NUS National University of Singapore | ISAS Institute of South Asian Studies

ISAS Brief
No. 1287 – 22 September 2025

Configuring India-China Climate Cooperation

Karthik Nachiappan, Pooja Ramamurthi and Constantino Xavier

Summary

This brief focuses on green diplomacy within the India-China relationship, which was a central theme of a recent workshop on India-China climate cooperation organised by the Institute of South Asian Studies and the Centre for Social and Economic Progress, New Delhi. Despite geopolitical tensions and an unresolved border, steps toward normalisation are evident, possibly generating opportunities for climate cooperation.

Relations between India and China appear to be on the mend. Yet, the relationship continues to be sharply influenced and constrained by geopolitics and geo-economics, including China-Pakistan ties, United States-China dynamics and economic competition and coercion. From an energy transition perspective, however, there is scope for engagement and cooperation. Both countries are undergoing green transitions that will rewire industrial structures, investment and trade. China's vast capacities in solar, wind, batteries and electric vehicles (EV) present both opportunities and challenges for India, which, in its quest for self-reliance, will have to make strategic choices between cooperation and competition depending on sector-specific sensitivities.

India aims to double its renewable energy capacity and achieve 30 per cent EV penetration within five years, aspiring to become a global player in green trade. Yet, it appears that India will remain dependent on China's dominance in green technology supply chains in the short and medium term. Imports of Chinese batteries, wind components and power equipment underscore this interdependence, despite India's efforts since 2009 to rebalance bilateral trade. Domestic manufacturing has not scaled sufficiently, leaving India reliant on China's efficiency, cost structures, and market dominance.

A key policy challenge for India is how to strategically leverage China's strengths to advance its own transition. India may, for example, benefit from China's experience in managing renewable intermittency, developing smart grids and market-based pricing, and accelerating EV adoption. Security-sensitive areas such as data and semiconductors will likely depend on 'trusted partners and suppliers', limiting cooperation, but other sectors like wind power offer scope for joint investment and trade. The scale of China's transition is also relevant for India, particularly in decarbonising hard-to-abate sectors, advancing electric mobility and securing critical minerals. Closer engagement could facilitate India's pursuit of net zero by 2070 while aligning growth with sustainability. Cooperation, however, will be conditional, relying on multiple channels beyond direct bilateral ties. Mistrust and geopolitical tensions will persist, making it important to focus on existing opportunities and specific sectors with mutual wins.

On green trade, India's drive for self-reliance through tariffs and local-content rules has raised project costs without significantly boosting domestic manufacturing, as firms

continue to rely on imported inputs. Addressing this gap, however, requires more than removing trade restrictions. Foreign direct investment (FDI) and technology transfer are critical to strengthening India's manufacturing base and enabling trade, especially as renewables become a path to strategic autonomy.

On green FDI, there is potential to align green-finance norms and coordinate investments through third-country or multilateral channels. India and China, as major shareholders of the Asian Infrastructure Investment Bank (AIIB), could collaborate on climate-finance initiatives. They might also engage with platforms such as the ASEAN Catalytic Green Finance Facility, which provides technical assistance and capital for green infrastructure projects, thereby de-risking investments and attracting private capital. Both countries could also cooperate on developing regionally relevant taxonomies to mobilise finance.

Yet, trust deficits, trade competition and the absence of a clear industrial strategy could hinder technology transfer and joint ventures. China is a global leader in patents and high-impact climate research, while India's innovation system remains under-invested and produces fewer cutting-edge outputs. This asymmetry reduces incentives for joint scientific collaboration. So far, Chinese investments in India's renewable sector have been largely commercial, limited to equipment supply and financing. India must clarify how technology fits into its climate and industrial strategy before pursuing joint initiatives. In the meantime, mutual learning in regulatory design, demand-side management, and adaptation appears more feasible than high-tech transfer or co-development. There is also a strategic opening to engage on issue areas beyond frontier technologies, where China currently dominates. These include working together towards agricultural sustainability, improved climate resilience and developing robust carbon markets.

Institutionally, India and China have engaged on climate issues through several frameworks, though such engagement has waned since 2015. Historically, both countries shared similar positions as large developing economies – emphasising common but differentiated responsibilities and balancing mitigation with adaptation. Prior to recent tensions, bilateral frameworks included a 2009 partnership on climate change and an India-China Working Group on Climate Change. These dialogues merit revival. A gradual resumption of bilateral engagement may occur through multilateral platforms (BRICS, AIIB), third-party facilitation, or by decoupling climate diplomacy from political disputes. Platforms such as BRICS, BASIC countries and the Shanghai Cooperation Organisation remain avenues for climate India and China to test engagement in the climate and energy domains. The two countries could pursue complementary roles: China in large-scale infrastructure and India in grassroots entrepreneurship, while leveraging multilateral channels to finance joint projects. The countries also have an opportunity to strengthen engagement through civil society and academic dialogues.

Given their decarbonisation pathways, cooperation in green trade, investment, technology and diplomacy will likely remain strategic, selective and pragmatic. Cooperation – through FDI, technology exchange and multilateral initiatives – will be essential if both countries are to meet their renewable-energy targets and contribute meaningfully to global decarbonisation. India's ambition to grow its clean-energy industry faces the challenge of rising dependence on China for key inputs. China's dominance across green-technology

supply chains and cost advantages make complete decoupling untenable. Progress will depend on India's ability to balance strategic sensitivities with the imperative of availing affordable and proven decarbonisation tools to meet its 2030 clean-energy goals, and 2070 net-zero target.

. . . . .

Dr Karthik Nachiappan is a Research Fellow at the Institute of South Asian Studies (ISAS), an autonomous research institute at the National University of Singapore (NUS). He can be contacted at karthiknach@nus.edu.sg. Dr Pooja Ramamurthi is a Fellow at the Centre for Social and Economic Progress, New Delhi. She can be contacted at pramamurthi@csep.org. Dr Constantino Xavier is a Senior Fellow at the same centre. He can be contacted at cxavier@csep.org. The authors bear full responsibility for the facts cited and opinions expressed in this paper.