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Advancing Southeast Asia Carbon Market: Nature and Nurture

Backed by its abundant natural capital and rapid economic growth, Southeast Asia has the foundations to transform into a major carbon trading hub. However, more needs to be done to develop a successful market in the region and many risks exist. Collaborative efforts from governments, carbon market associations, regional coalitions and other stakeholders could make the difference between a thriving market maximizing a multibillion-dollar opportunity and a sluggish one where trading activities barely make a dent.

3

In-force carbon pricing mechanisms in Southeast Asia

1268MtCO2e

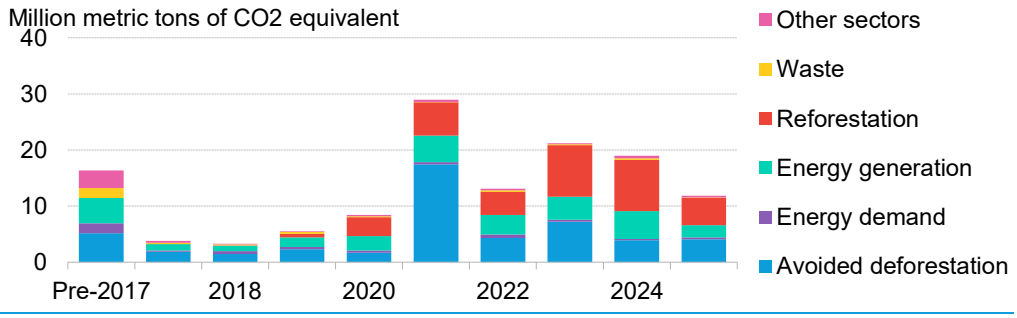
Collective nature-based abatement potential of nine Southeast Asian markets

35MtCO2e

Amount of retired carbon credits from AA-rated projects in Southeast Asia, as of June 3, 2025

- Southeast Asia carbon credits accounted for 9% of global supply in 2024. The region has the potential to contribute a greater share through tapping into its natural capital – with 1.27 billion metric tons of abatement potential in 2050 – and biochar resources in future. However, the region has been moving away from generating nature-based credits in recent years, with supply falling from 85% in 2021 to 19% in 2024.
- The region's shift away from nature supply is mismatched with the demand from large global corporations and governments, with the region making up 11% of global carbon credit demand in 2024. Domestic demand will not be a silver bullet: Indonesia's IDXCarbon has gone entire months without a single trade from international buyers, despite opening its doors to foreign participants since January 2025. Conversely, Thailand's Voluntary Emission Reduction program has averaged just 30,000 credits in monthly traded volume so far this year. International demand will be key for the Southeast Asian market.
- Coordination among Southeast Asian markets to align with internationally recognized standards – such as the Integrity Council for the Voluntary Carbon Market's Core Carbon Principles – is key to boosting international buyers' confidence in local carbon credits. Stronger credibility could drive up prices and offer the region's producers greater protection against carbon border tariffs.
- Southeast Asia is highly exposed to the European Union's Carbon Border Adjustment Mechanism (CBAM) as its third-largest trade partner, with an annual average trade of €167.6 billion ($195.6 billion). Higher carbon prices in regional markets are needed to manage rising EU carbon costs, which could reach €185 per metric ton in 2035, that would otherwise be indirectly borne by Southeast Asian exporters of covered products.

Figure 1: Annual retirements of voluntarily traded carbon credits from Southeast Asia, by project sectors



Source: BloombergNEF, Verra, Gold Standard, American Carbon Registry, Climate Action Reserve. Note: Data as of June 3, 2025. Other sectors include agriculture, blue carbon, carbon capture and storage, chemicals, direct air capture, fugitive emissions, livestock and farm management, manufacturing, metals, mining, transport and others.

1. The state of carbon markets in Southeast Asia

About this report

This report covers nine markets in Southeast Asia – Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Vietnam.[1] It addresses both regulated and voluntary carbon markets in the region, with a stronger focus on the latter. This report is also available on BNEF's Carbon Knowledge Hub.

Looking to establishing itself as a carbon trading hub, Southeast Asia began engaging in voluntary carbon trading as early as 2013 – each credit pertaining to 1 metric ton of carbon avoided or removed. Nine markets – Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam – are both suppliers and buyers of internationally traded carbon credits.

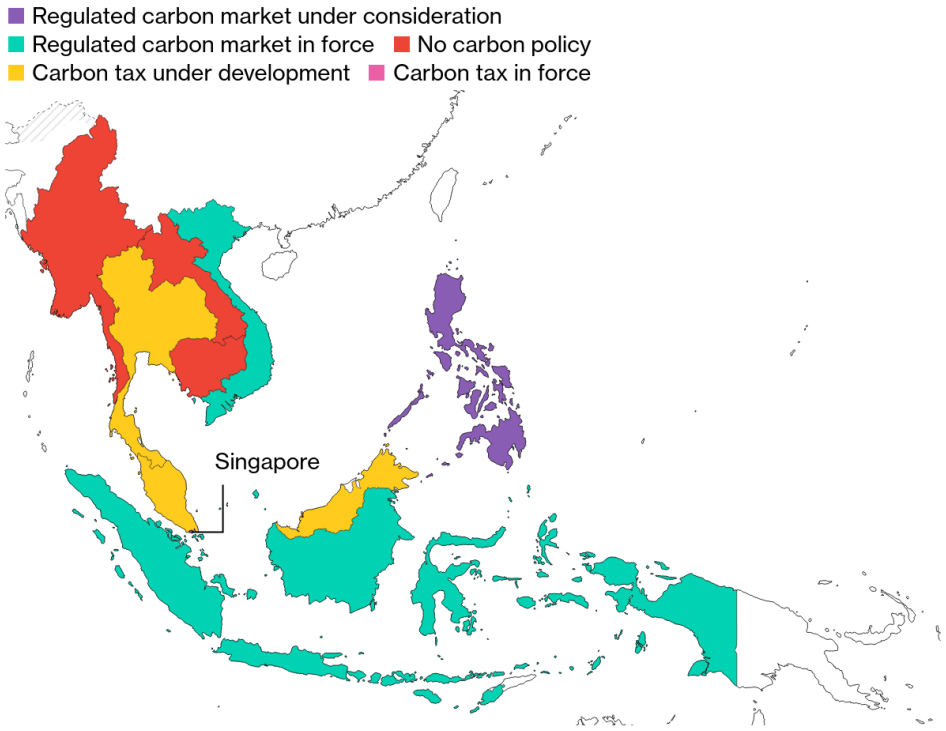
Some of these countries have also created national markets: Indonesia's regulated Economic Value of Carbon (Nilai Ekonomi Karbon) allows for the trading of allowances via its local carbon exchange, IDXCarbon, while Thailand's Voluntary Emission Reduction (T-VER) program allows for the trading of domestically generated carbon credits, typically among local buyers.

Indonesia, Singapore and Vietnam have carbon pricing mechanisms in force

Spurred by the impending introduction of carbon border tariffs and other decarbonization needs, a slew of carbon pricing mechanisms in the form of emissions trading systems and carbon taxes have also emerged across Southeast Asia. Indonesia and Vietnam have active emissions trading systems whereas Singapore introduced its carbon tax in 2019 (Figure 2). Malaysia, Thailand and Philippines are developing or considering adopting domestic carbon policies and could enact them in 2026 at the earliest.

[1] Brunei and Timor-Leste have been excluded as they do not have retirements or issuances based on data from the main registries, as of June 3, 2025.

Figure 2: Status of carbon policies in Southeast Asia



Source: BloombergNEF. Note: Data as of September 2025. Singapore has a carbon tax in force.

Carbon credit supply – measured using annual issuances as a proxy – from Southeast Asia has been inconsistent, resulting in unreliable contributions to the global pool of credits. The share of issuances from the region, relative to the rest of the world, peaked at 21% in 2018 but dropped to 9% in 2024 (Figure 3).

Despite the unstable supply, demand for Southeast Asia's carbon credits has grown during the same period. After the region's share of global retirements – a proxy for historical demand in carbon credit markets – slumped to 6% in 2018, it almost doubled in 2024 when it reached 11% (Figure 3).

Driven by its large nature-based carbon abatement potential, Southeast Asia is a sizable contributor of nature-related carbon credits. The region accounts for some 31% of reforestation credits issued globally, or 41.6 million metric tons of carbon dioxide equivalent (MtCO2e) (Figure 4), with Katingan Peatland Restoration and Conservation Project in Indonesia issuing 38.6MtCO2e through June 3, 2025. The region also contributed 17% and 9% to the global supply of avoided deforestation and blue carbon credits, with 85.6MtCO2e and 0.61MtCO2e, respectively (Figure 4).

Figure 3: Percentage of global carbon credit issuances and retirements from Southeast Asia, by year

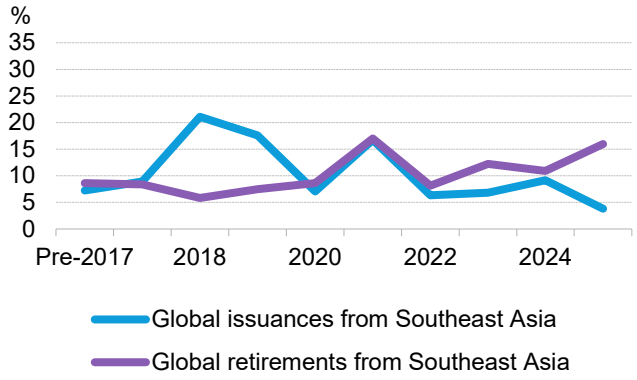
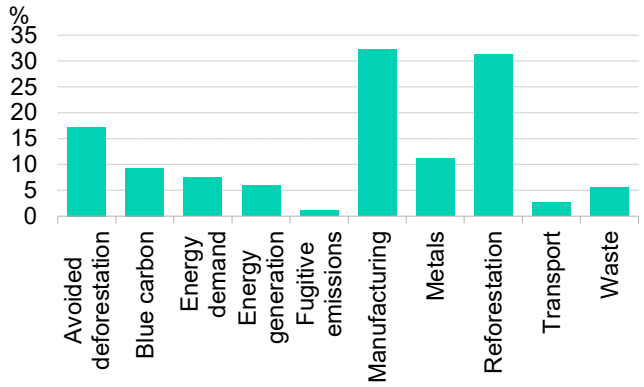


Figure 4: Percentage of global carbon credit issuances from Southeast Asia, by project sector



Source: BloombergNEF, Verra, Gold Standard, American Carbon Registry, Climate Action Reserve. Note: Data as of June 3, 2025.

2. Issues faced by carbon markets in Southeast Asia

Even with momentum in both voluntary and regulated markets, Southeast Asia still faces various challenges that will slow down efforts to expand carbon markets.

Low demand for domestic carbon credits

Despite efforts to boost liquidity in the market, demand for locally generated carbon credits remains sluggish. Indonesia's IDXCarbon opened its doors to international participants for the first time in January 2025. However, expanding the pool of potential buyers did not spur demand. Trades of carbon credits authorized for international trading quickly dropped to zero in March 2025, two months after the first trade of 49,815 credits was recorded. IDXCarbon also saw little activity among local buyers between April and June 2025, with June seeing just 8 tons of CO2 equivalent traded (Figure 5).

Similarly, traded volumes of T-VER credits – available only to local participants – have consistently remained below 0.1MtCO2e since January 2025 (Figure 6). Although the domestic carbon market has operated for more than a decade, beginning in 2013, it recorded just $360,000 cumulatively in trade value between January and June 2025, showing little growth over this time.

Figure 5: Monthly traded volume and value on IDXCarbon

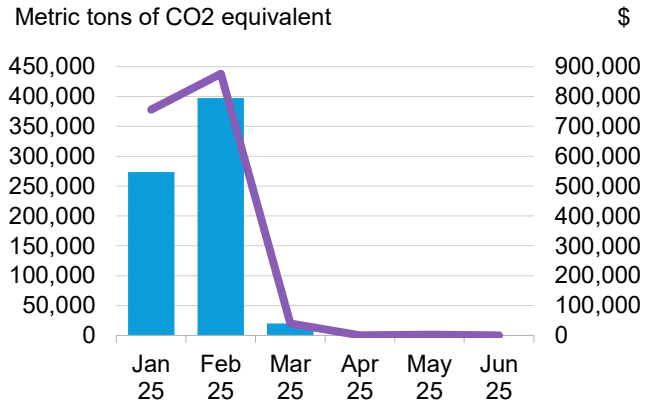
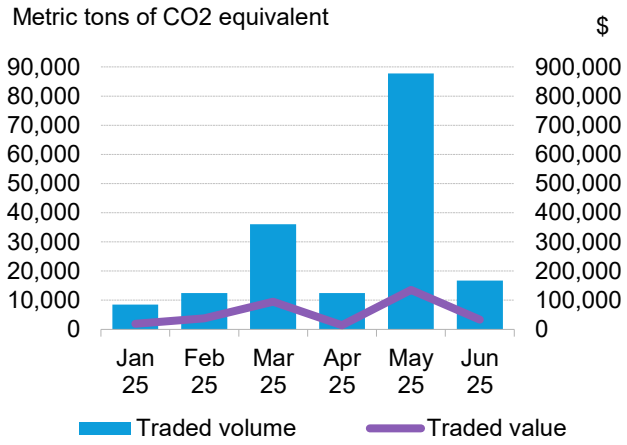


Figure 6: Monthly traded volume and value on T-VER



Source: BloobmergNEF, IDXCarbon, Thailand Greenhouse Gas Management Organization. Note: T-VER refers to the Thailand Voluntary Emission Reduction program.

With few carbon policies in place in the region and little incentive for decarbonization, demand signals for credits remain weak. Consequently, Southeast Asia's domestic carbon markets are characterized by perpetual oversupply and persistently low credit prices.

Mismatch in carbon credits supplied and sectors in demand

Southeast Asia's carbon credit supply does not reflect the shifting preferences of the maturing global market. Despite strong interest in Southeast Asia's nature-based carbon credits, particularly from international buyers, supply from the region has slowed and pivoted to new sectors.

For example, energy generation credits made up 34% of the region's supply mix in 2024, up from 12% in 2021 (Figure 7). However, as international standards increasingly emphasize credit quality and integrity, demand has shifted *away* from this sector elsewhere in the world.

The Integrity Council for the Voluntary Carbon Market (ICVCM) excluded Energy generation methodologies from eligibility from its high-integrity Core Carbon Principles (CCP) label. This has redirected buyer interest toward credits recognized in quasi-regulated programs, such as the Carbon Offsetting and Reduction Scheme for International Aviation (Corsia), including nature-based solutions. Buyers may also increasingly prioritize projects using methodologies already approved under CCP, such as those in fugitive emissions, waste and energy demand sectors – diverging from Southeast Asia's current supply trends.

Nature-based sectors – avoided deforestation and reforestation – together accounted for 19% of annual issuances from Southeast Asia in 2024, down from 85% in 2021. This contrasts sharply with demand – avoided deforestation and reforestation projects constituted an average of 61% of the region's annual retirements between 2017 and 2025 (Figure 8).

Figure 7: Annual issuance of voluntarily traded carbon credits in Southeast Asia, by project sector

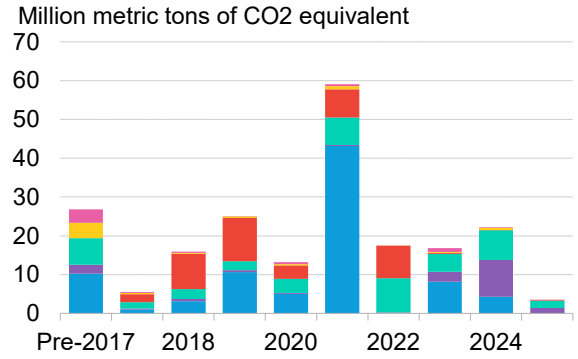
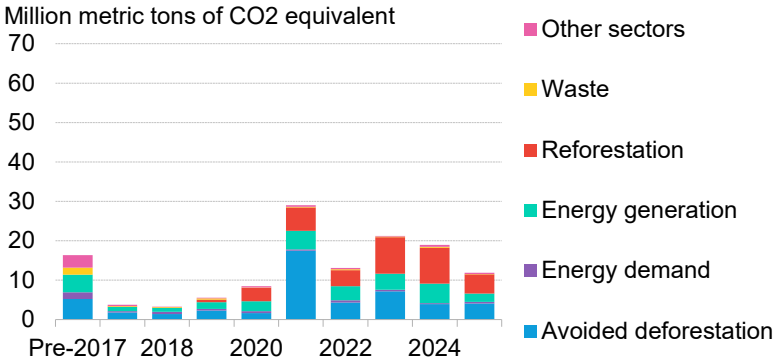


Figure 8: Annual retirement of voluntarily traded carbon credits in Southeast Asia, by project sector



Source: BloombergNEF, Verra, Gold Standard, American Carbon Registry, Climate Action Reserve. Note: Data as of June 3, 2025. Other sectors include agriculture, blue carbon, carbon capture and storage, chemicals, direct air capture, fugitive emissions, livestock and farm management, manufacturing, metals, mining, transport and others.

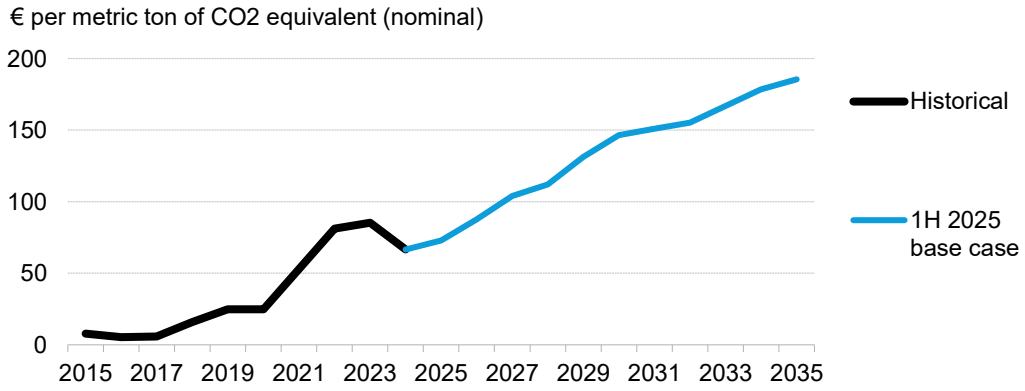
Despite its abundant natural capital (discussed further below) and strong buyer demand for its nature-based credits, the region has yet to leverage these strengths to expand its carbon credit revenue and solidify its role as a global supplier.

Rising carbon prices from carbon border tariffs

To address the risk of carbon leakage – which occurs when local companies move their operations to other markets with less stringent climate policies – and to ensure that domestically produced goods remain competitive, governments have turned to carbon border tariffs.

The EU's CBAM is arguably the most prominent example. The bloc's importers of cement, iron and steel, aluminum, fertilizers, electricity and hydrogen are required to procure and surrender CBAM certificates corresponding to the amount of emissions embedded in the production of their goods. If a carbon price has been paid during the production process, the equivalent could be deducted. These CBAM certificates will gradually begin correlating with the price of carbon in the EU's emissions trading system, with BNEF estimating it could reach €185 per ton in 2035 (Figure 9).

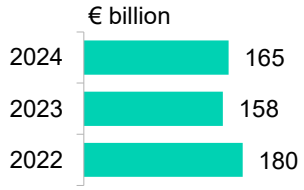
Figure 9: Historical and forecast EU emissions allowance price



Source: BloombergNEF, Intercontinental Exchange.

The Association of Southeast Asian Nations (ASEAN) recorded an average of €167.6 billion in exports to the EU annually between 2022 and 2024 (Figure 10). As the bloc's third-largest trading partner, Southeast Asia is particularly exposed to the carbon border tariff and these prices. Although the carbon price will be imposed on EU importers, goods from Southeast Asia could be indirectly affected as they might seem less favorable if they are more emissions intensive than other markets. This could reduce the competitiveness of the region's products, causing export revenues to fall.

Figure 10: Annual export from ASEAN to the EU

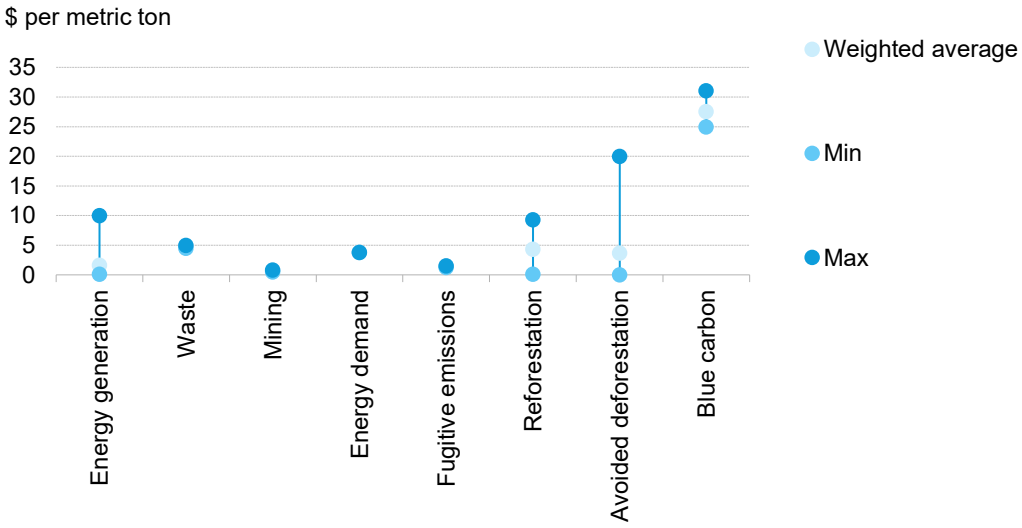


Source: BloombergNEF, Eurostat.

From Thailand's proposed carbon tax of 200 baht ($6.16) per ton on oil products to Singapore's highest possible carbon tax of S$80 ($62.03) per ton in 2030, the region's carbon prices are much lower than that of the EU ETS, which CBAM certificates will eventually mirror by 2035. Any deductions because of domestic carbon prices in the region paid during the production process of goods from Southeast Asia would be negligible when compared to the amount that EU importers must fork out for CBAM certificates.

Similarly, the spot prices of carbon credits traded on Xpansiv's CBL exchange in 2025 are consistently lower than the current and forecast carbon price of EU ETS. Blue carbon credits – the most expensive ones traded on the platform in 2025 – have an average weighted price of $27.59 per ton, which is 68% lower than BNEF's estimated average EU allowance price of $85.55 per ton in the same year (Figure 11).

Figure 11: Spot prices of carbon credits traded on Xpansiv's CBL platform in 2025, by project sector



Source: BloombergNEF, Xpansiv. Note: Data as of Sept. 30, 2025.

Heightened exposure to the EU's carbon border tariff, coupled with limited ways of reducing it due to low prices of both carbon policies and credits, could enhance the risks of added costs on Southeast Asian exports to the bloc.

3. Key recommendations for Southeast Asia

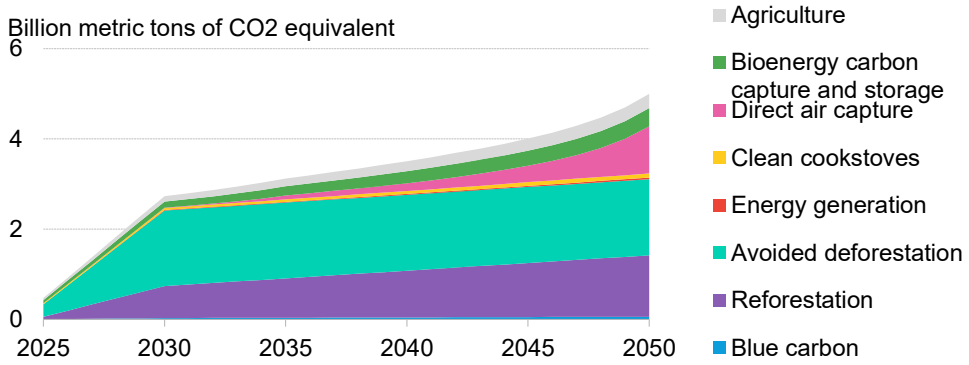
To maximize Southeast Asia's potential for a thriving carbon trading hub, several steps could be taken to capitalize on opportunities in the region and address gaps that could risk market slowdowns.

Tapping into Southeast Asia's nature-based carbon abatement potential

Southeast Asia's abundant natural capital could be a strategic advantage in strengthening its position as a key player in global carbon markets. Avoided deforestation and reforestation sectors are projected to lead carbon credit supply under the *High Quality* scenario in BNEF's *Long-Term Carbon Credit Supply Outlook 2025* – which describes a future carbon market prioritizing high integrity credits.

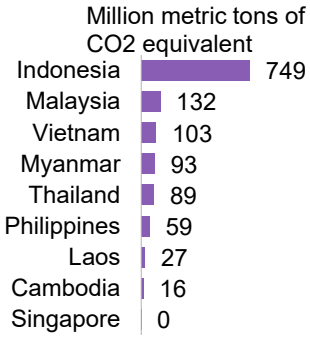
Under this scenario, which BNEF views as the mostly likely to occur, avoided deforestation carbon credits will constitute 61% of the total supply in 2030 – amounting to 1.6 billion metric tons of CO2 equivalent. Reforestation projects will contribute 656.5MtCO2e in 2030, equivalent to 26% of the high-quality supply (Figure 12). For more information, see *Long-Term Carbon Credit Supply Outlook 2025* (web | terminal). To access this report, please contact sales.bnef@bloomberg.net.

Figure 12: Forecast carbon credit supply under *High Quality* scenario, by project sector



Source: BloombergNEF, Naturebase.

Figure 13: Nature-based abatement potential, by market



Source: BloombergNEF, Naturebase.

With its rich biodiversity and extensive marine and land resources, Southeast Asia could capitalize on rising international demand by contributing its reforestation and avoided deforestation credits for international carbon trading and cement its role as a long-term supplier of carbon credits. Led by Indonesia (749.4MtCO2e), the nine Southeast Asian markets together have the potential to create 1,267.5 million carbon credits from its marine and land resources cumulatively by 2050 (Figure 13).

Except Singapore, every market in Southeast Asia has more nature-based carbon abatement potential than needed to achieve its Paris Agreement-aligned Nationally Determined Contribution, according to BNEF estimates. Stakeholders – such as carbon market associations and joint collaborators of the ASEAN Common Carbon Framework – could use engagement with regulators to discuss opening channels of financing and carbon trading to maximize international buyers' interest in Southeast Asia's nature-related credits.

Creating a consistent supply of high-quality carbon credits

Building a consistent pipeline of high-quality supply by maintaining social and environmental safeguards could cement the region's position as a global carbon credit supplier. Several projects in the region have already received high ratings from BeZero Carbon, a carbon ratings agency. These are mostly nature-related and have remained popular among buyers.

Some 34.85 million credits from the region's AA-rated projects – a blue carbon project in Myanmar (VCS-1764), Indonesia's Rimba Raya Biodiversity Reserve Project (VCS-674) and the Katingan Peatland Restoration and Conservation Project (VCS-1477) – were retired by large

corporations through June 2025 (Figure 14). These projects can serve as references for Southeast Asia to guide the development of future carbon credit supply, emphasizing attributes such as permanence and additionality.

Figure 14: BeZero carbon ratings of retired carbon credits, by project

Source: Bloomberg NEF, BeZero. Note: Data as of June 3, 2025.

Buyers are using the eligibility criteria of international regulated carbon markets – such as the Paris Agreement's Article 6 and Corsia – as well as ICVCM's CCPs, to benchmark the quality of available carbon credits. By aligning local carbon methodologies to internationally adopted standards, Southeast Asia could demonstrate how its carbon credits can qualify as high integrity to foreign buyers.

The region's governments and carbon market associations have acknowledged and begun addressing this misalignment. For example, the Indonesian government has signed several mutual recognition agreements with international carbon registries such as Gold Standard, Plan Vivo and the Global Carbon Council. Similar deals with Verra and Puro Earth have also recently been announced. Thailand's Premium T-VER program is also seeking to position the nation as one of the suppliers of Corsia-eligible credits during Phase I of the program, which runs from 2024 to 2026.

On a regional scale, the ASEAN Common Carbon Framework – a collaboration among carbon market associations and organizations in Southeast Asia – aims to facilitate the mutual recognition of different methodologies in the region by aligning them to widely accepted quality benchmarks.

Overall, steps taken to match up with global standards could improve the fungibility and interoperability of locally generated carbon credits, beyond their respective domestic markets. Consequently, this builds buyers' confidence in Southeast Asian credits and could drive up prices, helping industries remain competitive in the shadow of CBAM.

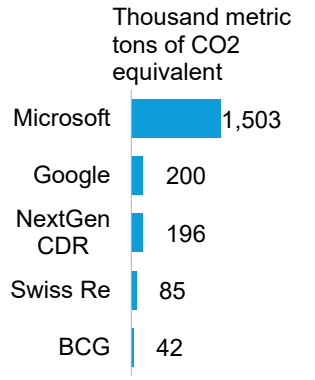
Creating innovative supply of carbon removals

With only 50 carbon removal projects listed on the largest carbon credit registries, compared to 443 avoidance projects, Southeast Asia's credit portfolio is not optimized for companies looking to comply with groups like the Science Based Targets initiative. Carbon removal credits – generated from projects that sequester carbon from the atmosphere – are favored by some buyers due to their ability to address historical emissions and exemplify better permanence characteristics. The

region could expand its supply of carbon removal credits to cater to the growing market. Specifically, in addition to its established reforestation sector, Southeast Asia could be a nascent market for biochar credits.

Biochar – produced using a thermal process called pyrolysis – could prevent biomass from decaying and store its carbon for more than 100 years. With three biochar methodologies receiving ICVCM's high-quality CCP label, buyer confidence in the sector is likely to grow and bolster demand. As of the end of August 2025, top buyers had collectively purchased about 2 million biochar credits (Figure 15). Microsoft, a first mover and leader in carbon removal credits purchased through offtake agreements, is set to receive some 1.24MtCO2e over a 10-year period from Exomad Green – one of the largest biochar carbon credit producers.

Figure 15: Top purchasers of biochar carbon removal credits



Source: BloombergNEF, CDR.fyi. Note: Data as of Aug. 18, 2025. NextGen CDR is a collective of six buyers.

The sector could generate large amounts of carbon credit revenue for Southeast Asia. Selling at $112 to $300 per ton, biochar credits command a much higher price than reforestation credits, which trade at an average of $20 per ton. All markets – except Laos, Myanmar and Singapore – already have existing biochar projects, making them poised to offer more supply. For more information, see *Biochar Credits Land High-Quality Seal in a Tainted Market* (web | terminal). To access this report, please contact sales.bnef@bloomberg.net.

Accelerating domestic demand through adoption of carbon pricing mechanisms

In addition to making its carbon credits more attractive to foreign buyers, Southeast Asia could stimulate domestic demand to complement trading activity on the international market. This could be achieved through accelerating the adoption of carbon pricing mechanisms in the region. With only three in-force carbon policies in Southeast Asia, local companies are under little regulatory pressure to decarbonize or procure credits (Figure 2). Currently, participants of Singapore's carbon tax and Vietnam's pilot emissions trading system are permitted to use eligible credits to offset up to 5% of their emissions and 30% of their allocated allowances, respectively.

The implementation of such carbon pricing mechanisms, while allowing mandated entities to use credits to fulfill part of their compliance obligations, could increase the need for domestic offsetting. This introduces a consistent demand channel for both domestic and overseas carbon credits from mandated participants, injecting more liquidity into local markets.

4. Moving forward

Like a sleeping giant, Southeast Asia has yet to maximize its potential as a global carbon trading hub. While the region is rich in natural resources, stakeholders – including carbon market associations, governments and other coalitions such as the ASEAN Common Carbon Framework Steering Committee – need to foster the right conditions for the market to prosper.

This means establishing a reliable supply of high-quality carbon credits and delivering strong demand signals, both regionally and internationally, to move the market. Domestic buyers alone will not provide sufficient scale given the region's small market size. However, the growing commitment among policymakers and market participants offers optimism that the region can build vibrant carbon markets and successfully capitalize on this multibillion-dollar opportunity.

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