

QUAD-ASEAN COOPERATION ON CLIMATE CHANGE AND CRITICAL MINERALS



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ISAS Special Report

QUAD-ASEAN Cooperation on Climate Change and Critical Minerals

Karthik Nachiappan and Saeeduddin Faridi

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Executive Summary

The Indo-Pacific has emerged as a theatre of rivalry between the United States (US) and China. This landscape is characterised by the spillover of security pressures into domains of trade, economics, climate and technology. In particular, we are witnessing a proliferation of minilateral groupings. Countries are relying on such informal, flexible and nimble mechanisms to address shared challenges. The Quadrilateral Security Dialogue (Quad), comprising four Indo-Pacific maritime democracies – Australia, Japan, India and the US – has emerged as a prominent minilateral initiative.

This landscape is characterised by the spillover of security pressures into domains of trade, economics, climate and technology.

The Quad's emergence and revival is steeped in the realities of the Indo-Pacific. Initially motivated by growing Chinese assertiveness, the group has now been recast as a public goods provider. Also at the heart of the Indo-Pacific is the Association of Southeast Asian Nations (ASEAN). For the Quad to succeed as a public goods provider, ASEAN will be critical. Can the Quad cooperate to advance mutual interests and address shared concerns?

This report focuses on two critical areas: climate change and critical minerals. It maps and assesses how collaboration can occur between the Quad and ASEAN on these two closely linked issues. The criticality of these two domains cannot be understated, given the high priority accorded to climate adaptation, mitigation and resilience, and energy transitions, as well as critical minerals and their supply chains.

Close cooperation is necessary to address these challenges. The Quad and the ASEAN member countries are partnering to develop capacity to drive their energy transitions, decarbonisation and climate adaptation and mitigation efforts. This holds true for critical minerals that are essential for the ongoing global energy transition and the shift from a fossil fuel-intensive energy system to a minerals-focused sustainable energy matrix.

This report covers the perspectives from ASEAN and the Quad countries to identify where cooperation can be catalysed on climate change and critical minerals. On climate change, the ASEAN member countries have established domestic targets to deploy renewable energy and phase out carbon-intensive energy generation. The Quad could potentially advance these goals through a mix of policies, finance and technology.

Critical minerals and their supply chains are vital to ASEAN. Some ASEAN member countries like Indonesia and Malaysia are looking to develop processing plants which generate opportunities for all Quad partners. Also, the Quad Investor Network can make strategic investments in critical minerals cooperation.

Increasing nationalism and protectionism could complicate cooperation.

Opportunities aside, some challenges could stymie cooperation in these two areas. The Quad's approach to China could keep the ASEAN member countries wary of deep participation, given their position in China-centric trade networks and supply chains. Increasing nationalism and protectionism could complicate cooperation. Resource nationalism poses a challenge in boosting supply chain cooperation. While the Quad and ASEAN member states could be constrained by the national interests, this report has identified issues and areas where cooperation can occur.

Introduction

The world today is marked by increasingly challenging cross-border dynamics that affect how countries address systemic challenges like climate change, global health, and critical and emerging technologies. Unquestionably, there is intensifying security competition as new powers rise and the global commons become more congested, contested and competitive. The Indo-Pacific demonstrates these evolving dynamics. As China continues to rise, the Indo-Pacific has emerged as a theatre of rivalry between the US and China. This rivalry has spilled over into domains like security, economics, trade, and technology.

These challenges have emerged at a time when there is little consensus about what the international or regional order should look like. This has unleashed a quest for new cooperative mechanisms – in the form of minilaterals and plurilaterals. The Indo-Pacific has witnessed a proliferation of such cooperative mechanisms, given the lack of institutional capability to address emerging regional and global challenges and challenges of navigating an increasingly polarised political landscape.

Such mechanisms are not entirely new in the region. The establishment of ASEAN, the US' hub and spoke system of alliance and the Asia Pacific Economic Cooperation Forum, among others, laid down the map of multilateral engagement in the region. Functional groups such as the East Asia Summit also emerged, given impetus by economic challenges posed by the 1997 Asian Financial Crisis.¹

There have been recurring debates and discussions among the Southeast Asian states about new regional institutions, their membership, their agenda and their efficacy. Fundamentally, these

As China continues to rise, the Indo-Pacific has emerged as a theatre of rivalry between the US and China.

¹ John Pang, "The East Asia Summit: a platform for confidence building", *East Asia Forum*, 12 November 2016, <https://eastasiaforum.org/2016/11/12/the-east-asia-summit-a-platform-for-confidence-building/>.

institutions are shaped by regional dynamics and, in turn, they shape regional dynamics. Today, intensifying security competition between the US and China and changing regional dynamics is driving a push for new institutions. At the same time, existing multilateral organisations such as the United Nations (UN) and the World Trade Organisation are being regarded as slow and inefficient.

We are now seeing a surge in such formations – bilaterals, trilaterals and minilaterals.

In this context, minilaterals offer a more informal, flexible and nimble way to address specific functional issues. We are now seeing a surge in such formations – bilaterals, trilaterals and minilaterals. This trend can also be seen in the US' foreign policy across different administrations. During President Donald Trump's first term in office, there was a focus on withdrawing or repudiating multilateral forums and engaging through smaller, more agile groupings. Under President Joe Biden, the same tendency followed with a focus on expanding interactions to address public goods challenges like climate change and critical technologies through like-minded countries and partners like India, Japan, Australia, Singapore, South Korea, the Philippines and more.

The Quad has emerged as a prominent minilateral grouping in the Indo-Pacific. This grouping has become a critical element in the US' Indo-Pacific policy and is focused on maintaining, reinforcing and supporting the existing US-led regional order.²

The Quad traces its origin to the aftermath of the 2004 Indian Ocean tsunami when these four democracies coordinated relief and humanitarian work. In 2007, the grouping was formalised as the Quad with Shinzo Abe's administration in Japan championing its idea. However, concerns and criticism raised by China turned Australia and India into reluctant members and led to the disbanding of the group.

A decade later, in 2017, the threat from China's growing economic and military capabilities and the evolving strategic balance in the which

² Kei Koga, "A New Strategic Minilateralism in the Indo-Pacific", *Asia Policy*, Volume 17, Number 4, October 2022, pp. 27-34, <https://muse.jhu.edu/article/869514/pdf>.

countries to elevate their cooperation which led to senior official-level meetings among the four countries. The Quad's comeback also gave renewed impetus to the various bilateral and trilateral cooperation mechanisms among the Quad member states, such as the Japan-US-India Trilateral and the Malabar naval exercises.³

Thereafter, the reluctance to embrace the Quad waned and the member states ramped up engagement. In 2019, the Quad held its first foreign ministers-level meeting in New York on the sidelines of the UN General Assembly. The focus of this meeting remained security-oriented with cooperation on counterterrorism, maritime security and infrastructure. However, the security-oriented nature of the Quad is being softened to accommodate the diverging interests of the member states and make the grouping more palatable to the partners in the region who may not want to antagonise China.

This shift is evidenced by the unwillingness of states to use the name 'Quadrilateral Security Dialogue', which is now replaced simply by the 'Quad'. Similarly, the Malabar naval exercise has not been linked to the Quad in any official capacity despite its membership comprising India, Japan and the US, along with Australia's participation since 2020.⁴ Under the Biden administration, this grouping was elevated in scope, ambition and relative formality. At the same time, the agenda has moved away from security and towards the provision of public goods in the Indo-Pacific. The Quad is attempting to repackage itself as a solution provider and a positive force in the region.

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In 2021, the Quad leaders convened twice for the first virtual and in-person Leaders Summits in March and September, respectively. These meetings put forward an ambitious list of initiatives that called on all the Quad countries to deepen ties on issues like health, force for regional trade "to ensure that the Quad is a force for regional peace,

³ Kristy Needham, "India, Japan, US, Australia hold first Malabar naval exercise off Australia", *Reuters*, 10 August 2023, <https://www.reuters.com/world/india-japan-us-australia-hold-first-malabar-naval-exercise-off-australia-2023-08-10/>.

⁴ "India, Japan, US, Australia hold first Malabar naval exercise off Australia", *The Straits Times*, 10 August 2023, <https://www.straitstimes.com/asia/australianz/india-japan-us-australia-hold-first-malabar-naval-exercise-off-australia>.

stability, security and prosperity”.⁵ Besides climate change, critical and emerging technologies and global health, the Quad is now engaging in areas like infrastructure, education and investment.⁶

There is also a greater degree of formalisation of the minilateral as it organises itself in working groups along various domains of cooperation.

Cooperation has expanded into areas of non-traditional security, and the group has continued efforts to make the grouping inclusive, particularly with its reiteration of ASEAN centrality, which is referred to as the ‘heart of the Indo-Pacific’. There is also a greater degree of formalisation of the minilateral as it organises itself in working groups along various domains of cooperation. The current status and position of the Quad raises several questions. How will the underlying security dynamics affect the Quad and its focus in the Indo-Pacific? How will domestic politics impact the cohesion and working of the Quad? How effective and efficient are the working groups in delivering public goods? This last question is particularly important when considering whether the Quad can actually deliver public goods to the countries in South and Southeast Asia. It is important to take stock of the Quad’s focus, programmes and discussions more concretely in specific areas to gauge its efficacy in helping other countries address and resolve gaps on issues like climate change, critical and emerging technologies and global health.

This special report seeks to measure and assess the Quad’s focus on two critical areas – climate change and critical minerals – and whether the mechanism can spur collaboration between the Quad countries and ASEAN on these two closely linked issues. All countries, especially the developing countries in Southeast Asia, are trying to engineer an energy transition to stave off harmful climate effects and reorient their economies for a greener future. However, critical mineral supplies and supply chains are concentrated in a few nations, which heightens the vulnerabilities of all countries in terms of decarbonisation. Some countries are aggressively using industrial policies to promote domestic production and establish dominance in

⁵ Joint Statement from Quad Leaders”, The White House, Statements and Releases, 24 September 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/24/joint-statement-from-quad-leaders/>.

⁶ Ibid.

the global market share of critical mineral supply chains. Moreover, supply chain issues and problems in China further exacerbate existing vulnerabilities that affect all countries in the Indo-Pacific and beyond. For some, this is a national security concern. Also, a massive amount of critical minerals is required for the Asian economies to transition away from fossil fuels and invest in ventures like electric vehicles and solar panel manufacturing, but the process of extracting these critical minerals – from exploring potential sites to mining and processing – poses significant threats to the ecosystems everywhere.

Moreover, supply chain issues and problems in China further exacerbate existing vulnerabilities that affect all countries in the Indo-Pacific and beyond.

So, all Indo-Pacific countries will have to deal with, manage and address the security, economic and ecological difficulties that emanate out of the energy transition. This report considers and describes pathways for the Quad and the ASEAN member countries to achieve that objective through policies and partnerships to address gaps and challenges concerning the energy transition: climate technologies and critical minerals exploration and use.

This report will explore some questions with respect to the Quad and Southeast Asia's energy transition:

1. How can ASEAN and the Quad work together to advance mutual interests on climate change and critical minerals?
2. How can the Southeast Asian countries secure the necessary supply of critical minerals for their energy transition? How do these countries minimise trade-offs arising between efforts to protect nature/biodiversity and reduce emissions?
3. How can the Quad address emergent gaps and opportunities faced by the ASEAN member countries on climate change and critical minerals?

Climate Change

Climate change requires more international collaborative efforts as joint initiatives become harder to craft and sustain.

The Indo-Pacific countries are exploring, experimenting and ascertaining how to best accelerate green transitions and drive their 2030 and 2070 net-zero targets. Undeniably, the journey of most countries will involve domestic change and international cooperation. Climate change requires more international collaborative efforts as joint initiatives become harder to craft and sustain. With the UN system fragmenting, multilateral development banks evolving and adapting, and ‘minilaterals’ emerging to fill specific gaps, the landscape around climate politics and geopolitics is transforming.

All the Quad and ASEAN member countries are assessing and rethinking which diplomatic mechanisms and frameworks to advance climate action, and where the opportunities and risks lie to execute viable climate transitions.

ASEAN

Southeast Asia is acutely vulnerable to climate change despite contributing only eight per cent to global carbon emissions. With the rise in greenhouse gas emissions, extreme weather events will likely rise. Floods, droughts, habitat loss and rising sea levels are prevalent problems in the region. The ASEAN member countries have individually announced their Nationally Determined Contributions and net zero targets. The target among most ASEAN member countries is to reach net zero by 2050, barring Indonesia, which has set a target of 2060.⁷ ASEAN, as a whole, does not have a comprehensive climate adaptation and mitigation plan. Fundamentally, there is a deep need for climate policy to be coordinated across ASEAN and not be designed in silos. Coordination and cross-sectoral cooperation can benefit outcomes

⁷ Roberto Bocca, and Harsh Vijay Singh, “Why Southeast Asia will be critical to the energy transition”, World Economic Forum, 16 January 2023, <https://www.weforum.org/agenda/2023/01/why-southeast-asia-critical-energy-transition/>.

and, at the same time, several issues relevant to climate change can be taken up at the summit level.

Domestically, most ASEAN member countries have weak climate policies which are unlikely to meet the net zero targets. The political economy complicates the push to net zero. First, there is a lack of political will to undertake comprehensive climate policies and electorally, climate, as an issue, does not have traction. Second, politicians are reluctant to pass the burdens and trade-offs of climate policies onto the citizens. For instance, in the recent Indonesian election campaign, then Vice-Presidential candidate, Gibran Rakabuming Raka, was careful in committing to greater mitigation efforts, claiming that climate burdens should not fall on the public. Indonesia has trimmed its renewable energy targets while delaying its plans to introduce a carbon tax.⁸

The political economy complicates the push to net zero.

Regionally, there has been some momentum for larger energy projects. The ASEAN Power Grid (APG) has emerged as an area and project to fortify energy security.⁹ The APG aims to (i) physically connect the region; (ii) integrate energy markets; and (iii) build energy cooperation. The most relevant and important project is the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP), the first cross-border multilateral electricity trade within ASEAN. This experience exemplifies the opportunities and challenges that APG development could face. The LTMS-PIP project was organised through specialisation. Its governance mechanism set apart four working groups, and each country handled one aspect of the project. This gave all participating countries a sense of ownership. This structure did not undermine the sovereignty and security of the states and comported with ASEAN's principles. Moreover, sufficient political commitment existed for the project.¹⁰

⁸ Jayanty Nada Shofa, "Carbon Tax to Put Indonesia on Track Toward 2030 Climate Goal", *Jakarta Globe*, 21 September 2023, <https://jakartaglobe.id/business/carbon-tax-to-put-indonesia-on-track-toward-2030-climate-goal>.

⁹ Mirza Sadaqat Huda, Sharon Seah, and Qiu Jiahui, "Accelerating the ASEAN Power Grid 2.0: Lessons from the Lao PDR-Thailand-Malaysia-Singapore Power Integration Project (LTMS-PIP)", Policy Report, 2023, <https://www.iseas.edu.sg/wp-content/uploads/2023/11/2023-LTMS-PIP-Policy-Report-FA-V2-Online.pdf>.

¹⁰ Ibid.

Challenges also exist in terms of bridging infrastructure and harmonising accounting practices to calculate wheeling charges.

Yet, the project has lagged and faced technical limitations. Singapore and Malaysia have upgraded their infrastructure; however, differences remain. Natural disasters impact the power grid, an issue heightened by the increasing frequency of climate disasters across the region. Furthermore, power flows in the framework are unidirectional, between suppliers and recipients, with little room to trade electricity between states. Challenges also exist in terms of bridging infrastructure and harmonising accounting practices to calculate wheeling charges. There is resistance to developing formal dispute-resolution mechanisms. The APG's technical feasibility of the APG has been long established but its delay raises questions as to why it has not been developed to its full potential.¹¹

Instituting a just and viable energy transition is another important consideration in ASEAN. So far, the Just Energy Transition Partnerships (JETP) have a large demand.¹² The JETPs are financing mechanisms designed to help heavily coal-reliant economies transition to a more just and balanced energy matrix. The goal is to assist the specific climate pathways of countries as they move from coal production and consumption by tackling the sources and effects, which include creating alternate economic opportunities for those communities and individuals affected by the transition away from coal. The JETPs are important because they allow countries to move towards implementation with targeted assistance. The JETPs could be a pivotal climate finance vector, particularly for big emitters like Indonesia.

The ASEAN member countries are expanding climate engagements across forums and levels – bilateral, multilateral and minilateral. Some progress has occurred. The finance sector has laid the groundwork for sustainable finance by developing the ASEAN Taxonomy for Sustainable Finance.¹³ This system of classification defines the thresholds and criteria for economic activities to be considered

¹¹ Ibid.

¹² Irdina Batrisyia, and Indira Pradnyaswari, "Is JETP Making Progress in ASEAN Energy Transition?", ASEAN Centre for Energy, 5 July 2024, <https://aseanenergy.org/post/is-jetp-making-progress-in-asean-energy-transition/>.

¹³ ASEAN Taxonomy Board, "ASEAN Taxonomy for Sustainable Finance", *ASEAN Publication*, November 2021, <https://asean.org/book/asean-taxonomy-for-sustainable-finance/>.

environmental sustainability. It has prompted domestic taxonomies to be interoperable with ASEAN taxonomy. The operationalisation of the APG is another significant development in the region for the future decarbonisation of the energy sector. That said, the financial and technological burdens these measures and initiatives produce demands that financial and technical cooperation is further deepened within ASEAN to offset some of the impact. Moreover, there needs to be more institutionalised climate dialogue to ensure that Southeast Asian countries are not adversely affected by these and other climate-centric industrial policies.

All domestic and regional climate actions are shaped by the fact that existing global regimes may no longer be fit for the incumbent climate transition. The ASEAN member countries are looking beyond the UN Framework Convention on Climate Change's (UNFCCC) Conference of Parties (COP) to build and find support for their climate-related ambitions. Recent policies in the US and the European Union (EU) carry unintended consequences for the ASEAN member countries trading with them. For instance, the US Inflation Reduction Act (IRA) has provisions around certain percentages of manufacturing of components to take place in the US or like-minded countries.¹⁴ The EU's Carbon Border Adjustment Mechanism is another example which has important consequences for the region's trading partners as it engages in setting newer environmental standards with its trading partners.¹⁵ These policies pose problems in the Southeast Asian countries that have deep trade links to the US and Europe, engendering newer forms of protectionism. In this context, the Quad's efforts in the region on the provision of public goods and climate, in particular, could help.

These policies pose problems in the Southeast Asian countries that have deep trade links to the US and Europe, engendering newer forms of protectionism.

¹⁴ Kevin Chen Xian An, "Long Term Side Effects: Why Southeast Asia Should Be Cautious About Western Industrial Policy", *IDSS Paper*, RSIS, 21 September 2023, <https://www.rsis.edu.sg/wp-content/uploads/2023/09/IP23069.pdf>.

¹⁵ European Parliament, Council of the European Union, "Regulation (EU) 2023/956 of the European Parliament and of the Council of 10 May 2023 establishing a carbon border adjustment mechanism", *Official Journal of the European Union*, 16 May 2023, <https://eur-lex.europa.eu/eli/reg/2023/956/oj>.

How can the Quad Countries Work with ASEAN to Accelerate the Latter's Ongoing Climate Transition?

Japan

Japan wants to clinch regional partnerships to strengthen ties by providing support and undertaking joint initiatives.

Japan is a big emitter of greenhouse gases and is now making efforts to reach net-zero by 2050. Tokyo is taking proactive actions at climate negotiations and other international efforts to advance climate action. In Japan, climate change is being seen as a security issue as it aggravates security threats and disaster risks. Climate is being integrated with other policy agendas. Japan's revised national security strategy emphasised climate change and highlighted issues relating to energy security, resources for net-zero targets, regional cooperation for climate action, and building resilience. The security lens on climate change is also a result of the realities of the Indo-Pacific. Japan wants to clinch regional partnerships to strengthen ties by providing support and undertaking joint initiatives. Such joint ventures are critical for Japan because it does not have sufficient energy reserves.

At COP28, Japan published the assistance package for the implementation of the Paris Agreement and highlighted three gaps: first, the ambition gap highlights a lack in ambition for climate mitigation and insufficiency of current levels of action for existing targets; second, the adaptation gap which refers to gaps in implementation which require global collective efforts; and lastly, the implementation gap.¹⁶ For Tokyo, the COP remains an important platform for driving climate action but it tends to stagnate because of the divide in the Global North and South. Going beyond the COP is becoming important for most countries to realise their climate goals.

Japan has been expanding its policy outside of the UNFCCC framework. The Quad is one such mechanism. Japan is also trying to

¹⁶ Ministry of Environment, Government of Japan, "Announcement of the 'Assistance Package to Promote Investments for Global Actions Toward the Achievement of the Paris Agreement Goals'", *Press Release*, 9 December 2023, https://www.env.go.jp/en/press/press_02190.html.

expand its ties with the Southeast Asian countries to provide support for climate action. ASEAN is an important partner for Japan to secure energy and critical minerals supplies. Japan is trying to support the climate transitions of vulnerable countries. This could also be seen under the overarching targets of the Paris Agreement. This situation has not seen much progress over the last few decades. Japan wants to provide not just financial support to the developing countries but broad-based support across the climate policy implementation stage.

ASEAN is an important partner for Japan to secure energy and critical minerals supplies.

Through the Quad, Japan can work to change the broader regional discourse on climate action that is mired in numbers and projections. These figures may not always be accurate, and, as a result, countries cannot assess and calibrate climate action without the right tools to measure climate change. Instead of using gross domestic product (GDP) or income per capita to ascribe climate action, it could be useful to broaden indicators that allow for a more comprehensive understanding of a country's wealth and how that can support climate action. The inclusive wealth paradigm measures a country's wealth by carrying out a comprehensive analysis of its productive base. This paradigm incorporates all elements from which human well-being is derived, including physical capital, human capital, and natural capital.¹⁷ Physical capital refers to manufactured capital like roads, buildings and machinery; human capital incorporates features such as knowledge, aptitude, and skills; and natural capital includes assets such as sub-soil resources, ecosystems and the atmosphere. To effectively tackle climate change, natural capital needs to be included as a metric and indicator. This addition will complement existing GDP measures and could incentivise private firms to invest in biodiversity and the protection of natural capital. Using the inclusive wealth paradigm for measuring progress will also serve the Quad well.

¹⁷ Shunsuke Managi and Pushpam Kumar, "Inclusive Wealth Report 2018 Measuring Progress Towards Sustainability", Routledge, 2018, <https://doi.org/10.4324/9781351002080>.

Australia

Australia has generally lagged when it comes to climate mitigation largely due to domestic inaction and feeble international climate commitments. This lacklustre climate attitude has been perplexing, given Australia's risk of climate-related disasters including wildfires, extreme heat, drought, flooding and biodiversity loss. Australia's national climate positions have also been subject to political pressures, and vested interests tied to the commodities sector, media and political actors that have long throttled meaningful climate action. Through the Paris Agreement, Australia agreed to reduce its emissions to 43 per cent below the 2005 levels by 2030.¹⁸

Australia hopes to emerge as a renewable energy superpower and its domestic climate ambitions are reflective of that goal with a growing emphasis on increasing solar and wind capacities.

That said, Australia continues to have the highest per capita carbon emissions in the Organisation for Economic Co-operation and Development, it is a major exporter of coal, and continues to rely on fossil fuels for electricity generation without an adequate plan to move toward renewables. The incoming Australian government in 2022 has shifted the pendulum on climate. The Climate Change Act (2022) outlines Australia's greenhouse gas emissions reduction targets of a 43 per cent reduction from 2005 levels by 2030 and net zero by 2050.¹⁹ Australia hopes to emerge as a renewable energy superpower and its domestic climate ambitions are reflective of that goal with a growing emphasis on increasing solar and wind capacities. This undertaking is a major process considering Australia's reliance on coal as a fuel and as a top export good.

Decarbonisation is vital, given that no sector is currently on the trajectory to meet its net zero goals. In Australia, this transformation requires the right policies, human capital and an appropriate regulatory environment. A critical need is climate finance; funding for climate action remains limited. There is an urgent need to mobilise public financial institutions to de-risk projects and bring in private

¹⁸ Australian Government, "Australia's Nationally Determined Contributions", Communication, 2022, <https://unfccc.int/sites/default/files/NDC/2022-06/Australias%20NDC%20June%202022%20Update%20%283%29.pdf>.

¹⁹ Ibid.

capital. In Australia, public green banks have proven effective.²⁰ These banks have accelerated investments for the net zero transition and mobilised private investments into developing low-carbon infrastructure. So far, Australia's green bank, the Clean Energy Finance Corporation (CEFC), has invested in scaling up solar projects. It has offered debt finance for 10 major projects which were funded through the Australian Renewable Energy Agency. The CEFC also financed a small-scale housing project consisting of energy-efficient units.²¹ This move demonstrated to private players that environmentally driven projects can be profitable. Interestingly, energy-efficient housing has reduced energy costs for residents.

These banks have accelerated investments for the net zero transition and mobilised private investments into developing low-carbon infrastructure.

Australia has the largest number of green banks, and this mode of finance could be of benefit to the region writ large. There are very few green banks in ASEAN which presents an opportunity for cooperation between the Quad and ASEAN. As countries scale up their plans for renewable energy capacity, green banks can be instrumental in driving financing objectives. The Quad can contribute to this by extending support in building a network of green banks in the region, instead of developing its own green financing mechanisms.

India

Climate change has become a pivotal global issue for India. India has historically emphasised equity and historical emissions when it comes to climate mitigation. This view is changing and climate change is increasingly occupying a high priority in India's foreign and economic policies. India has committed to reaching net zero by 2070 and has announced some interim targets for 2030, including reducing the emissions intensity of its GDP by more than 45 per cent by 2030, compared to the 2005 level, up from the Paris Agreement target of 33-35 per cent; increasing the share of non-fossil fuel based electricity

²⁰ Saurabh Trivedi, "Energising Australia's Green Bank", Institute for Energy Economics and Financial Analysis, 28 February 2024, <https://ieefa.org/resources/energising-australias-green-bank>.

²¹ Lyons, Michelle, and Lee Victoria White, "How Green Banks can create multiple types of value in the transition to net zero emissions", *Australian Journal of Public Administration*, 2023, <https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-8500.12623>.

generation to 50 per cent by 2030 based on achieving 450 gigawatts of renewable energy capacity, and doubling down on afforestation of creating 2.5-3 gigatonnes-carbon dioxide (CO₂) equivalent additional forest sink by 2030.²²

Government interventions, as a result, will have to be coordinated and mutually reinforcing working with state governments, civil society, and the private sector.

India's decarbonisation strategy involves a mix of demand and supply-side policies to reduce energy use and carbon emissions. This policy mix includes increasing focus on energy efficiency, boosting electrification by transitioning away from coal and gas to electricity, developing green hydrogen, expanding forest cover to increase natural carbon sinks, and developing CO₂ capture and sequestration techniques to make them viable. These policy shifts will involve multiple steps and layers but are necessary to drive the transition forward and also given the potentially calamitous effects of climate change on India including mass human displacement, loss of critical infrastructure, reduced labour productivity, rising inequality and lower agricultural yields. Government interventions, as a result, will have to be coordinated and mutually reinforcing working with state governments, civil society, and the private sector. Policies will likely include increased public spending and investment, greater and more sophisticated energy regulation, optimisation of prevailing subsidies that increase fossil fuels use, and creating incentives for the private sector to invest in driving climate action that generates profits.

India, through the Quad, can support ASEAN's energy transition by serving as an example of how it directs and steers its complex climate transition. Renewable energy infrastructure is an area for potential collaboration where the deployment of deep-sea cables can be explored between India and ASEAN to expand India's power grids to Southeast Asia. Through its historic G20 presidency in 2023, India put forward a vision to establish interconnected grids and integrate regional power systems. This is a vision and desire that is shared by the ASEAN member countries investing in developing an ASEAN power grid. The Green Grids Initiative, widely endorsed by many countries,

²² Vibhuti Garg, "Behind India's Updated Climate Pledges", Institute for Energy Economics and Financial Analysis, 9 August 2022, <https://ieefa.org/resources/behind-indias-updated-climate-pledges>.

also aims to facilitate this initiative by generating investments in constructing infrastructure, especially renewable energy grids, which will require both public and private sectors crowding in financing to support these projects.²³ To drive such efforts, India could use its position in the Quad to build infrastructure by securing funding from all partner countries. India has also been among the countries calling for debt relief for the developing countries to ensure they have more fiscal room to manoeuvre their growth towards a green, low-carbon economy.

²³ William James, Simon Jessop, and Ross Kerber, "COP26: What is the UK and India's 'Green Grids Initiative'?" World Economic Forum, 3 November 2021, <https://www.weforum.org/agenda/2021/11/uk-india-cop-26-green-grids-clean-energy/>.

Critical Minerals

Critical minerals are essential for the ongoing global energy transition and the shift from a fossil fuel-intensive energy system to a minerals-focused sustainable energy matrix that supports clean electricity generation. Demand is rising for a wide range of critical minerals like lithium, cobalt, nickel, granite, copper, zinc, and other rare earths that are central to producing clean energy. The widespread expansion of electric vehicles and batteries, as well as renewable energy technologies like wind turbines are driving the demand for critical minerals. As a result, governments across the Indo-Pacific are trying to access and secure the mining, processing and manufacturing of products from critical minerals to meet the demand to reduce carbon emissions and address climate change.²⁴

Countries are drafting national policies and engaging in collaborative efforts to secure supplies of critical minerals.

Concurrently, countries that have large reserves of critical minerals are using policies to protect and leverage critical minerals for sovereign use and benefit. This scramble for critical minerals is unfolding in a fluid geopolitical landscape where the geopolitics of clean energy is intersecting and clashing with intense security and economic competition that's compounded by exogenous shocks like the pandemic, Russia's Ukraine war, supply chain crises, and political instability. Critically, critical minerals excavation, processing and manufacturing are now a part of the US-China rivalry that affects all Indo-Pacific countries. Countries are drafting national policies and engaging in collaborative efforts to secure supplies of critical minerals.

ASEAN

The ongoing energy transition is rapidly unfolding in Southeast Asia. The transition hinges on reliable and steady supply of critical minerals for the production of clean energy technologies. This supply, however, is constrained by several factors that appear intractable, including the

²⁴ Sophia Kalantzakos, "Critical Minerals and the New Geopolitics", *Project Syndicate*, 2 October 2020, <https://www.project-syndicate.org/commentary/china-critical-minerals-new-geopolitics-by-sophia-kalantzakos-2020-10>.

location of some critical minerals in a few countries, especially China, which affects and complicates the geopolitics of obtaining those minerals.²⁵ To improve and increase Southeast Asia's access to these minerals will require greater public and private investments and unimpeded access to existing and changing supply chains. The ASEAN member states like Indonesia play an important role in the critical minerals sector and supply chains; in fact, metals and mining output accounts for a significant share of ASEAN's exports. The metals and mining sectors also contribute greatly to ASEAN's GDP. Mining and processing capabilities are crucial across the region. However, there is a lack of support from the host governments to develop non-China-sourced rare earth and critical minerals mining capacity. This situation is compounded by China's competitiveness in this domain. Countries need to align incentives across state and sub-state levels, especially in sectors like mining. Export controls and restrictions, particularly in Malaysia and Indonesia, also serve as barriers. Indonesia has banned the export of nickel ore in order to develop domestic capacity to process the mineral. Malaysia also proposed a ban on the exports of rare earth elements in order to avoid exploitation and loss of resources, guaranteeing maximum returns.²⁶ Unfortunately, there is no clear or set definition of what minerals are critical across ASEAN; however, there appears to be more focus on certain commodities from a strategic and refining and manufacturing perspective.

Countries need to align incentives across state and sub-state levels, especially in sectors like mining.

In most regional discussions on critical minerals, supply chains are the critical factor. There are several trends affecting the reshaping of supply chains in Southeast Asia. First, diversification is driven by regulatory and geopolitical considerations. Geopolitical competition between the US and China, the 'de-risking' discourse, and the experiences of countries during the pandemic are also driving diversification. Second, countries in Southeast Asia are increasingly becoming attractive to investors, and they are taking active steps

²⁵ China currently extracts 65 per cent and processes 85 per cent of the world's rare earth elements. See: Sharon Seah and Mirza Sadaqat Huda, "Enhancing ASEAN's Role in Critical Mineral Supply Chains", ISEAS – Yusof Ishak Institute, February 2024, https://www.iseas.edu.sg/wp-content/uploads/2024/01/TRS3_24.pdf.

²⁶ Norman Goh, "Malaysia Plans to Ban Exports of Rare Earth Minerals", *Nikkei Asia*, 11 September 2023, <https://asia.nikkei.com/Economy/Trade/Malaysia-plans-to-ban-exports-of-rare-earth-minerals>.

Decisions taken to move production bases can take years to materialise.

to attract investments. This makes foreign direct investment flows more diversified. Third, while the incentives and drivers for the reshaping of supply chains are palpable, the process will be more gradual and piecemeal. Currently, China remains the sole source of several upstream and immediate goods; simultaneously, the cost of diversification is high and disruptive to operations. Decisions taken to move production bases can take years to materialise. Finally, the trade-off between security and efficiency is leaning towards security.

However, it is unlikely China will be replaced as the manufacturing powerhouse in Asia. In the current energy transition, China dominates several critical industries, such as batteries, electric vehicles and photovoltaic modules. Critical minerals are vital for all these industries and the wider energy transition. Countries are strategically investing in building critical minerals supply chains and capacities. To this effect, Southeast Asia's ties with the other parts of Asia, Africa and Latin America are expanding. For the Global South, Southeast Asian countries like Indonesia, Vietnam, Philippines, and Myanmar hold important places in critical minerals supply chains with their reserves and processing capacity.

How can the Quad Countries Work with ASEAN to Secure Necessary Critical Minerals for the Latter's Climate Transition?

India

India hopes to dramatically expand its renewable energy capacity to reduce fossil fuel emissions and reach net zero ambitions by 2070.²⁷ Ongoing efforts to strengthen self-reliance in terms of energy require generating sufficient investments and creating incentives for domestic manufacturers while trying to advance economic development. However, these goals are dependent on a reliable and sustainable supply of critical minerals. Access to critical minerals is vital for India's development and security. India is 100 per cent reliant on imports for

²⁷ "India is committed to achieve the Net Zero emissions target by 2070 as announced by PM Modi, says Dr Jitendra Singh", *Press Information Bureau*, 28 September 2023, <https://www.pib.gov.in/Pressreleaseshare.aspx?PRID=1961797>.

several critical minerals; however, there are now policy efforts toward securing supply chains and developing incumbent capacities in this domain. Domestic regulatory efforts are underway to boost domestic extraction and processing capacity. A new Exploration Licence system has been introduced for reconnaissance and prospecting of critical minerals. In 2023, the government put 20 critical and strategic minerals blocks for auction.²⁸

Geopolitically, India's critical minerals strategy is greatly influenced by its rivalry with China and China's stranglehold over the critical mineral supply chain. This competition is driving India to work with the US, Australia, the EU, Argentina, Chile, the Quad and the G20 to ensure it has access to reliable supply chains for critical minerals. India has joined the US-led Minerals Security Partnership (MSP) – this group includes all the Quad members. India and Australia have a Critical Minerals Investment Partnership focused on lithium and cobalt. Multilaterally, India is seeking external partnerships to shore up capacity in this domain. Khanij Bidesh India Limited (KABIL) has been established to identify strategic critical mineral assets overseas. KABIL has plans to invest US\$25 million (S\$3.25 million) over five years for lithium exploration projects in Argentina.²⁹

This competition is driving India to work with the US, Australia, the EU, Argentina, Chile, the Quad and the G20 to ensure it has access to reliable supply chains for critical minerals.

India and the Quad can work with ASEAN to enhance mutual access to critical minerals.³⁰ The Quad countries have expertise in mining and processing of select critical minerals which can be shared with the ASEAN member countries. The Quad can also invest in mineral exploration in ASEAN, particularly given that exploration investments have fallen from US\$400 billion (S\$520 billion) to under US\$300 billion (S\$ 390 billion) between 2016 and 2020. The Quad countries like India can also mutually gain by drawing on expertise from countries like

²⁸ "Critical mineral, offshore mineral blocks set for auction in 2024", *The Economic Times*, 28 December 2023, <https://m.economictimes.com/industry/indl-goods/svs/metals-mining/critical-mineral-offshore-mineral-blocks-set-for-auction-in-2024/articleshow/106340775.cms>.

²⁹ "India's state-owned KABIL signs \$24 mln lithium exploration deal in Argentina", *Reuters*, 15 January 2024, <https://www.reuters.com/markets/commodities/indias-state-owned-kabil-signs-24-mln-lithium-exploration-deal-argentina-2024-01-15/>.

³⁰ Rajesh Chadha and Ganesh Sivamani, "Quad-ASEAN Technology Cooperation for Critical Minerals Supply Chains", Centre for Social and Economic Progress, Blog, 12 January 2024, <https://csep.org/blog/quad-asean-technology-cooperation-for-critical-minerals-supply-chains/>.

Indonesia in nickel mining. Furthermore, the Quad Investors Network may facilitate investments in strategic sectors like critical minerals, clean energy, and semiconductors.

Australia

The processing of the minerals converts them into higher value commodities, and China's well-developed processing capacity allows it to gain economic benefits from this process.

Australia is a mineral-rich country with poor processing capability. The mined minerals are sent overseas for processing. Australia is a major source of lithium globally, but nearly all of Australia's lithium is processed in China. The processing of the minerals converts them into higher value commodities, and China's well-developed processing capacity allows it to gain economic benefits from this process. To remedy this situation, Australia is drafting considerable efforts to catch up in the processing of minerals. This 'catch-up' is further necessitated by the desire to diversify supply chains and reduce dependence on a single country – China. In 2010, China weaponised its processing capabilities against Japan which served as forewarning for other countries.

Within the Quad, critical mineral value chains have led to cooperation and competition, given that Quad countries have the desire to capture the same value addition. The US and Australia provide an instructive example here. The US' new industrial policy, the IRA, for instance, incentivises projects which are geared towards a low-carbon future. These incentives operate at the expense of Australia's capacity to undertake a green transition since capital will move towards the US.³¹ Such financial incentives have already resulted in Australian businesses investing in the US and it has also led to brain drain – with skilled labour moving overseas.

The Quad's focus on critical minerals presents interesting opportunities and challenges. In the critical minerals domain, the Quad countries

³¹ Hayley Channer, and Georgia Edmonstone, "US Industrial Policy Explained and What it Means for American Allies and Partners", United States Studies Centre, 6 June 2023, <https://www.ussc.edu.au/us-industrial-policy-explained-and-what-it-means-for-american-allies-and-partners>.

are competing in the same area. This brings into focus the potential framework of cooperation and how the benefits of collaboration on critical minerals supply chain will be disbursed. One successful example of this cooperation is between Lynas, an Australian mining company, and Japan. Japan's investment in Lynas is helping it secure its supply of rare earths.³² The Quad's focus on critical minerals is helped by its comparative strengths and overlapping interests in regional public goods, technology, and security.

This avenue of cooperation, however, does not serve Australia's interests. The Quad is currently at a premature stage, and bilateral cooperation is better suited to Australia's needs and interests. To develop its mineral processing capacity, Australia seeks investment from the ASEAN member states. As a result, Australia could potentially partner with Indonesia on the batteries supply chain and Malaysia on rare earths supply chain. This cooperation is, however, not devoid of challenges such as environmental issues, competition, corruption and following the rule of law.

The Quad is currently at a premature stage, and bilateral cooperation is better suited to Australia's needs and interests.

The United States

The US' deep reliance on raw and processed critical minerals from overseas is pressing Washington to devise a strategy to secure adequate supplies. Pressures to do so have only increased with the demand spurred partly by the IRA's passing and the ongoing domestic clean energy transition. The US' strategic outlook on critical minerals is driven by the desire to erode China's dominance and ramp up efforts to rebuild the domestic manufacturing base. The motivation is to develop a 'Made in America' supply chain with like-minded partners. The US is exploring several critical minerals-focused partnerships. In June 2022, the US and its G7 partners launched the Partnership for Global Infrastructure and Investment to build clean energy supply chains. Washington also signed the MSP to produce, process and recycle critical minerals. Yet, these efforts fall short in Asia. The US

³² "Securing Supply of Heavy Rare Earths to Japan with Additional Investment to Lynas", Sojitz Corporation, 7 March 2023, <https://www.sojitz.com/en/news/article/20230307.html>.

does not have free trade agreements (FTAs) in the ASEAN region which can enable cooperation in critical minerals. The only ASEAN member state with an FTA with the US is Singapore. Tax credits from FTAs and subsidies from the IRA can benefit the US' partner countries in Southeast Asia, though that route can be self-defeating and limiting. Even within the MSP, the US has selective partnerships in this area. However, there are some frameworks which can be leveraged for future coordination.

The Quad's approach to China oscillates between implicit and explicit which might make it difficult for the ASEAN member states to cooperate with the group, given their deep political and economic links to China.

One option for the US to deepen critical minerals cooperation with Asian partners is to mainstream deals through ongoing defence partnerships. The Australia-US bilateral is one such framework. The close partnership between the two countries furthered by the AUKUS (Australia-United Kingdom [UK]-US) deal and the recent National Defence Authorisation Act of 2024 provides a space to deepen cooperation. The US and India have also identified an ambitious roadmap to boost the clean energy supply chain with US\$1 billion (S\$103 billion) funding.³³ This is crucial from a critical minerals perspective because these minerals are used in the production of batteries and permanent magnets and will be an important component of this roadmap. Further, the Quad Plus framework can be leveraged to engage with the ASEAN member states. However, China represents an impediment to ASEAN-Quad cooperation. The Quad's approach to China oscillates between implicit and explicit which might make it difficult for the ASEAN member states to cooperate with the group, given their deep political and economic links to China.

Japan

Japan has experienced crises when faced with shortages of critical minerals. In 2010, a Chinese trawler collided with two Japanese vessels in the East China Sea. In retaliation to Tokyo's arrest of the vessel's captain, China stopped exporting rare earths to Japan when

³³ "Roadmap For U.S.-India Initiative to Build Safe and Secure Global Clean Energy Supply Chains", The White House, 21 September 2024, <https://www.whitehouse.gov/briefing-room/statements-releases/2024/09/21/roadmap-for-u-s-india-initiative-to-build-safe-and-secure-global-clean-energy-supply-chains/>.

Tokyo relied on Beijing for 90 per cent of such materials. Tokyo has experienced the effects of the weaponisation of critical inputs, especially minerals, that has altered its outlook on the issue. The demand and necessity of critical minerals has also increased now with the deployment of clean energy technologies. Mineral demand is likely to rise by four times by 2040 to meet climate goals.

Countries are now keen to build resilient supply chains for critical minerals. Japan plays a critical role here as one of the leading countries in processing selenium (20.3 per cent), beryllium (16.9 per cent), nickel (8.6 per cent) and indium (8.2 per cent). These are minerals that help manufacture batteries, wind turbines, and semiconductors. Japan has no mines for rare metals and is reliant on imports but problematically critical minerals are concentrated in a few countries which complicates extraction and processing. This scenario increases potential supply disruptions. Japan aims to enhance security of critical minerals through measures aimed at diversification of mining and refining processes while securing upstream resources. Japan has set a target for establishing a domestic battery manufacturing base of 150 gigawatt hours by 2030.

Japan aims to enhance security of critical minerals through measures aimed at diversification of mining and refining processes while securing upstream resources.

Diplomatically, Japan is keen to work with other countries to secure necessary critical minerals. Through the G7, Japan has expressed a desire to work with other 'like-minded countries' to bolster its economic security, particularly with respect to critical minerals. The G7 countries have pledged US\$13 billion (S\$17 billion) for domestic and international critical mineral projects under the Five-Point Plan for Critical Minerals Security.³⁴ Japan and ASEAN have established the ASEAN-Japan Resource Circulation Partnerships on Electronic Waste (E-waste) and Critical Minerals under the Japan-ASEAN Environment Ministers' Partnership. Japan promotes international partnerships in critical minerals and in the recycling of e-waste. Since 2022, Japan is also a member of the MSP alongside the US, Canada, Australia, Finland, France, Germany, South Korea, Sweden, the UK and the

³⁴ METI, Japan, "Annex to the Climate, Energy and Environment Ministers' Communiqué Five-Point Plan for Critical Minerals Security", <https://www.meti.go.jp/information/g7hirosima/energy/pdf/Annex005.pdf>.

EU. The goal of this grouping is to “ensure that critical minerals are produced, processed, and recycled in a manner that supports the ability of countries to realise the full economic development benefit of their geological endowments.”³⁵

³⁵ “Minerals Security Partnership”, Media Note, U.S. Department of State, 14 June 2022, <https://www.state.gov/minerals-security-partnership-june-14-2022/>.

Conclusion

The Quad's resolve and purpose are heightened in an era where the global energy transition is clashing with intense security competition in Asia. The logic of both processes clash and potentially undermine domestic objectives in key countries, particularly when it comes to climate change and accessing necessary critical minerals. For the Southeast Asian countries, decarbonising will require working with external partners across the Indo-Pacific, including China. China's critical mineral dominance in Southeast Asia cannot be ignored or wished away. If security logics continue to influence how countries decarbonise, then it might undermine how countries decarbonise. The key question is how will US-China tensions affect ASEAN and the Quad with respect to the global energy transition?

For the Southeast Asian countries, decarbonising will require working with external partners across the Indo-Pacific, including China.

The Quad will also have to contend with resurgent nationalism across Asia. Unquestionably, nationalism still exists within the Quad and ASEAN and it could affect how these two entities cooperate with each other on issues like climate change. Industrial policies are rampant across the Indo-Pacific, particularly with respect to the climate transition as both the US and China look to restructure their domestic economies around climate action and protection. Here, China's subsidies and how they are allocated on issues like electric vehicles already give it an edge that they are increasingly weaponising. American policies, especially legislations like the IRA and the CHIPS Act, are complicating how the Asian countries acquire the capital and technology required to drive their energy transitions. All the Quad countries are both cooperating and competing with the US on energy security and climate change; that said, competition is a key dynamic to deal with and overcome to exploit and harness clean energy opportunities.

The Quad will be subject to the vagaries of both trends: nationalism and security competition. However, there is an opportunity and space for the Quad countries to collaborate on public goods issues like climate and critical minerals. There are options highlighted in

this report: financing like green banks; supply chains; power grids and renewable energy infrastructures; focus on human capital and natural capital; and cooperation on rare earths and batteries. To work together and clinch these opportunities, however, humility is needed amongst the Quad members during their collective and iterative interactions with ASEAN. The Quad could be constrained by the national interests of its members and how they prefer to engage; that some of them do not have robust economic and trade relationships with each other is an issue and could affect how they use the Quad to mainstream cooperation on economic and climate issues. Also, that some Quad members have less institutionalised economic and trade relationships with ASEAN member states could be a problem.

How the Quad deals with this fundamental issue could determine its utility and importance.

That said, geopolitical tensions will generate opportunities for the Quad to deepen its consultations, coordination, and cooperation on functional issues like climate change and critical minerals that make it valuable and relevant for the ASEAN member countries. The Quad's agenda and ongoing consultations through its working groups point to a packed agenda that requires constant maintenance without an institutional anchor while trying to stave off political shifts in all four countries. How the Quad deals with this fundamental issue could determine its utility and importance.

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