

2. Singapore's Leadership in Sustainable Finance: Progress, Drivers and Regional Initiatives¹

This selected issue paper explores Singapore's progress in becoming one of Asia's sustainable finance hubs, the key drivers of climate and transition finance within its ecosystem, and its role in catalyzing the green transition across ASEAN+3's developing economies.

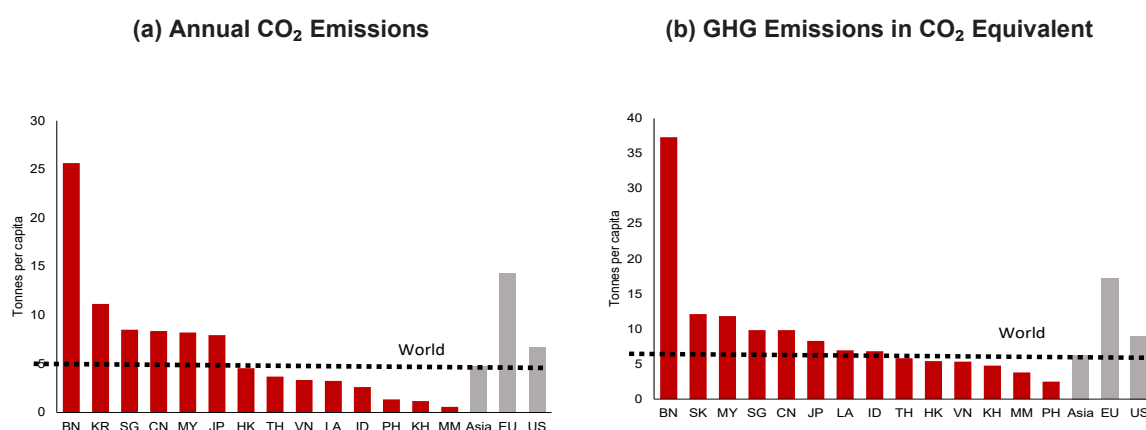
Introduction

1. In the wake of growing environmental challenges, sustainable finance has become a pivotal tool in addressing climate change. Finance plays a critical role in facilitating the global transition to a low-carbon economy. Singapore has emerged as a front-runner in Asia's sustainable finance landscape, leveraging its strategic location, robust financial infrastructure and forward-looking policy frameworks. As climate change intensifies and global economies pivot toward net-zero goals, Singapore has positioned itself not only as a resilient financial center but also as a catalyst for green transformation across the ASEAN+3 region.

2. Compared with its neighboring ASEAN economies, Singapore is less vulnerable to the physical risks of climate change. Whereas developing ASEAN countries such as the Philippines, Indonesia, Myanmar, and Vietnam ranked 1st, 2nd, 6th and 16th, respectively, on the World Risk Index Global Rankings in 2024, Singapore ranked 186th with a score of less than 1. The economy's score on vulnerability to natural disasters is close to zero as it has not experienced any type of natural disaster since 2000, according to the [Emergency Events Database](#) (EM-DAT).

3. In terms of annual per capita household carbon dioxide (CO₂) emissions and greenhouse gas (GHG) emissions, however, Singapore is among the top six carbon emitters in ASEAN+3. Per capita emissions in Singapore exceed the world average, based on [OurWorldinData](#) (Figure A2.1). Authorities have therefore taken a whole-of-nation approach to the regulations, policies and initiatives necessary to achieve Singapore's Nationally Determined Contributions (NDC) and move the economy toward net-zero emissions by 2050.

Figure A2.1. Annual per Capita CO₂ and Greenhouse Gas Emissions, 2023



Source: Global Carbon Budget (2023); population based on various sources (2023) via OurWorldinData; Chart updated from AMRO 2025A and AMRO 2025B.

Note: BN = Brunei, CN = China, HK = Hong Kong, ID = Indonesia, JP = Japan, KH = Cambodia, KR = Korea, LA = Lao PDR, MM = Myanmar, MY = Malaysia, PH = Philippines, SG = Singapore, TH = Thailand and VN = Vietnam.

¹ Prepared by Laura Britt Fermo (Deputy Group Head-MFR/Senior Economist)

Singapore's Progress in Climate Policy Ambitions

4. Singapore has made great strides in its climate goals and is well placed as the region's sustainable finance hub. The country exceeded its 2020 target by reducing emissions to 32 percent below business-as-usual (BAU) levels, leading the pack among ASEAN economies. It has also expanded solar energy deployment and invested in low-carbon technologies, such as hydrogen and carbon capture. Singapore is thus taking the leading role in regional climate governance and collaboration.

5. Singapore has articulated a clear and ambitious pathway toward achieving net-zero emissions, a “whole-of-nation” approach marked by a series of progressive milestones. Singapore aims to reduce its GHG emissions to about 60 million tonnes of CO₂ equivalent by 2030, and further to 45 million to 50 million tonnes by 2035, finally attaining net-zero emissions by 2050. Singapore's net-zero journey is a collective endeavor, requiring the active participation of all sectors of society and a comprehensive suite of strategies that span urban development, industry transformation, cross-border collaboration and technological innovation.

6. Central to Singapore's approach is the creation of a low-carbon city and the promotion of sustainable living. The government has set a target to deploy at least 2 gigawatt-peak of solar energy by 2030. Efforts to develop green land transport and buildings are ongoing, complemented by initiatives that encourage sustainable consumption patterns and low-carbon lifestyles among residents, and catalyze industry and business transformation through sector-specific green transition road maps. These efforts are underpinned by robust regulatory frameworks, including energy efficiency standards, regular reviews and green procurement policies.

7. Singapore's journey toward sustainability is anchored in a multilayered strategy that integrates national advocacy, financial-sector transformation and regional collaboration. The [Singapore Green Plan 2030](#)² charts ambitious and concrete targets over the next 10 years, strengthening Singapore's commitments under the UN's 2030 Sustainable Development Agenda and the Paris Agreement, and positioning itself to achieve its long-term net-zero emissions aspiration by 2050. The plan outlines five key pillars—City in Nature, Sustainable Living, Green Economy, Energy Reset and Resilient Future—supported by enablers such as its Green Government and Green Citizenry projects. The government has set specific targets under each pillar, including planting one million more trees, quadrupling solar energy deployment by 2025, reducing the waste sent to landfills by 30 percent by 2030, making at least 20 percent of schools carbon neutral by 2030, and requiring all newly registered cars to be cleaner-energy models by 2030. Recognizing the importance of regional cooperation, Singapore is actively pursuing cross-border solutions as well.

8. Transition planning guidelines were also introduced by the Monetary Authority of Singapore (MAS) in October 2023 which, in turn, help financial institutions in the country navigate the global climate transition. The Consultation Paper on [Guidelines on Transition Planning](#) (MAS 2023B) outlines strategies for aligning business models with specific climate outcomes. Additionally, the MAS promotes green and transition financing solutions, such as the use of green and sustainability-linked bonds and loans. Singapore is ASEAN's largest market for green, social, sustainability and sustainability-linked (GSSSL) bonds and loans, accounting for more than half of the market. The central bank supports global and Asian corporates to access sustainable financing for green and transition projects through its [Sustainable Bond Grant Scheme](#) and [Sustainable Loan Grant Scheme](#).

² The Green Plan is a multi-agency effort coined as “A Whole-of-Nation Sustainability Movement”. It is spearheaded by five ministries: The Ministry of Education, Ministry of National Development, Ministry of Sustainability and the Environment, Ministry of Trade and Industry, and the Ministry of Transport.

9. Singapore's total sustainable bonds have taken off in 2021, slowed in 2022 and 2023, but rebounded in 2024 despite the recent realignment of environmental, social and governance (ESG) priorities in the U.S. and other major economies. Green bonds remain as the type of sustainable bond with the highest issuance, making up 90.2 percent of total climate-related bond issuances in 2024. Singapore's GSSSL bond issuance volumes recovered significantly in 2024, in line with more bond issuances globally, due to a more benign interest rate environment. In the same year, GSSSL loans originating from Singapore hit an annual high with more than SGD48 billion loans issued ([MAS](#)).

Factors Scaling Up Climate and Transition Finance

I. Policy and Regulatory Proactiveness and Innovation

10. Singapore's success in climate finance is underpinned by its proactive regulatory environment. The [Singapore-Asia Taxonomy](#) (MAS 2023) introduced a traffic light system—green, amber and red—to classify economic activities based on their alignment with net-zero goals. Amber activities, which are not yet aligned but are in the transition process, are subject to sunset dates to ensure they converge with green standards over time. The system ensures that financial flows are directed toward activities that support net-zero outcomes. The taxonomy is designed to be interoperable with global taxonomies, facilitating cross-border financing and helping financial institutions manage reputational risks.

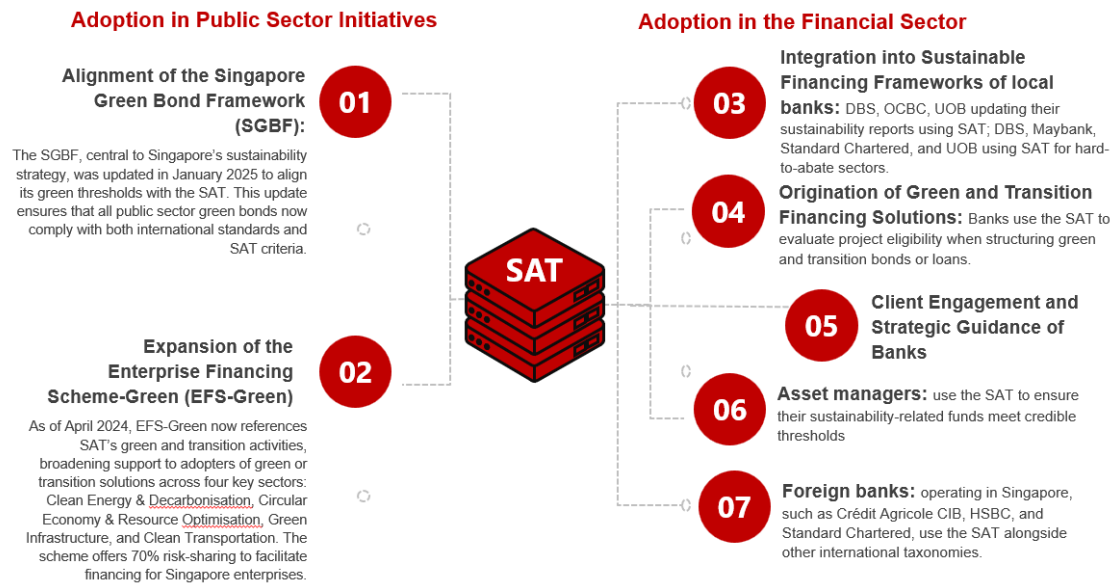
11. The adoption of the Singapore-Asia Taxonomy (SAT) has been successfully integrated into broader financing frameworks. The SAT has become a foundational reference for sustainable finance in Singapore, guiding public-sector frameworks, expanding enterprise financing and shaping the financial sector's approach to green and transition finance. The taxonomy's adoption by both local and foreign stakeholders underscores its role in advancing Singapore's net-zero ambitions and ensuring the credibility of sustainable finance activities ([MAS 2025](#), Figure A2.1.1). An internal assessment framework for the SAT is needed given that the ASEAN Taxonomy was aligned with SAT, and several economies have used both taxonomies as basis in developing their own national taxonomies. There is also a need for further enhancement of the ASEAN taxonomy to cover other sectors, such as the blue economy, which is a critical sector in the region (UNEPFI, 2025).³

12. Strong regulations are crucial in maintaining the momentum of sustainable finance. The number of climate laws and regulations have continually increased over time in both Singapore and ASEAN+3 ex-Singapore, based on the Climate Change Laws of the World database. In addition, jurisdictions across the world, such as Australia, China, the EU, Hong Kong, Japan and Singapore, have introduced or are planning to introduce sustainability-related disclosure, and seven out of the 22 who have mandated disclosure are from ASEAN+3, including Singapore.⁴

³ According to the International Union for Conservation of Nature ([IUCN](#)), Asia exhibits the highest rate of economic expansion globally. With over 25% of the world's population—approximately 6.676 billion people residing in Southeast Asia—the region faces intense anthropogenic pressure on its marine and coastal ecosystems. This dynamic renders the economies of these nations, many of which are heavily reliant on ocean-based revenues, particularly vulnerable to environmental degradation and economic volatility. Among the ASEAN countries, only the Philippine national taxonomy has incorporated coastal and marine resources as a priority sector in its decarbonization strategy ([UNEPFI, 2025](#)).

⁴ ESG Global: Mandatory Climate Reporting to Aid Risk Analysis, Moody's Ratings, TCFD Status Report 2023 and ECOFACT Policy Outlook.

Figure A2.1.1. Application of Singapore-Asia Taxonomy (SAT)



Source: Application of the Singapore-Asia Taxonomy in the Financial and Corporate Sectors, MAS (March 2025); AMRO staff compilation

II. Role of Carbon Pricing and Carbon Markets

13. Singapore supports ASEAN+3's adoption of carbon pricing instruments, as it believes that a price on carbon is a cost-effective mitigation option which enables the region's climate ambition. The carbon market associations of Indonesia, Malaysia, Singapore and Thailand announced a memorandum of collaboration regarding the development of the ASEAN Common Carbon Framework at the UN's 29th Conference of the Parties (COP29) in 2024. The framework aims to foster greater interoperability among ASEAN members' carbon markets by aligning claims guidance and methodologies for crediting. Singapore recognizes, however, that regional economies face diverse and unique national circumstances and are at different stages of developing and implementing carbon pricing policies.

14. The MAS is also actively involved in developing transition credits, particularly through the [Transition Credits Coalition](#) (MAS 2024), which seeks to accelerate the phaseout of coal plants in the region. MAS convened and launched the Transition Credits Coalition (TRACTION)⁵ during the 28th Conference of the Parties (COP28) in 2022. This initiative reflects a broader effort to scale up carbon markets and provide a complementary financing tool for the energy transition. The MAS launched the final TRACTION report at COP30 in 2024, which now serves as a playbook to expand the implementation of transition credits.

15. There is, however, a need to explore methodologies to establish additionality⁶ and credibility for TRACTION's transition carbon credits. Concerns have been raised about

⁵ Transition credits come from closing coal plants earlier so that less planet-warming gases are released into the atmosphere. Each credit represents one tonne of planet-warming emissions that is prevented from being released. Governments and companies can buy these credits to shrink their carbon footprint to meet their net-zero emission claims. For example, an agreement was signed on Aug 16, 2024, by Temasek-owned investment platform GenZero, infrastructure company Keppel, and Acen, the energy unit of Philippine conglomerate Ayala Corporation, to study the development of a first-of-its-kind transition credit project in the Philippines. The project involves decommissioning a coal-fired power plant in Batangas City, South Luzon by 2030—ten years earlier than originally planned—and replacing it with a solar energy facility paired with a battery storage system.

⁶ Additionality is a foundational criterion in both voluntary and compliance carbon markets, used to assess whether a climate mitigation project results in greenhouse gas (GHG) reductions or removals that would not have occurred in the absence of the financial incentive provided by carbon credits. It ensures that the credited impact is truly incremental and not part of a "business-as-usual" scenario. Additionality is essential for maintaining the environmental integrity of carbon markets, as it prevents the issuance of credits for actions that would have occurred regardless of market incentives. Without credible

the criteria for retiring power plants earlier than the maintenance period. The challenges and benefits of nature-based carbon credits and the additionality concept bring out the importance of setting baselines in both regulated and deregulated markets to ensure credible additionality.

III. Data, Definitions and Disclosures

16. Transparency is a cornerstone of Singapore's climate finance strategy. Under its Finance for Net Zero (FiNZ)⁷ Action Plan, the MAS emphasizes “3Ds”—Data, Definitions and Disclosures—to prevent greenwashing and improve market confidence. The rationale is that reliable climate data, credible taxonomies and mandatory disclosures enable financial institutions and investors to assess risks accurately and make informed decisions. The achievement of the 3Ds is important because financial institutions are hesitant to fund sustainability-related projects and transition activities, mainly on account of uncertainty on the level of risk and inability to determine how to price in this risk.

17. A policy innovation that has the potential to strengthen transparency, reduce the uncertainty in climate projects and, hence, encourage and scale up transition financing is *Greenprint*,⁸ a green data solution launched to help both small and medium-sized enterprises (SMEs) and corporates with sustainability reporting. Project Greenprint is a suite of green financial technology initiatives designed to leverage fintech in building a data-centric ecosystem that advances the financial sector's sustainability goals. The project is anchored in the development of two main pillars: digital utilities and a dynamic ESG fintech ecosystem. It pursues three core objectives: (i) fostering a vibrant ecosystem, by nurturing the growth of green fintech in Singapore and scaling these solutions internationally; (ii) enabling strategic partnerships, by connecting financial institutions, investors, green technology providers, ESG service providers and corporates; and (iii) establishing trusted data flows, by creating digital infrastructure that ensures the consistent, transparent and reliable exchange of ESG data, with integration into global and sector-specific data platforms.⁹

18. An ESG Impact Hub¹⁰ was launched in 2022 to encourage co-location and collaboration among ESG fintech start-ups, solution providers and financial institutions. The hub serves as a dedicated space to bring these groups together, fostering interaction and innovation to support the development of a robust and vibrant ESG ecosystem in Singapore, powered by technology and data.

19. The MAS also launched *Gprnt*¹¹ in November 2023, an integrated digital platform that harnesses technology to simplify how the financial sector and real economy collect, access and act upon ESG data to support their sustainability initiatives. Gprnt is the culmination of Project Greenprint and offers an enhanced digital reporting solution for both large businesses and SMEs to seamlessly report their ESG information. It was progressively rolled out beginning Q1 2024. Once fully deployed, Gprnt's reporting platform¹² is anticipated to streamline ESG reporting for companies through automation while enabling end-users—including financial institutions, regulators and large corporates—to access pertinent data and timely insights that inform sustainability-related decisions.

additionality, carbon credits risk becoming a form of greenwashing rather than a legitimate climate solution (Sources: [Climate Sustainability Directory](#); [Forlance.com](#) and [The Integrity Council](#))

⁷ <https://www.mas.gov.sg/news/media-releases/2023/mas-launches-finance-for-net-zero-action-plan>

⁸ https://www.mas.gov.sg/-/media/MAS/News/Media-Releases/2021/Infographic_MAS-Project-Greenprint.pdf

⁹ <https://www.mas.gov.sg/development/fintech/green-fintech>

¹⁰ <https://www.mas.gov.sg/news/media-releases/2022/mas-launches-esg-impact-hub-to-spur-growth-of-esg-ecosystem>

¹¹ <https://www.mas.gov.sg/news/media-releases/2023/mas-launches-digital-platform-for-seamless-esg-data-collection-and-access#2>

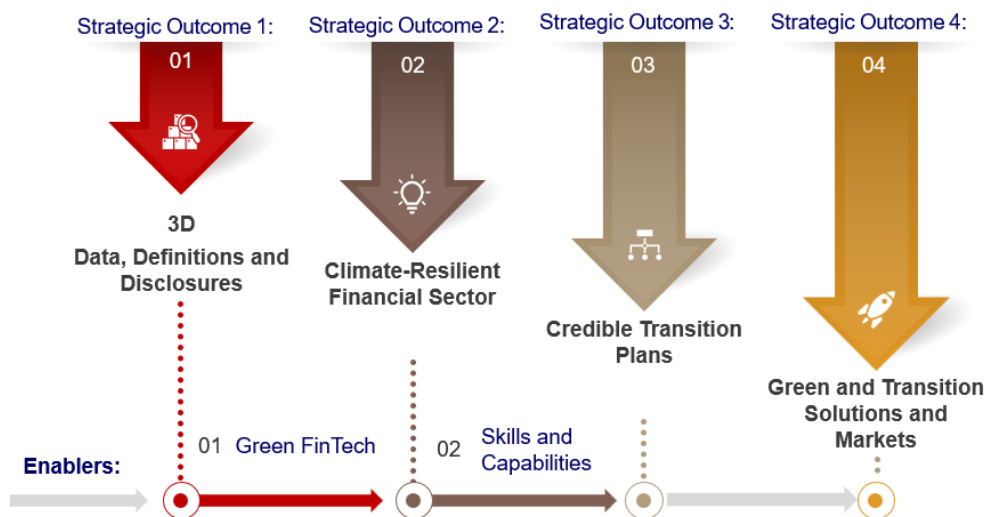
¹² <https://www.gprnt.ai/>

IV. Financial Instruments and Platforms

20. Singapore has pioneered several financial instruments to support the green transition. These instruments include green and sustainability-linked bonds and loans, blended finance models that combine public, private and philanthropic capital, and transition credits, a novel tool to accelerate the retirement of coal-fired power plants.

21. At the financial-sector level, the MAS launched the Finance for Net Zero (FiNZ) Action Plan on April 20, 2023.¹³ The FiNZ action plan aims to build a climate-resilient financial system, develop credible transition plans, mobilize green and transition financing and enhance data transparency. One of its key outcomes is fostering a climate-resilient financial sector, which involves deepening capabilities in climate scenario analysis and risk management. The FiNZ Action Plan is an expansion of the earlier Green Finance Action Plan ([GFAP](#)), launched in 2019, that encompasses new policies on transition finance. It presents a strategic framework to accelerate the transition to a net-zero economy by integrating finance, technology and talent development.

Figure A2.4.1. MAS Finance for Net Zero (FiNZ) Action Plan



Source: MAS, [Finance for Net Zero \(FiNZ\) Action Plan](#) and AMRO staff illustration.

22. To mobilize capital effectively, the FiNZ Action Plan encourages the use of blended finance models involving public, private and philanthropic partnerships, alongside innovative green and transition financing instruments such as bonds and loans. FiNZ supports blended finance projects that help decarbonize carbon-intensive sectors, particularly in Southeast Asia, where green infrastructure remains underfunded. It also aids the development of carbon markets and platforms to facilitate sustainable investment flows. Enabling these efforts are digital solutions such as Project **Greenprint**, which provides infrastructure for accessing verifiable sustainability data, and initiatives to build a transition-ready workforce through targeted skill development and research.

23. The potential for de-risking tools, such as currency hedging and insurance, also plays a critical role in advancing transition finance, particularly in mobilizing private capital for sustainability-linked projects. These instruments help mitigate financial risks—such as exchange rate volatility, political instability and project-specific uncertainties—that often deter banks and investors from committing to long-term transition initiatives. Tools such as hedging strategies and credit guarantees can provide the confidence needed for banks to scale up lending for transition-related projects, especially in emerging markets where risk perceptions are higher. The World Bank notes that de-risking practices, if not carefully

¹³ <https://www.mas.gov.sg/news/media-releases/2023/mas-launches-finance-for-net-zero-action-plan>

managed, can inadvertently exclude smaller financial institutions and remittance companies from the global financial system, undermining financial inclusion and transparency.¹⁴ Therefore, a balanced approach is needed, one that promotes risk mitigation while maintaining access to regulated financial services. The World Economic Forum's Playbook of Solutions outlines a range of de-risking tools, including policy instruments, blended finance mechanisms and insurance products, all designed to improve the risk-return profile of sustainable investments and catalyze capital flows at scale.¹⁵

24. Multilateral development banks have been instrumental in deploying partial credit guarantees to support renewable energy investments. The Asian Development Bank (ADB) and the International Finance Corporation (IFC) have used such instruments to reduce credit risk and attract private capital into utility-scale solar projects. However, uptake has been limited mostly to the renewable energy sector due to high costs, complexity and a lack of awareness, highlighting the need for more flexible and accessible de-risking solutions.

Singapore's Role in ASEAN Green Transition via Regional Initiatives

25. Sustainable financing needs in ASEAN are projected to expand at a compound annual growth rate (CAGR) of 9 percent, with total demand expected to reach between SGD4 trillion and SGD5 trillion by 2032. ASEAN has a pressing need for financing transition activities, given the region's rapid urbanization and economic growth. Funding for these transition projects is forecasted to grow faster than for green projects, at 13 percent CAGR compared with 7 percent CAGR, respectively. This trend is especially pronounced in the energy sector, where reliance on fossil fuels persists, and in hard-to-abate industries such as transport and manufacturing. As set out in the MAS' FINZ Action Plan, Singapore's financial service sector is in a good position to capture significant opportunities as the net-zero transition agenda expands in the region ([MAS 2025](#)).

26. The Financing Asia's Transition Partnership (FAST-P)¹⁶ is a Singapore-led blended finance initiative in collaboration with key global public, private and philanthropic partners. FAST-P¹⁷ aims to mobilize up to USD5 billion to de-risk and fund transition and marginally bankable green projects in Asia. This combined pool of concessional capital will be used to attract commercial capital and other sources of finance to support Asia's green energy transition. The partnerships reflect the MAS' commitment to catalyzing scalable, innovative financing structures that support credible decarbonization pathways and align with global best practice. They also underscore the growing role of public-private-philanthropic collaboration in addressing Asia's significant energy transition financing gap.

27. As a member of the ASEAN Taxonomy Board ([ASEAN 2024](#)), Singapore also helped align regional taxonomies with global standards, promoting consistency and scalability. Singapore's influence extends beyond its borders through regional partnerships and capacity-building initiatives. The country also plays a key role in knowledge transfer and technical assistance. By piloting transition credits in the Philippines and supporting the decarbonization of hard-to-abate sectors such as steel and cement, Singapore is helping ASEAN economies leapfrog toward sustainable development.

Conclusion: Challenges and Opportunities

28. Despite its progress, Singapore faces challenges such as regulatory uncertainty due to global political shifts and the need to balance energy security with decarbonization. ESG and sustainability priorities have undergone some near-term realignment globally, introducing uncertainties in the global pathway to a net-zero future. The rise of power-intensive technologies such as AI also poses new sustainability risks. However, opportunities abound. Climate remains a long-term structural driver of change, with sustained momentum in climate action. Singapore can scale its transition finance tools across ASEAN,

¹⁴ <https://www.worldbank.org/en/topic/financialsector/brief/de-risking-in-the-financial-sector>

¹⁵ <https://initiatives.weforum.org/playbook-of-solutions/de-risking-tools>

¹⁶ <https://www.nccs.gov.sg/media/speeches/speech-by-senior-minister-teo-chee-hean-at-cop28-singapore-pavilion-3dec2023/>

¹⁷ <https://www.mas.gov.sg/publications/sustainability...ibrant-sustainable-finance-ecosystem/strategy>

raise interoperability with global taxonomies and attract international capital by leveraging its reputation as a trusted and innovative international financial center.

29. Long-term challenges also arise from Singapore's limited land area, lack of natural renewable energy sources and reliance on future renewable energy imports. Nevertheless, Singapore is leveraging international cooperation and taking the lead in the development and implementation of the ASEAN Power Grid¹⁸ and the framework for regional carbon markets to access cleaner energy and mitigation opportunities.

30. Singapore's role in shaping sustainable finance frameworks and developing innovative data platforms and financial instruments underscore the critical role that financial-sector development and regional cooperation play in addressing climate change. Through initiatives like the FiNZ Action Plan, transition credits under TRACTION, the ASEAN Common Carbon Framework, the Singapore-Asia and ASEAN taxonomies, and data innovations such as *GPRNT* and the ESG Impact Hub, Singapore is leading the way in promoting sustainable investments and driving transition and sustainable finance in the ASEAN+3 region. By integrating science-based approaches, fostering transparency and facilitating international cooperation, Singapore is setting a strong example of how finance, through government and central bank support, can catalyze climate action across ASEAN+3 and beyond.

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¹⁸ A key milestone of the ASEAN Power Grid is the Laos-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), which was initiated in 2022. This pathfinder initiative originally enabled the cross-border exchange of up to 100MW of electricity. In August 2025, the project progressed to its second phase, with its trading capacity expanded to 200MW. This development was facilitated by multidirectional power trading arrangements, allowing both Malaysia and Lao PDR to contribute electricity supply to the system (Source: ASEAN Power Grid Summit 2018; MTI).

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