.M. in Maritime Law from the National University of Singapore, and is empanelled as an arbitrator with institutions including AIAC, DIAC, SCMA, Thailand Arbitration Centre, and Vietnam Traders Arbitration Centre, as well as being a SIMI Accredited Mediator.



Paul Papon Charoenpao

Managing Partner of PDLegal Thailand

paponc@pdlegal.com.sg

Papon is a corporate and commercial lawyer whose practice is dedicated to providing strategic counsel and legal solutions in mergers & acquisitions, financial services, venture capital and private equity financing, and fintech, including Web3-based projects. Focusing on emerging technology companies, he advises a diverse range of clients, including financial institutions, deep-tech startups, tokenization projects, and high-net-worth investors, providing guidance on corporate and tax structuring, inbound and outbound investments, and general corporate and commercial matters. Papon has advised prominent venture capital funds and corporate venture capitalists on early- and growth-stage investments, both onshore and offshore, conducting thorough due diligence and implementing effective risk-mitigation strategies to facilitate successful transactions. He also supports clients investing in private equity and venture capital funds.

**Chuck Siew Ka Wai**

Co-Managing Partner of Tan, Siew & Lee (TSL Legal)

kwsiew@tsl-legal.com

Chuck Siew is one of the Founding Partners of Tan, Siew & Lee (TSL Legal) and a specialist in commercial dispute resolution. Prior to establishing TSL Legal, he worked at two top-tier law firms in Malaysia and has extensive experience advising and representing clients in arbitrations conducted under institutional rules, including ICC, AIAC, SIAC, IEM, PAM, GAFTA, as well as ad hoc arbitrations. His practice focuses on complex disputes in construction and engineering, oil and gas, and infrastructure projects, including adjudication proceedings under the Construction Industry Payment & Adjudication Act 2012 (CIPAA), arbitration, and Malaysian court proceedings. Chuck also advises on drafting and negotiating construction- and engineering-related agreements. He represents private individuals and corporations in civil and commercial disputes, including matters involving civil fraud, breach of fiduciary duties by senior management and directors, shareholder disputes, and white-collar crime defence.

**Gaurav Kothari**

Consultant at Bagus Enrico and Partners

gaurav.kothari@bagusenrico.com

Gaurav is an India-qualified Advocate, serving as a consultant at Bagus Enrico and Partners. Holding dual bachelor's degrees in Business and Law, and trilingual in English, Hindi, and Bahasa Indonesia, he brings a distinctly cross-border perspective to his practice, advising primarily on corporate mergers and acquisitions, banking and finance, and technology law. His transactional experience spans feasibility analysis and market entry structuring, legal due diligence, and the drafting and negotiation of SPAs, SHAs, joint venture agreements, and commercial contracts, as well as banking and finance documentation, including loan, security, and probate agreements. In the technology and digital asset space, he advises on personal data compliance, payment services, and crypto assets, including product terms, vendor agreements, and data processing and transfer arrangements.

Executive Summary

Southeast Asia's energy transition is entering a decisive phase in 2025, shifting towards regional power and carbon-market integration, supported by the ASEAN Power Grid Financing Initiative to unlock bankable cross-border infrastructure.

A key opportunity is the Indonesia–Singapore low-carbon corridor. Singapore's structural constraints are driving a strategic push to import 6 Giga Watts of low-carbon electricity by 2035, while Indonesia is positioning itself as a renewable exporter, targeting 3.4 Giga Watts of exports to Singapore by 2035 to attract investment and grow its green industry. This “win-win” agenda was formalized through three Memorandas of Understanding signed in June of 2025, covering cross-border electricity trade, carbon capture and storage, and a sustainable industrial zone in the Batam, Bintan and Karimun region.

Indonesia has centralized electricity exports under the state electricity company as the sole aggregator, while introducing renewable power purchase agreement guidelines that improve investor clarity and allow parties to contractually allocate environmental attributes and carbon rights. On the demand side, Singapore's Energy Market Authority import regime provides structured bankability through strict requirements on supply reliability, emissions intensity, licensing, performance bonds, and renewable energy certificates verification.

Finally, the report highlights that cross-border electricity trade is increasingly intertwined with carbon pricing and international carbon credit mechanisms. Indonesia's emerging carbon governance framework aims to enable Paris-aligned transfers of carbon units, while Singapore's carbon tax framework and international carbon credit regime create potential demand for high-integrity credits.

1. Thesis and Market Context

The energy landscape in Southeast Asia is undergoing a structural transformation. For decades, the region's energy narrative was defined by resource nationalism.¹ However, the regulatory and diplomatic developments of 2025 signal the emergence of a new paradigm of resource integration. The year 2025 represented a "turning point" for the region's climate governance, driven by the launch of the Association of Southeast Asian Nations ("ASEAN") Power Grid Financing ("APGF"), which develops an integrated regional power grid to accelerate the growth of renewable energy in Southeast Asia.² Regional cooperation is crucial to accessing green growth opportunities that are otherwise out of reach due to limited domestic markets.

Cross-border energy collaboration between Indonesia and Singapore is emerging as a cornerstone of both countries' low-carbon transition strategies. Singapore, as a densely populated city-state with limited domestic renewable energy potential and a dependence on natural gas, requires diversified low-carbon electricity imports to meet its 2050 net-zero target towards greater sustainable diversification of its energy sources, while maintaining energy security.³ Indonesia, as Southeast Asia's largest economy with large potential for renewable energy resources, must simultaneously meet surging domestic electricity demand and position itself as a clean energy exporter to support regional decarbonization while generating foreign exchange and investment inflows.

In June of 2025, the two governments signed three Memoranda of Understanding ("MoU") to establish policies and frameworks enabling cross-border power trade within 12 months.⁴ Indonesia expects to export 3.4 Gigawatts ("GW") of low-carbon power to Singapore by 2035, and Singapore has accordingly raised its clean electricity import target to 6 GWs by 2035, about one-third of its projected supply.⁵ The two governments are also forging a "win-win" partnership, sourcing cheap green power for Singapore while attracting domestic manufacturing investments, such as solar photovoltaic ("PV") and battery plants, to Indonesia.⁶ Meanwhile, Singapore's carbon tax regime and Indonesia's newly launched carbon exchange and regulatory framework signal a commitment to assigning economic value to carbon and facilitating international credit trading. The cooperation leverages Indonesia's renewable energy potential and Singapore's move away from natural gas, supporting regional decarbonisation and moving beyond a buyer-seller relationship into a strategic partnership for Southeast Asia's low-carbon transition. By aligning energy, industry, and carbon-pricing goals, they aim to lead emerging green value chains and model wider ASEAN collaboration.

2. The Strategic & Regional Context: ASEAN and Bilateral Foundations

A. The ASEAN Vision

ASEAN envisions an integrated grid linking all 10 member states, enabling countries with surplus renewable energy (e.g., Lao PDR's hydropower, Malaysia's solar) to supply fast-growing neighbours. The ASEAN Power Grid ("APG") aims to establish a fully interconnected regional electricity network that facilitates large-scale cross-border power trading, enhances energy security, and accelerates the deployment of renewable energy across Southeast Asia. To deliver this vision, ASEAN has agreed that the APG must go beyond building cross-border transmission lines and also include upgrades to domestic grids and subsea cable infrastructure.⁷ As Southeast Asia's electricity needs are expected to triple by 2050, the APG helps balance the region's supply by transferring clean surplus power from producers such as Lao PDR and Malaysia to larger consumers, including Vietnam, Thailand, and Indonesia. In order to support this vision, priority interconnection projects have been mapped (e.g., ASEAN Interconnection Masterplan Studies and Heads of ASEAN Power Utilities/Authorities network), aiming to fully integrate regional grids by 2045.⁸

2025 marked a significant turning point with the October launch of the APGF Initiative, which aims to make projects financially viable. Recognising that the APG will require unprecedented investment, the ASEAN Interconnection Masterplan Study ("AIMS") III estimates US\$764 billion in transmission and generation assets to support high renewable energy penetration. The current interconnection capacity of 7.7 GW must more than double by 2040. The pathway to a fully interconnected ASEAN grid by 2045 will hinge on nearly US\$800 billion in generation and transmission investments. Launched by the ASEAN Secretariat in partnership with the Asian Development Bank ("ADB") and the World Bank, the APGF provides a dedicated facility to move projects "from concept to construction".

B. The LTMS-PIP Precedent

The Lao-Thailand-Malaysia-Singapore Power Integration Project ("LTMS-PIP") is the first multilateral trade link in ASEAN. In Phase I (June 2022), up to 100 Megawatt ("MW") of Lao hydropower was delivered to Singapore via Thailand and Malaysia. Phase II (mid-2024) expanded the scheme to 200 MW by adding Malaysian supply (multi-directional trading). Separately, Malaysia initiated a 100 MW Malaysia Energy Exchange ("ENEGEM") pilot. In 2024, Sembcorp was awarded 50 MW of renewable power from Tenaga Nasional Berhad ("TNB") to flow to Singapore via ENEGEM.⁹ These pilots demonstrate how surplus

generation in Lao PDR and Malaysia can be wheeled to Singapore under coordinated frameworks.

Thailand, serving as the transit country, levies a wheeling charge of approximately 3.1585 US cents per kilowatt-hour (“kWh”)¹⁰ which is pivotal as it establishes the cost of transit across third-party grids. Thailand is finalising its Direct Power Purchase Agreement (“PPA”) regulations in late 2025, allowing data centres and large users to procure renewable energy directly from producers via the grid (Third Party Access), further liberalising the regional market.¹¹

Malaysia launched the ENEGEM auction, enabling the export of green electricity to Singapore and strengthening cross-border integration and ASEAN energy cooperation. For Singapore, while power from existing TNB and Large Scale Solar (“LSS”) projects may not qualify under the Energy Market Authority’s (“EMA”) 4 GW import tender, near-term Malaysian renewable imports can still help meet the rising demand for renewable energy and renewable energy certificates (“REC”), especially from data centres. Singapore already has a functioning import framework, proven through the 100 MW YTL PowerSeraya trial, so regulatory barriers are minimal.¹²

C. The Indonesia–Singapore Bilateral Framework

On June 13, 2025, the governments of Indonesia and Singapore signed three MoUs that formalize a multifaceted energy and decarbonization partnership.¹³ The three MoUs address the Cross-Border Electricity Trade (“CBET”); Carbon Capture Storage (“CCS”) collaboration; and development of a Sustainable Industrial Zone (“SIZ”) in Indonesia's Batam, Bintan and Karimun (“BBK”) region.

The MoUs reflect both countries' commitment to accelerating the energy transition through direct bilateral cooperation, in addition to a monetary investment of more than US\$ 10 billion. This investment aims to support the development of a solar panel supply chain, the patenting of CCS technologies, and green energy initiatives.¹⁴ Additionally, the investment will be allocated to several strategic areas, such as the construction of large-scale solar panel installations; the establishment of green industrial zones that integrate low-emission supply chains across manufacturing, technology, and logistics sectors; and the development of CCS facilities to establish Indonesia and Singapore as regional leaders in carbon management technologies.¹⁵

Under the CBET MoU, Singapore and Indonesia commit to facilitating the necessary policies, regulatory frameworks, and business arrangements for cross-border electricity

trade within 12 months of the MoU signature.¹⁶ These projects could attract substantial investment, increase foreign exchange inflows, and enhance annual tax revenues. Both countries are contributing to the advancement of a more integrated APG, thereby strengthening the region’s energy security and sustainability.

To achieve the goals of the CCS MoU, a joint Working Group will be formed to develop components for a legally binding government-to-government agreement on CCS. This agreement is essential for implementing cross-border CCS projects between Singapore and Indonesia.

The SIZ MoU further supports this by the establishment of a joint task force to study the development of potential industries within an SIZ in the BBK region, aimed at supporting renewable project development and industrial localization.¹⁷

3. Indonesia's Electricity Export Framework: The Supplier's Regulatory Landscape

A. **The Structural Evolution from Private-Led to State-Aggregated Model**

Indonesia's approach to cross-border electricity exports underwent a pivotal transformation in September 2025, when President Prabowo Subianto signed Governmental Regulation No. 40 of 2025 on the National Energy Policy (“**GR No. 40/2025**”).¹⁸

This regulation designated the state electricity company (*PT Perusahaan Listrik Negara* or “**PLN**”) as the sole aggregator and authorized entity for all international electricity imports and exports.¹⁹

The rationale for centralizing cross-border electricity trade under PLN reflects several strategic considerations. Firstly, it enhances Indonesia's negotiating position vis-à-vis Singapore by consolidating supply-side coordination through a single state-owned entity, similar to how PT Pertamina coordinates natural gas exports. Second, it provides a transparent, government-backed mechanism for channelling revenue from cross-border electricity sales into renewable energy development and grid strengthening. Third, it ensures alignment with Indonesia's domestic energy security objectives and electricity supply planning under PLN's Electricity Supply Business Plan (“**RUPTL**”), which targets 69.5 GW of new generation capacity by 2034.²⁰

The regulatory framework for PLN's export authority introduces flexibility in settlement mechanisms, allowing electricity sales to be transacted not solely in cash but through swap arrangements, whereby electricity sales may be settled through other energy forms or commodities.²¹

B. Challenges and Considerations

Centralising cross-border electricity trade under PLN creates several practical challenges. PLN's domestic electricity tariffs are set by law and are much lower than Singapore's market prices, which weakens the commercial viability of export projects.²²

This tariff differential means that projects generating electricity destined for export must negotiate PPAs at prices substantially above PLN's average cost of supply, but competitive with Singapore's wholesale electricity market, this squeezes project returns and increases development risk.

Additionally, PLN's concurrent domestic commitments under its RUPTL raise capital allocation questions, as PLN must balance investment in domestic grid and generation capacity against export infrastructure development.

C. Renewable Energy Power Purchase Agreement Framework

The Indonesian government, through the Ministry of Energy and Mineral Resources ("MEMR"), issued Regulation No. 5 of 2025 on Guidelines for PPAs ("MEMR No. 5/2025") from renewable energy power plants. This regulation establishes a comprehensive, technology-specific framework for renewable energy projects seeking to sell electricity to PLN.²³ Several provisions are particularly relevant to cross-border export projects:

PPA Duration and Extension: MEMR No. 5/2025 establishes a maximum PPA duration of 30 years from the Commercial Operation Date, with express provision for extensions beyond the initial term to be determined by PLN.²⁴ This represents a substantive change from prior PLN practice, in which extensions were granted only in force majeure circumstances. The extension provision enables long-term revenue visibility for project investors and may enhance project economics, particularly for long-life renewable assets such as hydroelectric or offshore wind installations.

Environmental Attributes and Carbon Economic Value: MEMR No. 5/2025 expressly permits the independent power producers and PLN to agree contractually on the allocation of carbon credits and other environmental tradable rights, provided such

allocation is not otherwise determined by regulation.²⁵ This flexibility represents a notable advance over recent PLN practice, in which the utility sought to secure all environmental attributes for itself. For projects exporting electricity to Singapore and generating embedded carbon credits, this provision enables negotiation between the project developer and PLN regarding the allocation of carbon credit monetization rights.

A closer look at the Indonesia MEMR Regulation No.5/2025

On March 4, 2025, the Ministry of Energy and Mineral Resources (MEMR) Indonesia **ratified the Ministerial Regulation (Permen) ESDM Number 5 of 2025** on Guidelines for Power Purchase Agreements (PPAs) from Renewable Energy Sources power plants.

This is a **subsequent regulation to Presidential Regulation No. 112/2022** on the “Acceleration of Renewable Energy Development for Electricity Supply,” which mandated the Minister of Energy and Mineral Resources to establish a guideline for power purchase agreements from renewable energy sources.

Renewable Energy PPAs were **initially governed by MEMR Regulation No. 10/2017**, which established fundamental provisions but contained regulatory gaps, particularly in IPP-PLN contractual arrangements. This MEMR Regulation No. 5/2025 **refines the previous regulation and addresses gaps** by providing a comprehensive guideline regulatory framework for renewable energy PPAs.

The objective of MEMR Regulation No 5/2025 are:



Realising energy resilience through renewable energy utilisation and pushing for an accelerated progress of renewable energy adoption for electricity supply.



Providing a clear regulatory framework for electricity sales from renewable energy sources.



Fulfilling the mandate to establish a guideline for power purchase agreement from renewable energy sources, as outlined in Presidential Regulation No. 112/2022.

Source: ASEAN Centre for Energy – Guidelines on Power Purchase Agreement from Renewable Energy Sources

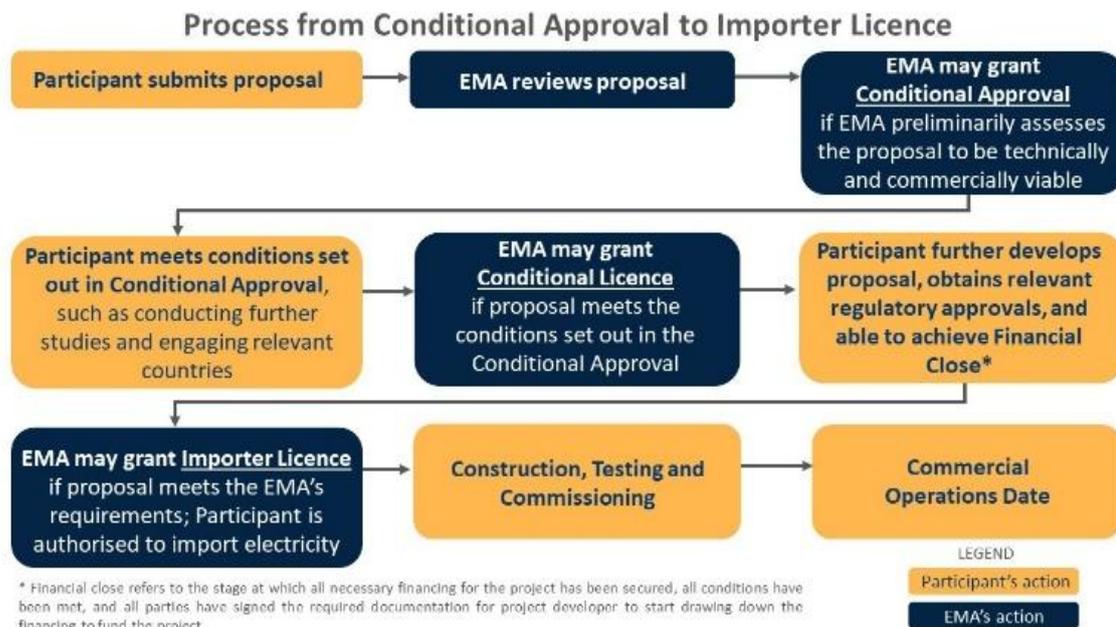
4. Singapore's Electricity Import Framework: The Offtaker's Regulatory Landscape

The EMA has implemented a licensing regime to manage the technical and economic risks of relying on imported power.

Regarding supply consistency, imported electricity must be non-intermittent, meaning the supply remains constant and stable during each half-hourly dispatch period.²⁶ Projects must reach a minimum of 75% quarterly load factor within five years and maintain around 90% annual availability to match local reliability standards. Import capacity must be at least 600 MW for shared landing sites or 300 MW for private sites.²⁷ The framework also mandates local backup capacity to address potential outages, which could take up to six months to repair in cases of subsea cable damage.²⁸

Projects must achieve an annual emission factor no higher than 0.15 tCO₂e/MWh within five years of commercial operations.²⁹ While zero tCO₂e/MWh is preferred, some initial reliance on carbon-emitting technology may be permitted to ensure supply reliability and competitiveness. However, coal-fired generation is rejected entirely, as EMA’s longer-term vision is for electricity imports to come only from low-carbon sources. Regarding verification of low-carbon attributes, RECs or equivalent proof must be submitted annually to EMA for verification. These RECs must conform to Singapore standards or internationally recognised standards verified by accredited platforms approved by EMA. For renewable sources that don’t produce electricity on a 24/7 basis, sufficient RECs must be produced over a year to demonstrate that the total imported electricity can be considered to have zero net carbon emissions.

Electricity import is a licensable activity, and importers must hold an Electricity Importer Licence before they can commence importation.^{30 31} The licensed importer must be a Singapore-incorporated company, with a licence tenure typically around 25 years, pegged to the duration of the upstream generation supply agreement or technical life of the interconnector, subject to EMA’s approval. Companies cannot import electricity to Singapore with only a conditional license from the EMA. To obtain an importer license, they must complete three approval stages: first, secure initial conditional approval; next, obtain a conditional license; and finally, be granted the full importer license.³²



Source: Energy Market Authority

As part of the licensing requirements, importers must issue a performance bond of S\$33 million per 100MW of licensed import capacity in favour of EMA upon issuance of EMA’s

Conditional Approval to ensure commitment to project delivery, which may be forfeited if the importer fails to deliver the project on time or breaches regulatory requirements and obligations. After a period of one year of steady commercial operations, EMA will reduce the performance bond requirement to S\$1 million per 100MW. Additionally, licence fees (fixed and variable) components are payable and subject to regular review. Importers planning to exit the market must inform EMA five years in advance, as per the Transmission Code and Importer Licence requirements. EMA has granted Conditional Approvals to 11 projects for importing low-carbon electricity from Australia, Cambodia, Indonesia, Sarawak (Malaysia), and Vietnam. Of these, six projects have advanced and received Conditional Licences.

For wholesale market participation, importers must register with the Energy Market Company as Market Participants and be subject to the Market Rules.³³ They are required to provide offers into the energy market and compete to secure dispatch into the Singapore network for each half-hourly period. Once dispatch for a particular quantity of electricity is secured, the importer will be scheduled to inject and sell such quantity of electricity into the market, following the same approach required for traditional generators. As importers are expected to play a role similar to traditional generators, they would also be required to provide primary and contingency reserves as per the Transmission Code. The Automatic Financial Penalty Scheme also applies, with penalties imposed if actual power quantity deviates from each half-hourly real-time dispatch schedule by more than 10MW.

Further, it is expected that consumers purchasing low-carbon electricity from importers will also purchase the associated RECs from the same importers to ensure that their purchased electricity originates from a low-carbon source.³⁴ REC ownership and trade are determined on a commercial basis, allowing market mechanisms to facilitate the connection between low-carbon electricity supply and demand.

5. Overview of Carbon Market Mechanisms: Pricing, Linkages, and Bilateral Integration

A. Indonesia's Carbon Pricing Framework: The Carbon Economic Value Ecosystem

The process of using the Carbon Unit Registry System involves several key steps:



Source: Neyen.io

Indonesia has developed a hybrid carbon pricing and carbon market framework regulated in Presidential Regulation 110 of 2025 (“**PR No. 110/2025**”). PR No. 110/2025 sets a national carbon budget, defines how emission reductions become tradeable carbon units and routes all trading through the new Carbon Unit Registry System, including for foreign transfers, according to Indonesian national protocols or international frameworks (e.g. United Nations Framework Convention on Climate Change standard). This decentralized Carbon Unit Registry is able to record all carbon units in real time, to avoid double-counting of emission reductions.³⁵ For Indonesia–Singapore projects, this means exported renewable electricity can generate carbon credits that are properly recorded, linked to Indonesia’s nationally determined contributions, and transferred to Singapore with corresponding adjustments so there is no double counting. In practice, PR No. 110/2025 enables cross-border power deals to be structured as “power plus carbon” transactions, which aligns Indonesia’s immense subsurface storage potential, estimated at 600 gigatons, with Singapore’s goal to store 2 Mt CO₂ annually by 2030 (projected at 6 Mt by 2050), cementing both nations’ status as a regional CCS hub.³⁶

Launched in September 2023 by President Joko Widodo, the Indonesia Carbon Exchange (“**IDXCarbon**”) is a centralized marketplace for carbon trading operated by the Indonesia Stock Exchange. IDXCarbon provides transparent carbon price formation through multiple transaction mechanisms such as auctions, regular trading sessions, negotiated trading, and a marketplace for direct buyer-seller transactions. Following the October 2025 signing of Mutual Recognition Agreements (“**MRA**”)s with international certifiers (Verra and Gold Standard), IDXCarbon now acts as the bridge for corresponding adjustment units.³⁷

However, two years post-launch, IDXCarbon continues to struggle with market depth and liquidity. The total transaction value since its inception is estimated at only IDR 78 billion (approximately USD 4.9 million), with only eight projects currently listed. Furthermore, with roughly 130 registered participants, the exchange covers only a small fraction of Indonesia’s total emissions. Despite the high-profile launch, these figures suggest that the platform has yet to achieve the scale necessary to function as a primary driver of the national decarbonization strategy. Average prices have hovered in the low single digits (around USD 4 per tonne CO₂e), with trading volumes declining after an initial spike in late 2023 despite the subsequent opening of the platform to international buyers in 2025, indicating that the market has yet to gain sustained momentum.³⁸

Singapore’s willingness to pay for high-integrity credits is significantly higher than IDXCarbon prices. Singapore’s carbon tax is set at S\$25 per tonne CO₂e in 2024–2025, rising to S\$45 in 2026–2027 and S\$50–80 by 2030. This effectively caps what tax-liable facilities are prepared to pay for eligible ICCs, which must be cheaper than the tax to be economically attractive.³⁹ However, at the moment, IDXCarbon units cannot yet be used to satisfy compliance obligations under Singapore’s carbon tax regime, which requires “eligible” Article 6-aligned credits meeting stringent environmental-integrity criteria.⁴⁰

B. Singapore's Carbon Tax and ICC Framework

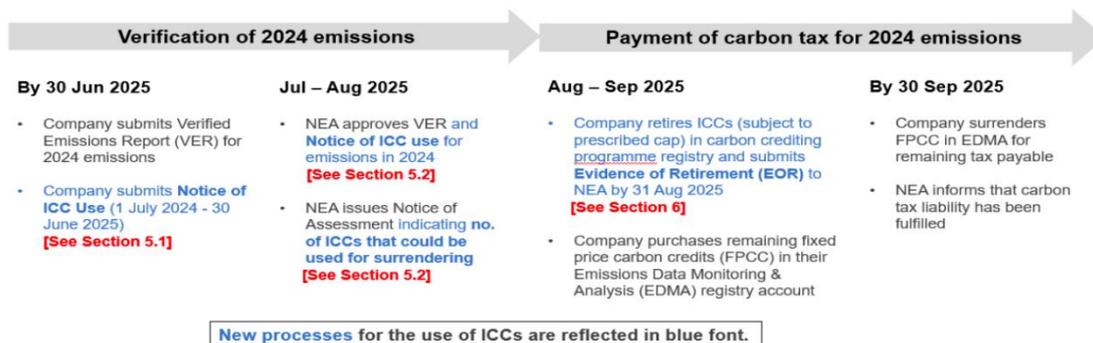
Singapore introduced a carbon tax in 2019, the first in Southeast Asia, as part of its Climate Action Plan.⁴¹ Initially set at S\$5 per tonne CO₂e (2019–2023), the tax was raised to S\$25/tCO₂e in 2024 and is scheduled to reach S\$45 by 2026-27 (with the long-term goal of S\$50–80/t by 2030).

Notably, Singapore’s carbon tax framework, outlined in the Carbon Pricing Act 2018 (“**CPA**”), allows companies to utilise eligible ICCs to offset a portion of their taxable emissions. From January 1, 2024, liable facilities may surrender eligible ICCs to cover up to 5% of their taxable emissions. An ICC is defined as a certificate representing one tonne of

greenhouse gas emissions reductions or removals measured in tCO₂e, generated from projects or programmes outside Singapore.⁴²

The eligibility criteria for ICCs are quite stringent and are prescribed in the Carbon Pricing (Carbon Tax and Carbon Credits Registry) (Amendment) Regulations 2023.⁴³ To comply with Article 6 of the Paris Agreement, the certified emissions reductions or removals must have occurred between January 1, 2021 and December 31, 2030. The ICCs must not be double-counted in contravention of the Paris Agreement, must be additional (exceeding any emissions reduction required by law), real (based on realistic and conservative estimates), quantified and verified by accredited independent third-party verification entities, and permanent (or have measures to address reversibility). Additionally, the projects must cause no net harm and avoid leakage, meaning they must not result in material increases in emissions elsewhere.

The process for using ICCs involves several key steps.



Source: NEA – International Carbon Credits Guidance

Companies must first source eligible ICCs from the published Eligibility List on the Carbon Markets Cooperation website, which outlines eligible host countries, CCPs, and methodologies. The approved CCPs include ACR (formerly American Carbon Registry), Architecture for REDD+ Transactions, Global Carbon Council, Gold Standard, and Verra.⁴⁴ Companies then submit a Notice of ICC Use to the National Environment Agency (“NEA”) via the Emissions Data Monitoring and Analysis System (“EDMA”) between July 1 of the emissions year and June 30 of the following year.⁴⁵ This submission must include the Letter of Positive Examination (“LOPE”), which is a document specifying the host country’s approval of ICC issuance after verification of GHG emissions reduction or removal, and can only be issued after authorization and application of corresponding adjustments by the host country.⁴⁶

After NEA accepts the Notice of ICC Use and issues a Notice of Assessment (“NOA”) indicating the quantity of ICCs that can be used, companies may procure the approved ICCs

on a CCP registry. The retirement of ICCs can only occur after receiving the NOA, and the amount retired must not exceed the prescribed 5% limit stipulated in the NOA. ICCs retired in excess of the prescribed 5% limit are not treated as surrendered for carbon tax purposes, and NEA will not provide any refund or compensation for excess retirements. When retiring ICCs on CCP registries, companies must clearly indicate specific information, including the name of the corporation in EDMA, the EDMA Registry Account Number, the NOA Reference ID, and the retirement reason details, stating that it is for the payment of carbon tax under Singapore's Carbon Pricing Act.⁴⁷

After retirement, the taxable facility must submit the Evidence of Retirement to NEA no later than August 31 of the year following the year of emissions via EDMA. The eligible ICC is deemed surrendered to NEA once NEA accepts the corresponding EOR. Finally, companies must view their remaining tax liability in EDMA and purchase and surrender the corresponding amount of Fixed-Price Carbon Credits to NEA by September 30 to fulfil their carbon tax obligations.⁴⁸ While companies may engage third-party service providers to source, procure, and retire ICCs on their behalf, the registered person of the taxable facility remains responsible for submitting all ICC-related documentation to NEA and will be held liable for any issues with the documents.

6. Market Outlook and Key Takeaways

In 2025, ASEAN's energy transition moved from diplomacy to practical implementation, with the APFG facility helping to de-risk transmission projects. Singapore has created a clear and predictable framework, such as a licensing framework, grid build-out by Singapore Energy Interconnections, and REC-based carbon accounting.

The June 2025 MOUs highlight strong Singapore–Indonesia cooperation, combining Singapore's demand for clean energy with Indonesia's renewable potential. Successful projects will pair electricity exports with local renewable manufacturing investments. If executed well, the partnership could secure low-carbon power for Singapore, boost Indonesia's renewable sector, and serve as a model for cross-border decarbonisation in Asia.

¹ J D Wilson, 'Regionalising resource security in the Asia-Pacific: the challenge of economic nationalism' (2014) 69 Australian Journal of International Affairs 13–15 <https://doi.org/10.1080/10357718.2014.978741>.

See also [3].

² World Bank Group, 'ASEAN Power Grid Financing (APGF) Initiative' (20 October 2025) <https://www.worldbank.org/en/region/eap/brief/asean-power-grid-financing-apgf-initiative>.

³ ASEAN Climate Change and Energy Project (ACCEPT), 'Towards net zero: Evaluating energy security in Singapore using system dynamics modelling' (March 2024) 1 <https://accept.aseanenergy.org/arnecc-research-data/towards-net-zero-evaluating-energy-security-in-singapore-using-system-dynamics-modelling/>.

⁴ Ministry of Energy and Mineral Resources of the Republic of Indonesia, 'Indonesia and Singapore Agree to Build Sustainable Industrial Zone' (Press Release No 056.Pers/KM.01.03/SJI/2025) <https://www.esdm.go.id/en/media-center/news-archives/indonesia-singapura-sepakat-bangun-kawasan-industri-berkelanjutan>.

⁵ Ministry of Trade and Industry (Singapore), 'Written reply to PQs on Monitoring of clean electricity imports from Indonesia and safeguards against price renegotiations and policy changes' (Parliamentary replies, 8 January 2025) <https://www.mti.gov.sg/newsroom/written-reply-to-pqs-on-monitoring-of-clean-electricity-imports-from-indonesia-and-safeguards-against-price-renegotiations-and-policy-changes>.

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