

Council for Security Cooperation in the Asia Pacific



Regional Security Outlook

2026



Asia's Climate Governance and China's Potential Role as a “Green Engine”

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Climate change stands as one of the most pressing challenges of our time, transcending national borders, endangering human well-being, and demanding individual and collective action. Asia—a region endowed with the world's largest population and fastest-growing economies, as well as a diverse geography—is exceptionally vulnerable to the impacts of climate change and thus recognizes the shared climate risks and the imperative for joint climate action. However, the region also has divergent priorities in socio-economic development and a lack of effective regional multilateral arrangements. There has also been a setback in global climate governance¹, represented by the United Nations Framework

Convention on Climate Change (UNFCCC) and its Paris Agreement. Asia's efforts at climate governance are facing practical difficulties.

As a country significantly affected by climate change, China has set ambitious national goals for reaching peak carbon emissions and carbon neutrality, and developed a comprehensive national climate strategy that prioritizes the green transition to achieve the dual objectives of addressing climate change and driving economic growth. Over the years, China's national climate strategy has produced concrete results, turning the country into an important and influential player in climate governance and green industry. From this

¹ In this context, global climate governance can be defined as a system of international institutional frameworks, normative agreements, and operational rules designed to coordinate collective actions among sovereign states, non-state actors, and global stakeholders for the overarching goal of mitigating and adapting to climate change.



Weihai, Shandong, China, June 24, 2023. Photo by Marko Sun via Unsplash

position, China could contribute to the region’s green transition and unleash its great potential.

With heightened climate risks, disruptions in energy supply chains, and uncertain economic growth, Asia is at a pivotal moment to decide its future development path. By analyzing Asia’s evolving landscape of climate challenges coupled with the practical difficulties of climate governance, and dissecting China’s national climate strategy centred on the green transition, this essay explores how China could serve as a “green engine” for Asia and what this means for the region’s broader climate collaboration.

The Imperative of Climate Governance in Asia

Climate governance in Asia has reached a critical juncture, necessitating immediate and collective action.

SHARED CLIMATE RISKS

Asia, home to over 60 percent of the world’s population and a key growth engine of the global economy, faces disproportionate risks from climate change. According to the State of the Climate in Asia 2024 report released by the World Meteorological Organization (2025), Asia experienced its warmest or second-warmest year on record in 2024 and is warming nearly twice as fast as the global average. Extreme weather events—

including heat waves, floods, droughts, tsunamis, and typhoons—frequently strike Asia. The rapid melting of Himalayan glaciers threatens the water resources and agricultural systems that sustain communities along the Yangtze and Ganges rivers. Low-lying coastal towns and Pacific Islands, such as Tuvalu and Kiribati, face an existential crisis due to rising sea levels. Ecological degradation affects rainforests and coral reefs, further compounding environmental challenges.

Climate challenges are not confined within national borders and entail multifaceted and intertwined risks, threatening food, water, and energy security, and endangering the lives and livelihoods of people across the region. As many Asian countries are trade-oriented and deeply interconnected in regional and international supply chains, the economic stakes of climate change are particularly high. Research by the Asian Development Bank (2024) found the impacts of climate change in a high greenhouse-gas-emissions scenario could reduce gross domestic product (GDP) in developing Asia and the Pacific by 17 percent by 2070, rising to 41 percent by 2100. Furthermore, climate change exacerbates resource scarcity, which might cause geopolitical tensions and even conflicts in the region. To avoid this outcome, collective action is required.

PRACTICAL OBSTACLES TO COLLECTIVE CLIMATE ACTION

Asian countries have made climate commitments by submitting Nationally Determined Contributions (NDCs) and National Adaptation Plans under the Paris Agreement framework. They have also initiated

efforts to collaborate to mitigate climate risks and build regional resilience. However, Asia’s collective climate action confronts practical obstacles.

First of all, Asia’s vast disparities in levels of development and national divergences regarding development priorities create significant challenges for climate co-operation. Asia’s economic development heavily relies on energy and natural resources. Many Asian nations see economic development—and thus energy security—as a higher priority than climate-change mitigation. Particularly for less-developed countries or countries reliant on fossil fuels, energy security often rests on high carbon-emitting energy sources. The region’s rapid urbanization and industrialization are exacerbating this problem as more people living in the cities and more industrial operations increase energy use. This gives rise to a classic collective-action dilemma, as the increase in carbon emissions generated by one country imposes tangible, cross-border negative externalities on other nations, amplifying the pace of global warming and

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thereby creating significant barriers to coordinating climate-mitigation efforts and nurturing mutual trust among international stakeholders.

Second, the lack of effective multilateral arrangements hampers regional climate co-operation. Despite an increasing number of climate initiatives in Asia, the region still lags behind the European Union in building a unified and effective platform (for example, the European Green Deal) to align countries' emission-reduction targets and pool resources like green technologies, climate financing, and carbon-credit mechanisms. The primary reason lies in Asia's diversity of climate vulnerability and adaptability, which leads to disagreements regarding the foundational principle of international climate negotiations, "common but differentiated responsibilities." Debates about how to balance historical emissions and current development needs impede regional coordinated action on climate change.

Last but not least, Asia's climate action is affected by the setback in global climate governance. Despite COP30's approval of the Belém Package, including a commitment to triple adaptation finance by 2035, the Paris Agreement is challenged by the insufficient implementation of NDCs, funding shortfalls, and delays in technological solutions and capacity building. A United Nations report cautioned that "progress in national climate policy efforts remains insufficient to achieve 2030 Targets" (United Nations Public Administration Network 2024). As Asia relies heavily on international collaboration for climate funding, technology transfer, and capacity-building support,

this setback in global climate governance undermines the region's climate momentum. Since systemic challenges persist, it is imperative to explore more unified, innovative, and effective approaches to climate co-operation in the region.

China's National Climate Strategy Centring on the Green Transition

As the world's largest developing country, with a population of over 1.4 billion, China has placed increasing emphasis on environmentally sustainable development and has fostered a national climate strategy that centres on the green transition, encompassing a domestic "dual carbon" policy as well as support for the global climate agenda.

CHINA'S DOMESTIC DUAL-CARBON POLICY

With the notion of "humans and nature as a community with a shared future," China has developed a multidimensional, multifaceted, and systematic national climate strategy centring on a green and low-carbon transition, which requires that China strike a balance between socio-economic development and emissions reduction. At the core is China's "1+N" policy framework, where the "1" stands for the guiding principle of dual-carbon goals—reaching peak carbon emissions before 2030 and achieving carbon neutrality by 2060—and the "N" encompasses action plans for green transitions in key sectors, industries, and administrative districts (Xinhua 2025a). This framework provides overarching guidelines for the country's climate strategy and sets clear benchmarks and a road map for coordinated climate action across the entire economy.



China's President Xi Jinping speaks remotely during the "Climate Summit 2025" on the sidelines of the United Nations General Assembly at the UN headquarters in New York City on September 24, 2025. Photo by Charly Triballeau/AFP via Getty Images

Over the years, China's dual-carbon policy has produced tangible outcomes on climate mitigation and adaptation. China has contributed about one-fourth of the reforested areas worldwide (Chen et al. 2019) and ranks among the countries with the fastest decline in energy-consumption intensity (i.e., the amount of energy consumed per unit of GDP) (Huang et al. 2025). China has also made notable achievements in the green transition of its economy and society, by building the largest and fastest-growing renewable-energy industry, effectively making China a key driver in lowering global clean-tech costs.

China also incorporates climate measures and green development in its domestic socio-economic policies. The new 15th Five-Year Plan (2026–2030) for National Economic and Social Development specifies measures on "working actively and prudently toward peaking carbon emissions" and "accelerating the shift to eco-friendly production practices and lifestyles" (Xinhua 2025b). This integration not only bolsters China's

capacity to implement targeted sustainability measures but also generates positive spillovers that can accelerate the green transition across the broader region, signalling China's entry into a new phase of resilient, low-carbon development.

CHINA'S GLOBAL CLIMATE COMMITMENT

As a major developing country, China has positioned its climate strategy as both a domestic priority and an element of international engagement. China upholds the multilateral mechanisms established by the UNFCCC and the Paris Agreement, recognizing these frameworks as the cornerstone of global climate governance. While upholding these international commitments, China emphasizes the principle of common but differentiated responsibilities and the pursuit of a just transition, acknowledging that developed and developing nations have distinct historical contributions to global warming and different capabilities in addressing climate change.

At the United Nations Climate Summit on September 24, 2025, China announced its new NDCs, which aim to reduce economy-wide net greenhouse-gas emissions from peak levels by 7–10 percent by 2035, and intends to do better. The new NDCs also state that China will increase the share of non-fossil fuels in total energy consumption to over 30 percent; expand the installed capacity of wind and solar power to over six times the 2020 levels, striving to bring the total to 3,600 gigawatts; scale up the total forest stock volume² to over 24 billion cubic metres; make new energy vehicles³ mainstream; expand the National Carbon Emissions Trading Market to cover major high-emission sectors; and establish a climate-adaptive society (Xi 2025).

China has taken a range of actions to contribute expertise and resources to global efforts to combat climate change. China pledged to stop building new coal-fired power plants abroad, while at the same time increasing its support for developing countries to pursue green and low-carbon development. This latter move is particularly important as developing countries (excluding China) need to invest an estimated US\$2.4 trillion per year by 2030 in climate action, of which around US\$1 trillion per year needs to be sourced internationally (Songwe et al. 2022).

The Green Belt and Road Initiative (BRI) is also a case in point. The Green BRI marked an important update to the earlier version of the BRI, reorienting infrastructure investment from carbon-intensive projects toward climate-friendly solutions, such as green infrastructure, clean-power projects,

and low-carbon industrial supply chains. During the third Belt and Road Forum for International Cooperation held in October 2023, China, together with thirty-five countries, jointly launched the Initiative on International Trade and Economic Cooperation Framework for Digital Economy and Green Development, making the digital and green transformations twin objectives in international trade and economic co-operation.

China's domestic dual-carbon policy and global climate commitment represent the essence of China's national climate strategy. Nevertheless, achieving the green transition requires not only top-level strategy but also concrete actions, where critical gaps and obstacles in implementation remain. Several areas present opportunities for further action, including further strengthening the legal and regulatory system; aligning national goals and local realities across provinces, especially in areas that are less developed and rely more on energy-intensive industries; as well as deepening co-operation with regional and international partners, in order to further solidify the green transition in China and beyond.

China's Potential Role as a "Green Engine" of Asia

China's ongoing efforts toward the green transition hold great potential to foster deeper green co-operation with its neighbours. A critical question now emerges: how can China fully leverage its role as a "green engine" of Asia's climate governance to inject fresh impetus to the green transition in Asia and the broader world?

2 The forest stock volume, defined as the total volume of the stems of all living trees per unit area, is often used for forest resource management and planning and as a predictor of carbon-related variables and carbon stocks.

3 New energy vehicles (NEV) refer to vehicles that differ from traditional internal combustion engine vehicles and primarily include hybrid electric vehicles, battery electric vehicles (BEV), and fuel cell electric vehicles (FCEV).

ENHANCING REGIONAL GREEN SUPPLY CHAINS

As Asia's demand for energy continues to rise and international oil and gas supplies have been frequently disrupted in recent years, China's green technological and industrial foundations make it a natural partner for regional green supply-chain collaboration. China's sustained investment in green technologies provides increasingly accessible and affordable clean energy for Asian countries. Chinese solar panels and wind turbines have been widely adopted across Asia. China's clean-energy exports in 2024 are estimated to have cut the carbon emissions of importing countries by 1 percent (Myllyvirta 2025). With its massive investments in the supply chains of the "new trio" of electric vehicles, lithium-ion batteries, and photovoltaic products, China could provide scalable solutions to reduce carbon emissions in Asia.

China's overseas green investment could provide much-needed green capital and expertise to the region. According to research by the Net Zero Industrial Policy Lab, since 2022, Chinese overseas green investments have surged past US\$220 billion, spanning sectors such as batteries, solar, wind, new energy vehicles, and green hydrogen (Xue and Larsen 2025). Asia, especially ASEAN countries, remains the primary destination for Chinese green investment, where China leads public investment in ASEAN countries with over US\$2.7 billion in clean energy (Zero Carbon Analytics 2025). The China–Ethiopia–Sri Lanka Renewable Energy Technology Transfer Project is also a successful case in point, achieving notable progress in enhancing local access to clean and renewable energy through knowledge and technology transfer (UNDP 2024).

China, together with neighbouring countries, could leverage their comparative advantages in green technologies, abundant natural resources, well-educated human resources, and vibrant markets to stimulate green innovations, scale up green production, and promote clean-tech trade, in a joint effort to

build a robust regional green supply chain, reduce the region's reliance on fossil fuels, and transition to a low-carbon economy.

BOOSTING REGIONAL CLIMATE FINANCING

Given Asian countries' soaring demand for climate financing, China could work with partner countries in the region on climate financing. China has already made progress in this regard. The South-South Cooperation Fund, established by China in 2015, has provided project funding and development aid exceeding 177 billion yuan (approximately US\$25 billion) to assist other developing countries in strengthening climate resiliency (Xinhua 2025a).

China and other leading green economies in the region—including Singapore, a global hub for green finance, and South Korea, a pioneer in hydrogen-energy technology—could build stronger co-operative frameworks, such as a regional climate-finance pool and a green tech-transfer network dedicated to climate funding and capacity building in less-developed countries.

They could also encourage regional financial institutions to play a bigger role in climate financing, as well as issuing green bonds, building carbon-pricing mechanisms, and expanding carbon markets. For example, the Asian Infrastructure and Investment Bank, with China as a key player, launched its Climate Action Plan in 2023 and released an update of its corporate strategy in 2025, which targets over 50 percent of its annual financing to climate-related investments, with total climate finance exceeding US\$50 billion over the strategy period of 2021–2030 (Asian Infrastructure and Investment Bank 2025). The World Bank and Asian Development Bank could also play a bigger part in climate financing in the region.

The Regional Comprehensive Economic Partnership (RCEP) could also serve as a critical platform for

climate financing, yet its diverse membership poses notable challenges. With economies ranging from developed nations, like Japan and Australia, to least-developed countries, such as Laos and Myanmar, the region displays a wide gap in financial capacity, technological advancement, and development priorities. However, this diversity, while a challenge, also presents an opportunity to design frameworks that balance development needs with climate goals. For example, RCEP can establish a tiered and layered climate-financing mechanism, with developed member economies contributing climate funds and sharing green technologies, while emerging markets offer affordable manufacturing supply chains for renewable-energy products and help less-developed countries transition to green development, thereby unleashing the potential of economic integration and the green transition across the region.

PROMOTING MULTILATERAL CLIMATE INITIATIVES

China's long-standing commitment to multilateralism and open regionalism is also evident in multilateral climate platforms. As a key member of various regional multilateral institutions, China has the opportunity to collaborate with fellow countries to promote multilateral climate initiatives.

In its relationship with ASEAN China has been a key participant in the ASEAN Plus Three Environment Ministers' Meeting and has contributed to setting up the ASEAN–China Environmental Cooperation Forum, as well as the China–ASEAN Clean Energy Cooperation Center. China supports capacity-building activities through such initiatives as the ASEAN–China Initiative on Climate-Resilient Friendship Cities, as well as the “Plan of Training for 10,000” to help ASEAN countries train 10,000 people in governance, anti-corruption, and green energy in the next three years (Ministry of Foreign Affairs of People's Republic of China 2023). China has also supported clean-energy projects under

the Lancang-Mekong Cooperation framework, such as hydropower dams along the Mekong River Basin and solar farms in Southeast Asia.

Within the Shanghai Cooperation Organisation (SCO), China has integrated green co-operation as a new priority, and has set up the SCO Green and Sustainable Development Forum. At the China–Central Asia mechanism, launched by China, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, green mining, green industries, and green development have been listed as priorities for co-operation among member countries.

China, Japan, and the Republic of Korea have also utilized their respective advantages—for example, China's expertise in large-scale renewable-energy supply chains, Japan's cutting-edge carbon-capture and -storage technology, and the Republic of Korea's advanced green-hydrogen system—to implement the Tripartite Joint Action Plan on Environmental Cooperation, creating more opportunities for green development and capacity building across the region.

However, due to the fragmented nature of regional platforms, geopolitical tensions, and competing national interests, multilateral climate co-operation is facing real challenges, and climate commitments are often non-binding, reducing accountability and motivation for compliance. Yet, these challenges are not insurmountable. Common interests on protecting shared ecosystems, mitigating transboundary climate impacts, and pursuing the green transition to a more sustainable economy, can serve as a unifying force. By leveraging these shared concerns, China and other countries in the region should share expertise, synergize efforts, align national climate strategies, and create a broader foundation to build a more unified and inclusive regional agenda for climate governance and green development.

Conclusion

Confronted with the shared risks posed by climate change, Asia's co-operation on climate governance represents a crucial test of the region's ability to address common challenges through collective action and to seize the new-found opportunity of the green transition. China, through its rapid advancement in green development and its enthusiasm for regional co-operation on green initiatives, has great potential to serve as a "green engine" of Asia. Nevertheless, China faces significant constraints to playing this role, especially in implementing in green technologies across its overseas projects, as well as managing the divergent governance capabilities and misalignment of green standards among partner countries. Compounding this are escalating geopolitical tensions and supply-chain uncertainties. Western nations have framed China's green supply chains as national-security concerns and erected "green barriers" to Chinese clean tech—from solar panels and battery production to electrical

vehicles. Such a protectionist tendency has fuelled suspicions in the region about its growing reliance on Chinese clean tech, which not only create barriers for China's green initiatives overseas but also disrupt the momentum of the global green transition.

Overcoming these constraints requires China to make sustained investment in technological breakthroughs to unlock the immense economic potential of the green transition, to develop more localized manufacturing for renewable-energy components—thus creating jobs, fostering technological transfer, and creating a mutually beneficial cycle—as well as to engage in deeper, more inclusive, and mutually beneficial regional collaboration. By focusing on the common goal of addressing shared climate challenges and seizing green opportunities, China and other Asian countries can find common ground and foster a culture of shared responsibility for inclusive and environmentally sustainable growth across Asia.

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2026



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