



Accelerating Green Growth: ASEAN Progress in Energy Investments and Decarbonisation

ASEAN Climate and Energy Insight Q3/2024 by ACCEPT II

Kleovan Nathanael Gunawan
Annisa Amelia Rosa
Muhammad Ilham Rizaldi
Aldilla Noor Rakhiemah
Indira Pradnyaswari
Beni Suryadi



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Layouted by
Bayu P. Effendy
Fadhil Handira Ishaq

As we are nearing the end of 2024, ASEAN continues to make progress in transforming its energy landscape, driven by the pressing needs to combat climate change and secure a sustainable future. The countries within the region are aligning their energy policies with global decarbonisation efforts, especially with the [UN Climate Change Conference \(COP 29\)](#), scheduled for November. This summit presents an opportunity for nations to enhance their climate commitments by setting more ambitious targets and advancing decarbonisation policies. It will also serve as a platform to strengthen international cooperation, reflecting the growing momentum towards sustainable development and global climate action. Recently, the ASEAN Centre for Energy (ACE) published [the 8th ASEAN Energy Outlook](#) which provides a comprehensive analysis of the current state and projection of ASEAN's energy landscape, and highlights its progress towards achieving carbon neutrality.

In our Climate Insight of Q2/2024, we discussed Southeast Asia's progress towards sustainable energy development and decarbonisation. As the region faces rapidly rising energy demand and the ongoing threat of climate change, the ten ASEAN Member States (AMS) are increasingly turning to renewable energy sources, green financing and innovative technologies to meet their climate goals. The second quarter of 2024 was marked by increased momentum in renewable energy projects, bolstered by both domestic policies and international collaborations.

In this edition of Climate Insight, we explore the latest advancements in Southeast Asia's energy-climate investments and green financing mechanisms. We also provide updates on technological innovations, as well as the evolution of carbon pricing policies that are incentivising cleaner energy transitions.

The region's efforts are a step towards achieving long-term sustainability and economic growth through a more resilient and greener energy future, driving forward the transition to a low-carbon economy while addressing the challenges posed by climate change.

Progress in Energy – Climate Investment

[Cambodia advanced its renewable energy efforts](#) in 2024 and clean energy now accounts for over 62% of total energy consumption. Driven by economic growth and rising fossil fuel costs, the country invested heavily in solar, wind and hydropower, guided by its Power Development Plan (PDP) 2022-2040. Prime Minister Hun Manet emphasised the need for renewable energy to stabilise electricity tariffs. On the environmental front, [the Ministry of Environment, in collaboration with the Global Green Growth Institute \(GGGI\), launched a two-year initiative](#) to enhance the capacity of three key Cambodian banks –Foreign Trade Bank of Cambodia (FTB), ACLEDA Bank and ABA Bank—to mobilise climate finance and secure Green Climate Fund (GCF) accreditation. Supported by GCF funding, the project aims to equip these institutions with the ability to manage on-lending and fiduciary functions, addressing Cambodia's USD 7.8 billion financial gap in terms of climate change mitigation and adaptation. By developing climate-resilient projects, this initiative is set to strengthen Cambodia's access to global climate finance, promoting sustainable development and investment opportunities.

The Asian Infrastructure Investment Bank (AIIB) has signed a USD 75 million financing contract to support the issuance of [Vietnam's first blue bond](#) by the Southeast Asia Commercial Joint Stock Bank (SeABank), alongside a green bond issuance. This marks AIIB's inaugural investment in a blue bond and aims to bolster SeABank's capital base to expand financing for sustainable activities related to water, the sea, green buildings, renewable energy and energy efficiency. Partnering with the International Finance Corporation (IFC), which together with AIIB has committed up to USD 150 million, the initiative will help SeABank strengthen its sustainable finance efforts and contribute to Vietnam's green transition and net-zero commitments.

[In the Philippines](#), the International Finance Corporation (IFC) is providing Ayala Land Inc. (ALI) with a USD 250 million sustainability-linked loan to support the decarbonisation of ALI's commercial real estate portfolio. This financing will help ALI certify 1.5 million square metres of its buildings with IFC's EDGE Zero Carbon Certification by 2025 and reduce greenhouse gas emissions by 42% by 2030. ALI will implement energy and water-saving retrofits across its properties, including malls, offices and hotels. This initiative aligns with Ayala Group's goal of achieving net-zero emissions by 2050, and IFC hopes it will inspire more sustainable development in the Philippines' real estate sector.

International investments are driving Indonesia's transition to renewable energy and emission reduction targets. A notable example is [Swedfund's USD10 million](#) equity investment in Xurya, a solar rooftop company that has developed over 170 projects, helping Indonesia move closer to its [renewable energy targets](#). While challenges remain, such as the government's continuing heavy dependence on coal, international investments are essential for the country's low-carbon transition. [The Norwegian Climate Investment Fund](#), managed by Norfund, has announced its first direct investments in Indonesia's renewable energy sector, totalling USD 29.6 million. The investment will focus on developing rooftop solar, combined solar and battery solutions, and a hydropower project. These new investments are anticipated to prevent CO2 emissions of nearly half a million tons per year.

[Malaysia's](#) Ministry of Investment, Trade and Industry (MITI) has introduced a comprehensive Green Investment Strategy to attract green investments and promote sustainable socio-economic growth. Ratified during the National Investment Council Meeting, this initiative aligns with the New Industrial Master Plan 2030 and the National Energy Transition Roadmap, aiming for net zero carbon emissions by 2050. Minister Tengku Datuk Seri Utama Zafrul Aziz emphasised that the strategy seeks to increase investments nearly eight-fold in key sectors such as energy efficiency, renewable energy, green mobility, carbon capture, utilisation and storage (CCUS), and the circular economy. This initiative is expected to stimulate job creation, enhance skills development and position Malaysia as a regional leader in green technology and investment.

Fostering Sustainability through Innovation and Cooperation

The advancement of renewable energy technology is critical for ASEAN as the region accelerates towards a sustainable energy future. The AMS have made notable progress, both through national initiatives and international collaboration. In Indonesia, [PT PLN Indonesia Power \(IP\)](#) plans to expand hydrogen use in power plants with a total capacity of 41 GW, marking a significant step in the energy transition towards achieving net zero emissions by 2060. Aside from that, [nuclear power](#) has been incorporated into the Draft Law on New and Renewable Energy (NRE Bill). The country is partnering with the United States to develop a nuclear power plant, supported by a grant of USD 2.3 million (Rp34 billion) to aid in the programme's development.

In August, Indonesia hosted [the 2nd International & Indonesia Carbon Capture and Storage \(IICCS\) Forum 2024](#), highlighting the importance of carbon capture and storage (CCS) technology for achieving sustainable energy commitments. The forum's chairman noted that CCS can help countries meet their carbon reduction goals while fostering sustainable economic growth. Indonesia plans to implement [15 CCS and CCUS projects](#) by 2030, marking significant progress in transforming its energy sector.

In Malaysia, the number of [electric vehicle \(EV\) charging stations](#) has risen by 12.5% since the first quarter of this year, supported by government efforts to streamline installation, in line with [the Low Carbon Mobility Action Plan](#) 2021-2030, which targets [10,000 EV chargers by 2025](#).

Meanwhile, [Sarawak Metro Sdn Bhd](#) plans to acquire 55 hydrogen buses for its Kuching Urban Transport System (KUTS), enhancing the feeder network for the hydrogen-powered Autonomous Rapid Transit (ART) system, which boasts a 300km range, zero emissions and ART vehicles that are able to accommodate 250 passengers. 250 passengers.

In Singapore, a USD 90 million initiative has been launched to decarbonise the energy and industrial sectors by advancing research in hydrogen utilisation and greener fuels like sustainable aviation fuel. [The Create Thematic Programme in Decarbonisation](#) includes nine projects over three to five years and aligns with Singapore's National Hydrogen Strategy, targeting low-carbon hydrogen to account for 50% of the electricity mix by 2050 and the operation of at least four hydrogen-ready power plants by 2030.

In Thailand, [Power-All Networks Limited](#) has signed a USD 30 billion Exclusive Partnership Agreement for a solar roof project that will benefit 6 million farming households by installing solar roofs, enhancing energy independence and supporting renewable energy goals through digital bond financing. Additionally, [SCG Cleanergy \(specialises in solar and wind energy\)](#) and [Seagate Technology \(a leading innovator of mass-capacity data storage\)](#) have contracted to install a 20.96 megawatt solar rooftop system at Seagate's factory in Nakhon Ratchasima, allowing Seagate to generate clean electricity and reduce greenhouse gas emissions.

In the Philippines, [Turboden S.p.A.](#) has launched a 28.9 MWe geothermal power plant as part of the Energy Development Corporation's Palayan Bayan expansion, enhancing the 140-MW Bacon-Manito facility. It is expected to generate 219,800 MWh annually while reducing carbon emissions by about 72,200 tons—equivalent to the CO₂ absorption of a forest 4.7 times the size of Manila. Concurrently, the [123 Agreement with the US](#) has taken effect, facilitating the exchange of nuclear energy information and technology. This agreement supports potential nuclear projects in the Philippines, aiming for at least 1,200 MW of nuclear capacity by 2032.

Meanwhile, [Vietnam](#) and the United States have launched a collaboration to develop a green hydrogen fuel, beginning with a Memorandum of Understanding (MoU) between the U.S. Agency for International Development and Standard Chartered Bank of Vietnam. The partnership aims to produce up to 500,000 tons of hydrogen annually by 2030, with a long-term goal of reaching 10 to 20 million tons by 2050. Unlike conventional hydrogen production, which relies on fossil fuels and emits carbon dioxide, Vietnam plans to generate green hydrogen through electrolysis powered by renewable energy sources such as tidal, solar and wind energy.

Navigating Carbon Pricing Initiatives Across ASEAN

The AMS have been actively advancing mechanisms to implement carbon pricing instruments (CPIs), which are crucial for achieving their net-zero targets.

Recently, significant progress has been made in several AMS countries beyond Indonesia's Carbon Market, which was launched in 2023, and Singapore's carbon tax, introduced in 2019.

In July 2024, [Bursa Malaysia Bhd](#) announced the eight successful bidders for Malaysia's first nature-based carbon credits auction, conducted by its subsidiary Bursa Carbon Exchange (BCX), featuring credits from the Kuamut Rainforest Conservation project in Sabah. Notable winners include national oil and gas company Petronas, along with publicly listed firms Malayan Banking Bhd, Gas Malaysia Bhd and Yinson Holdings Bhd. By creating a marketplace for carbon credits, Malaysia aims to attract investment in forest conservation and restoration, further driving down carbon emissions. This marks a significant milestone for BCX, offering its first Malaysia Nature-based Carbon Credits Plus (MNC+) and expanding its product offerings to include both local and global carbon credits. Additionally, the government is developing a [National Carbon Market Policy](#), to explore offset methods for reducing GHG in the iron and steel sector. The policy will also align with UNFCCC guidelines to facilitate international carbon trading while ensuring Malaysia meets its nationally determined contributions. Furthermore, ongoing discussions with the [World Bank](#) are exploring the feasibility of implementing a carbon tax, notably how the carbon market mechanism can be strengthened.

Meanwhile, in Thailand, [BCPG](#) has teamed up with KASIKORNBANK to issue the country's first "Bonds Plus Carbon Credit", targeting institutional investors and aiming at fostering the carbon credit market through innovative fundraising. With a total issuance of THB 2,000 million, these fixed-rate bonds uniquely allow investors to choose between receiving carbon credits certified by TGO or renewable energy certificates (RECs) that meet I-REC standards. The carbon credits and RECs generated from BCPG's solar power project can offset greenhouse gas emissions.

Furthermore, these credits can be traded in the secondary market, increasing liquidity and promoting the development of Thailand's carbon credit trading market. Furthermore, [Thailand](#) is set to become Southeast Asia's second country, after Singapore, to implement a carbon tax. The tax, expected to be introduced next year, will impose a levy of 200 baht (USD 5.60) per tonne of CO₂e on oil products like diesel and gasoline. The tax will be integrated into existing oil product taxes, ensuring no additional costs are passed onto consumers and avoiding the need for new legislation. Other Southeast Asian nations are also exploring carbon pricing mechanisms. Indonesia, initially planning to introduce a carbon tax in 2022, has postponed it to 2025 to ensure it aligns with existing laws.

At the same time, [Singapore and Lao PDR](#) have signed an MoU to collaborate on carbon credits in alignment with Article 6 of the Paris Agreement. The MoU outlines a plan for a legally binding bilateral framework to facilitate the international transfer of carbon credits, with a focus on exchanging best practices and knowledge pertaining to carbon market mechanisms. Simultaneously, Singapore launched the [Singapore Carbon Market Alliance \(SCMA\)](#), a national platform designed to connect developers of carbon credit projects with potential buyers, ensuring credits comply with the Paris Agreement. The SCMA aims to help corporations advance their climate goals by purchasing high-quality credits to offset carbon taxes. The SCMA, a collaboration between the Singapore Economic Development Board and the International Emissions Trading Association, currently has over 50 members from sectors like energy and healthcare.

[The Philippines' House Committee on Climate Change](#) approved the "Low Carbon Economy Investment Act of 2023," marking a major step towards a low-carbon future. It introduces a carbon pricing framework and requires companies to establish a decarbonisation fund for emissions exceeding set targets. The bill also supports low-carbon investments by providing access to carbon markets and international climate finance. Therefore, these initiatives not only underscore ASEAN's commitment to balancing environmental sustainability with economic viability but also pave the way for enhanced collaboration and investment in green technologies. The momentum built through these measures will be crucial in driving the region towards a resilient low-carbon economy, ultimately contributing to global climate goals.

As ASEAN progresses in decarbonisation, the region's commitment to a sustainable and resilient energy future becomes increasingly evident. The advancements in renewable energy technologies, green financing and carbon policies highlight the need for enhanced collaboration among member states and international partners. Strengthening this cooperation is vital for accelerating the transition to a low-carbon economy and achieving climate goals.

This insight is a product of the ASEAN Climate Change and Energy Project II (ACCEPT II)

ACCEPT II is a continuation of ACCEPT Phase 1 that was successfully accomplished on 31 March 2022. The commencement of the 48-month project officially began on 1 November 2022. This collaborative project between the ASEAN Centre for Energy (ACE) and the Norwegian Institute of International Affairs (NUI) is funded by the Norwegian Government, under the Norwegian-ASEAN Regional Integration Programme (NARIP). The project aims to support ASEAN member states and ASEAN's capacity to transition to Low-Carbon Energy System and contribute to carbon neutrality or a net zero future.



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Contact us



Soemantri Brodjonegoro II Building, 6th fl,
Directorate General of Electricity,
Jl. HR. Rasuna Said Blok X-2, Kav. 07-08,
Jakarta 12950, Indonesia



(62-21) 527 9332



accept@aseanenergy.org



accept.aseanenergy.org



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