VOL
59

The next key player? Assessing ASEAN's role in global critical minerals supply chains

Dr Pia Dannhauer

Perth USAsia Centre
INDO-PACIFIC STRATEGY

INDO-PACIFIC ANALYSIS BRIEFS 2025

INDO-PACIFIC ANALYSIS BRIEFS 2025

The Perth USAsia Centre's Indo-Pacific Analysis Briefs seek to provide perceptive and contemporary insights from across the region. The series features leading analysts from Asia, Australia and the US to deliver up-to-the-minute assessments on issues of national and regional importance. This series will shine a light on the issues that remain critically important to Australia and the Indo-Pacific at a time when global events may otherwise dominate the news cycle.

AUTHOR
Dr Pia Dannhauer
Senior Research Fellow

Dr Pia Dannhauer is a Senior Research Fellow at the Perth USAsia Centre, where she worked as a Research Associate (Southeast Asia) from 2023-2025.

Pia's PhD thesis on Indonesia's leadership in ASEAN was accepted at Griffith University in 2023.

An English, German and Indonesian speaker, she previously worked for the Asia Pacific Research and Advice Network – an internal think tank that supports EU decision makers.

Pia holds a Bachelor's degree in International Studies, with a focus on South and Southeast Asia, from Leiden University in the Netherlands, as well as a joint Master's in International Relations from three German universities.

Introduction

Amid global efforts to "de-risk" critical mineral (CM) supply chains and reduce dependencies on China, Southeast Asia is rapidly emerging as a key partner. From an Australia-Korea joint venture on rare earth magnet production in Malaysia, to US technical assistance in developing the Philippines' CM sector, and support for Indonesia's electric vehicle (EV) ambitions in the Canada-Indonesia Comprehensive Economic Partnership Agreement, the region is playing an increasingly significant role.

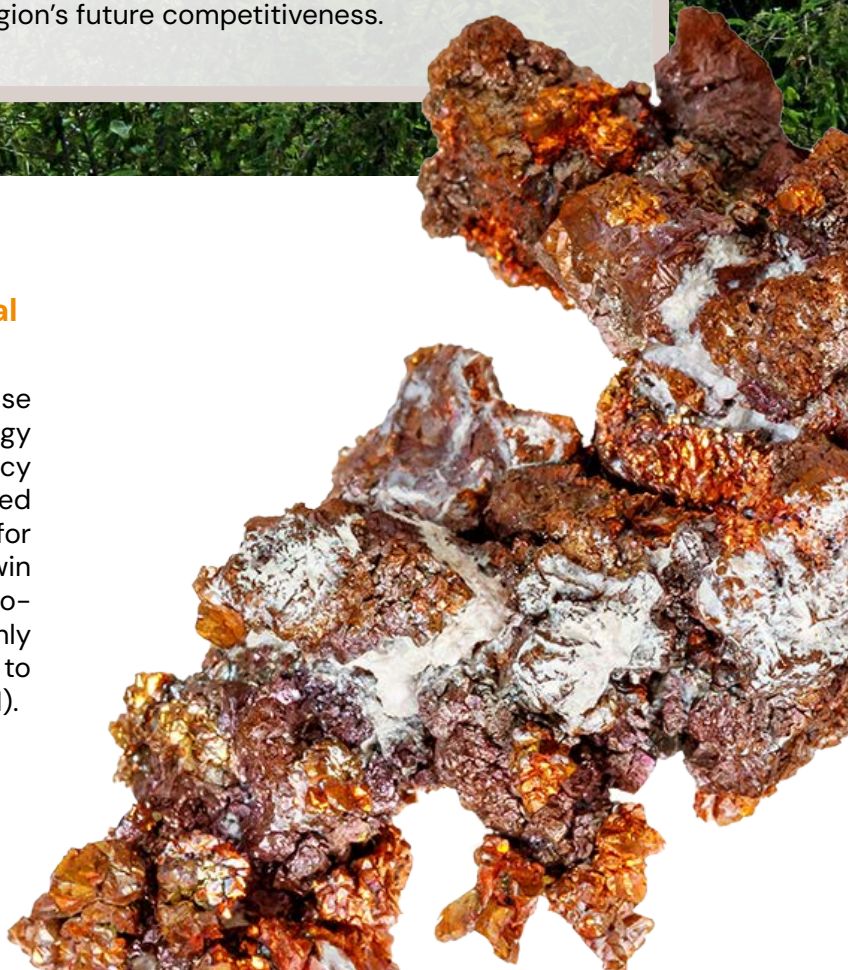
As important suppliers and growing consumers of CM, members of the Association of Southeast Asian Nations (ASEAN) share an interest in resilient and secure CM supply. In October 2025, ASEAN adopted a long-term Minerals Development Vision aiming to position Southeast Asia as a "leading destination for minerals investment, including in critical minerals" by 2045. While ASEAN has stepped up efforts to position itself as a strategic actor in this space in recent years, the lack of alignment among its members as well as hardening geopolitics and growing sustainability concerns pose significant hurdles to realising the grouping's ambitious vision.

KEY MESSAGES

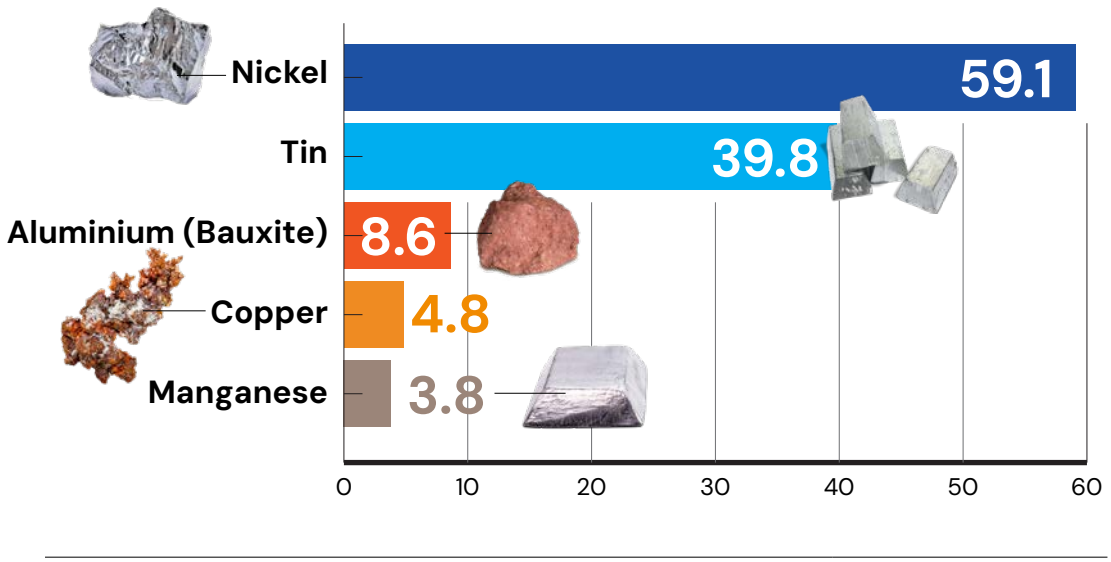
1. The Association of Southeast Asian Nations (ASEAN) has increasingly come to view minerals not only as a development opportunity but also as strategic assets, particularly in light of the role of critical minerals in the twin digital and energy transitions.
2. Significant challenges continue to constrain ASEAN's ambitions to become an important stakeholder in global supply and value chains.
3. The growing bifurcation of global supply chains is testing Southeast Asia's longstanding policy of non-alignment.
4. Limited alignment and regulatory fragmentation within ASEAN undermine the implementation of regional goals and deter much-needed investment.
5. International expectations regarding social and environmental sustainability pose a significant threat to the region's future competitiveness.

Southeast Asia's role in global critical mineral supply chains

Global demand for CM is expected to rise sharply as countries accelerate their energy and digital transitions. In the current policy setting, demand for lithium alone is projected to increase fivefold by 2040, while demand for graphite and nickel is set to double.[1] These twin transitions—energy and digital—and the geo-economic dynamics driving them are highly relevant to Southeast Asia, a region home to diverse and substantial CM resources (Box 1).



BOX 1 **ASEAN share of global production of select metals (2022, in per cent)**



Source: USGS via AMCAP-IV 2026-2030 (2025)[2]

Rising global demand for CM resources presents significant economic opportunities for Southeast Asia. Two-way minerals trade (within ASEAN and with external partners) grew by 9 per cent in 2018 compared to the previous year, valued at almost US$250 billion and accounting for 8.9 per cent of ASEAN's total trade.[3] However, the region's stake in these resources is not limited to their export value. Countries in the region are increasingly leveraging their abundant resources to move up the global value chain and capture economic benefits of growing global demand for mineral resources.

Given limited resources to subsidise the sector, mineral-rich ASEAN countries have instead turned to industrial policies like export bans, local content requirements and investment incentives tied to in-country processing and manufacturing.[4]

At the same time, ASEAN is becoming a growing consumer of these resources. Southeast Asia is projected to become the world's fourth-largest economy by 2040 and is on track to account for 25 per cent of global energy demand within the next decade. Renewable energy will be central to meeting this growing demand while achieving emission reduction targets.[5] Against this backdrop, the region is set to become a growing consumer of these minerals, relying on secure supply to support domestic industries. Vietnam and Malaysia, for instance, have rapidly scaled up solar panel production—growing from 32 MW to 1,787 MW and 5 MW to 16,660 MW, respectively, between 2011 and 2021.[6] Thailand, the region's largest automotive producer, has successfully entered the EV sector, while other countries are actively developing integrated EV supply chains.

ASEAN cooperation in critical minerals

Recognizing their shared strategic interests and complementary resource strengths, Southeast Asian countries have turned to ASEAN as a platform for collaboration on CM, aiming to strengthen regional supply chains, align policies, and enhance their collective global competitiveness. Initial ASEAN cooperation on minerals was primarily approached through the lens of economic development, given the considerable economic potential of the sector. Member states came together as early as 2005 to coordinate their approaches and have consolidated their cooperation through a series of ASEAN Minerals Cooperation Action Plans (AMCAP).

In October 2025, the ASEAN Ministerial Meeting on Minerals (AMMin) adopted two new frameworks to guide the implementation of regional cooperation plans. The ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026–2030 outlines action items across four program areas: trade and investment, sustainable CM development, capacity-building, and establishing an ASEAN Minerals Information Database. It also sets out to implement a new monitoring and evaluation system to measure the impact and outcomes of ASEAN activities.[7] AMCAP-IV aims to support the long-term ASEAN Minerals Development Vision (AMDV), which envisions ASEAN as "a leading destination for minerals investment, including in critical minerals" by 2045.[8]

Over the past few years, ASEAN has increasingly come to view minerals not only as a development opportunity but also as strategic assets, particularly in light of the role CMs play in the twin digital and energy transitions.[9]

This recognition has spurred initiatives such as plans for a regional EV ecosystem and has been formalised in the most recent ASEAN frameworks. For example, the ASEAN Economic Community (AEC) Strategic Plan 2026-2030 identifies technological transformation and climate change impacts as "megatrends" that will shape ASEAN's future economic integration.[10] "Embracing digital transformation and decarbonisation" is also included as one of the foundational principles of the AMDV.[11]

FIGURE 1: **Summary of the ASEAN Minerals Development Vision (AMDV)**

VISION	ASEAN as a leading destination for minerals investment, including in critical minerals	
STRATEGY	Minerals sector as pillar of the ASEAN Economic Community	Sound governance and leadership in minerals development
ACTION	• Promote investment, resource-efficient production, and trade while supporting the growth of ASEAN-based companies. • Develop a vertically integrated supply chain. • Support artisanal and small-scale miners. • Leverage diverse financing and risk mitigation mechanisms. • Forge strategic partnerships and cross-sectoral collaboration.	• Strengthen governance and engage industry stakeholders in the minerals sector. • Pursue sustainable minerals development and drive responsible production. • Engage with relevant stakeholders and empower communities.
FOUNDATION		
Deliver high-quality data	Market to investors	Develop human capital	Embrace digital transformation and decarbonisation

By author, Adapted from: ASEAN Minerals Development Vision (2025)[12]

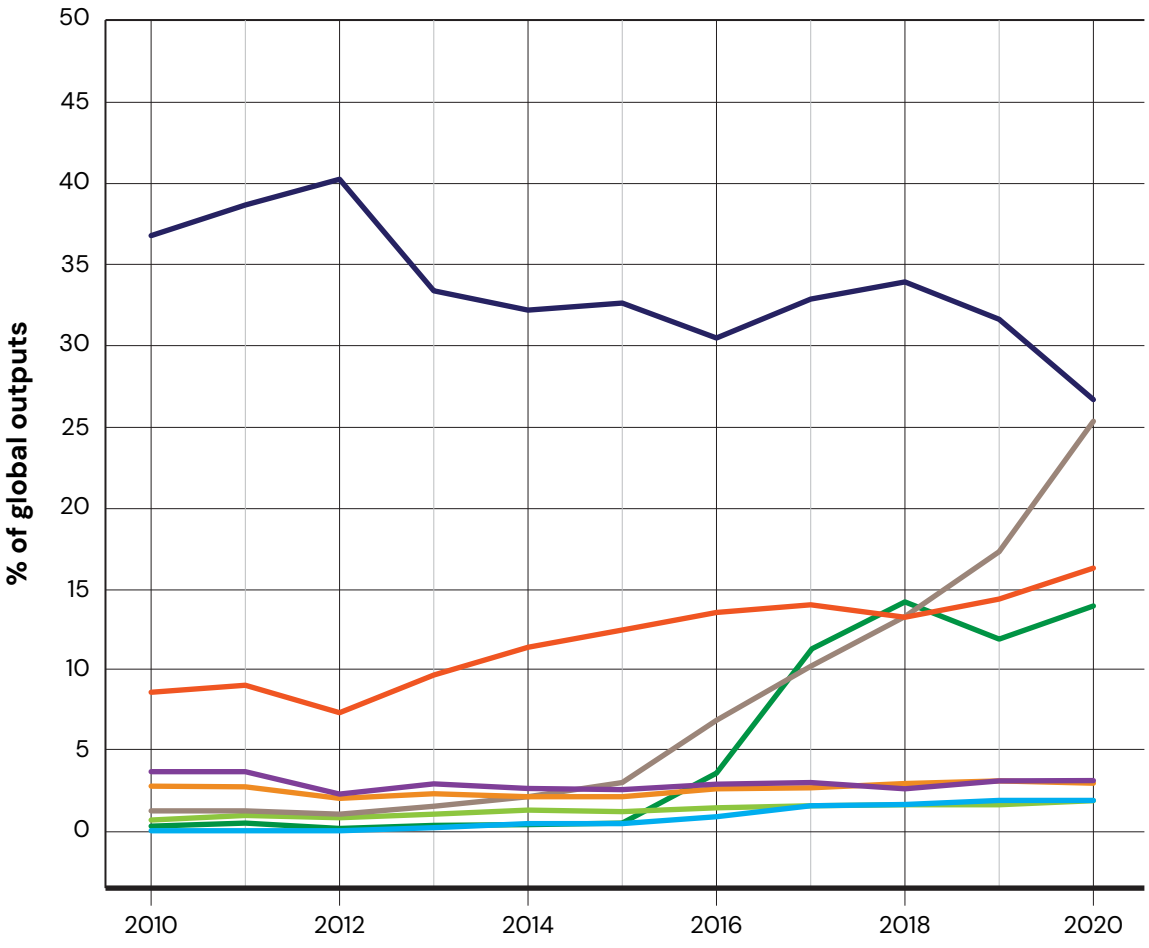
Ongoing challenges to realising ASEAN's strategic role

While ASEAN has established extensive frameworks to support regional cooperation on CM, significant hurdles remain in implementing these plans. A lack of strategic alignment among member states, intensifying geopolitical competition, and rising expectations around environmental, social and governance (ESG) standards in mining operations all threaten to undermine ASEAN's ambitions.

GEOPOLITICAL COMPETITION AND STRATEGIC AUTONOMY

ASEAN's role in global mineral supply chains remains heavily skewed toward the export of unprocessed or minimally processed materials. The dominance of external actors, most prominently China, is limiting the region's ability to act autonomously and exposes them to geopolitical trends shaping CM markets, most notably hardening US-China competition.[13]

FIGURE 2: **Refining and smelting of selected metals as share of global outputs**



Source: Pavel Bilek based on British Geological Survey[14]

Beijing has been a critical supporter of Southeast Asia's minerals sector through substantial investments to Southeast Asia since the early 2000s. Under its Belt and Road Initiative, Beijing provided approximately US$3 billion for renewable-energy projects in Southeast Asia from 2019–23 alone.[15] China is also a pivotal market for Southeast Asia mineral's exports and continues to dominate higher-value processing activities. In 2022, for example, over 95 per cent of nickel exports (both ore and refined) from Indonesia and the Philippines were directed to China. Similarly, Myanmar exported nearly all of its manganese, rare earth elements (REEs), and tin ores to China.[16]

Amid growing protectionism against China in the US, Europe, and elsewhere, these dependencies significantly constrain the region's ability to engage in global value chains.

For example, the United States' Inflation Reduction Act (IRA) mandates that at least 40 per cent of EV battery content originate from the US or a free trade agreement (FTA) partner to qualify for tax incentives. The Act also excludes materials processed by "foreign entities of concern," such as China, from eligibility. This could severely impact Southeast Asia's emerging EV sector, as none of the ASEAN Member States (except Singapore) currently have FTAs with the US and would need to negotiate separate agreements.[17] While President Trump has since rolled back tax breaks provided by the IRA, similar trade restrictions are likely to emerge in the future.

More broadly, the growing bifurcation of CM supply chains undermines the region's traditional commitment to strategic autonomy and is carefully balancing its relationships with both China and the US.[18]

While new multilateral arrangements offer opportunities for ASEAN to diversify its supply chains, initiatives like the Minerals Security Partnership (MSP) or more recent Quad critical minerals initiative between the US, Australia, India and Japan, are seen by the region as part of a broader containment strategy, posing a significant threat to its nonaligned stance.[19] This is compounded by the fact that no regional country or international partner can currently match the scope of China's investments or processing capacities. Alienating China could thus impose additional costs for developing economies in the region.[20]

Uncertainty over the US trade policy under President Donald Trump only adds to this complexity. Next to the imposition of tariffs, which impact most of the region due to a large trade surplus with the US, Trump's rollback of climate change commitments also impacted cooperation on CM and clean energy and raised doubts about Western-led funding schemes like the G7 Partnership for Global Infrastructure and Investment.[21]

LACK OF REGIONAL STRATEGIC ALIGNMENT

Another major challenge to deeper cooperation on CMs within ASEAN is the lack of strategic alignment and significant fragmentation in policy and regulatory frameworks. While ASEAN has developed a robust institutional framework, the implementation of these plans has been limited. ASEAN member states differ considerably in their stages of development, and this diversity is reflected in the CM sector, where countries vary widely in economic structures, resource endowments, and industrial development goals. For instance, Indonesia has a mining-intensive economy, while countries like Cambodia are minor mineral producers, and others, such as Brunei, lack significant CM reserves altogether.

As member states have continued to pursue policies to support national-level interests, meaningful policy alignment has been largely absent.

Indonesia's 2020 nickel export ban has arguably been the most prominent national policy to shift its domestic industry up the value chain and has since been followed by other countries. The Philippines, which became China's top nickel ore supplier after Indonesia's ban, considered its own restrictions to incentivize downstream processing and align with its National EV Roadmap - though it rescinded the plan due to industry pushback. Malaysia implemented a moratorium on REE exports in December 2023 to boost domestic processing and manufacturing toward its aspiration of a 'mine to magnet' ecosystem.[22]

BOX 2 **Indonesia's nickel ban**

Indonesia began experimenting with export bans as early as 2002. Under the leadership of President Joko Widodo (2014-2024), the country restricted the export of nickel ore from 2014 with the aim of building refining infrastructure, creating jobs, and encouraging foreign investment in domestic processing facilities. After an initial relaxation in 2017, the ban was reinstated in 2020 to encourage investment in Indonesia's downstream manufacturing industry. Today, the country produces nearly half the world's refined nickel and two-thirds of its mined nickel. In 2023, its exports of processed nickel amounted to US$22 billion, or 9 per cent of total exports.[23]

Indonesia's transformation in the nickel sector has been driven by an influx of Chinese capital and Chinese-owned companies, which provided investments to build the necessary infrastructure for nickel processing, such as coal-fired smelters, as well as set up strategic projects such as the Morowali Industrial Park.

This engagement has not come without costs. Indonesia's nickel export ban has deepened the country's dependence on China. Although Indonesia is now the world's leading hub for nickel refining, around 75 per cent of its refining operations are controlled by Chinese companies or shareholders.[24] This dominance has contributed to a supply-demand imbalance, allowing Chinese firms to monopolize demand and pressure domestic miners to sell at prices below market rates. As a result, some Indonesian companies have cut corners on environmental and safety standards. Alongside concerns over labour practices and social impacts on local communities, this environment has made it increasingly difficult for non-Chinese investors to compete.[25]

This also extends to international partnerships, which have been primarily taking place at the bilateral rather than regional level and have, at times, fostered competition rather than regional cooperation. For example, following Indonesia's success in attracting Chinese investment into its nickel sector, the Philippines proposed the idea of a "China-free" nickel supply chain to court Western partners.[26]

This divergence limits ASEAN's collective credibility in global markets for foreign investors.[27] Despite its rich resource base, investment in the region's mining sector—particularly in early-stage exploration—has seen a persistent and troubling decline. In 2020, Southeast Asia attracted only about US$200 million in exploration expenditure, representing just 2.4 per cent of the global total of US$8.3 billion.[28] This trend is largely driven by investor concerns over policy uncertainty, fragmented regulatory frameworks, and governance challenges. As one ASEAN study noted, "there is a fundamental need for ASEAN member states to be demonstrably welcoming of minerals investment at all stages of the value chain".[29]

However, ongoing differences in permitting and legal frameworks, as well as ESG standards, perpetuate concerns over the long-term stability of mining policy and regulation.

BALANCING GLOBAL DEMAND AND SUSTAINABLE MINERALS DEVELOPMENT

ASEAN has identified responsible minerals development and governance as one of two pillars of its long-term vision.

> **How the region balances competing priorities of supply security, affordability, and sustainability will have profound implications for Southeast Asia's efforts to move up the global value chain.**

The region's growing role in global supply chains is shadowed by a history of struggling with corruption, political instability, and lack of transparency in the resources sector, raising serious concerns about the long-term sustainability of resource development.[30] A stark example is Myanmar, where rare earth mining surged after the military's 2021 coup and ensuing civil conflict. This unregulated growth has fuelled the war economy, generated toxic pollution, and triggered environmental damage across borders, with toxic runoff reportedly contaminating parts of the Mekong River and its tributaries.[31]

Such sustainability concerns have been a deterrent of investment in Southeast Asia's minerals sector. For example, German chemical giant BASF and French mining company Eramet withdrew from a planned US$2.6 billion nickel-cobalt refining complex in Weda Bay, Indonesia, citing such concerns.[32] They also have important implications for the region's future competitiveness as major economies are actively shaping international standards, leveraging regulatory power to influence sourcing practices and industrial policy. Benchmarks imposed by new regulations such as the EU's Battery Regulation to govern the life cycle of batteries, or Carbon Border Adjustment Mechanism, which makes high-emissions imports more costly, may constrain the industrial strategies of resource-rich ASEAN countries through de facto trade barriers like import restriction or ESG conditionalities.[33]

Implications for Australia

As part of the ASEAN-Australia Comprehensive Strategic Partnership, Australia pledged to support the implementation of the ASEAN Minerals Cooperation Action Plan and help position ASEAN as a major global exporter of critical minerals and metals in 2025.[34] Australia is already working with Southeast Asian countries in mining equipment, technology and services (METS), as well as in capacity-building initiatives that promote sustainable mining practices. As the region is looking to enhance local downstream industries and value-addition, this partnership will only grow in importance. To effectively support the implementation of ASEAN frameworks, however, Canberra should also prioritise helping ASEAN strengthen its institutional capacity to better align national and regional priorities, and to promote inclusive and cooperative approaches to navigating great-power dynamics.

Endnotes

1 *Global Critical Minerals Outlook 2025* (International Energy Agency, 2025), https://www.iea.org/reports/global-critical-minerals-outlook-2025.

2 ASEAN, 'ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026-2030', ASEAN Secretariat, 17 October 2025, https://asean.org/book/asean-minerals-cooperation-action-plan-amcap-iv-2026-2030/.

3 Ian Satchwell et al., *Development Prospects of ASEAN Minerals Cooperation (DPAMC)* (ASEAN Secretariat, 2022), 22, https://asean.org/wp-content/uploads/2022/04/Development-Prospects-of-ASEAN-Minerals-Cooperation-DPAMC.pdf.

4 Mandy Meng Fang, 'Climbing up the Critical Mineral Value Chains: The Global South and Green Industrialization in an Era of Disruption', *Vanderbilt Journal of International Law 57*, no. 3 (2024): 799, https://ssrn.com/abstract=4800350.

5 IEA, 'Southeast Asia's Role in the Global Energy System Is Set to Grow Strongly over next Decade', *International Energy Agency*, 21 October 2024, https://www.iea.org/news/southeast-asias-role-in-the-global-energy-system-is-set-to-grow-strongly-over-next-decade.

6 E. Burlinghaus, *Challenges and Opportunities for the Southeast Asian Solar Market: Lessons From Vietnam and Malaysia*, RIFS Policy Brief (Research Institute for Sustainability (RIFS), 2023), 4, 10.48481/rifs.2023.003.

7 ASEAN, 'ASEAN Minerals Cooperation Action Plan (AMCAP-IV) 2026-2030'.

8 ASEAN, 'ASEAN Minerals Development Vision', ASEAN Secretariat, 17 October 2025, https://asean.org/book/asean-minerals-development-vision/.

9 Sharon Li-lian Seah and Mirza Sadaqat Huda, 'Enhancing ASEAN's Role in Critical Mineral Supply Chains', *Trends in Southeast Asia*, ISEAS-Yusof Ishak Institute, vol. 3 (2024): 25, https://www.iseas.edu.sg/wp-content/uploads/2024/01/TRS3_24.pdf.

10 ASEAN, 'ASEAN Economic Community Strategic Plan 2026-2030', ASEAN Secretariat, 26 May 2025, https://asean.org/wp-content/uploads/2025/05/07.-AEC-Strategic-Plan-2026-2030_adopted.pdf.

11 ASEAN, 'ASEAN Minerals Development Vision'.

12 Pia Dannhauer, 'ASEAN strategies and partnerships in the critical minerals sector', Working Paper Nr. 2, Stiftung Wissenschaft und Politik (2025), https://www.swp-berlin.org/publications/products/arbeitspapiere/Dannhauer_ASEAN-Strategies-and-Partnerhsips.pdf

13 Trissia Wijaya and Lee Jones, 'Indonesia, Nickel, and the Political Economy of Polyalignment in the Second Cold War', *Third World Quarterly* 0, no. 0 (2025): 1–20, https://doi.org/10.1080/01436597.2025.2465514.

14 IGF, *ASEAN-IGF Minerals Cooperation: Scoping Study on Critical Minerals Supply Chains in ASEAN* (International Institute for Sustainable Development, 2023), 24, https://asean.org/book/asean-igf-minerals-cooperation-scoping-study-on-critical-minerals-supply-chains-in-asean/.

15 Sin Lu Tan, 'China's Evolving Belt and Road Initiative in Southeast Asia', IISS, 31 July 2024, https://www.iiss.org/online-analysis/online-analysis/2024/07/chinas-evolving-belt-and-road-initiative-in-southeast-asia/.

16 Ryan W. Bhaskara, 'Cooperate, Not Compete: ASEAN's Critical Mineral Strategy for Energy Transition', *Economic Research Institute for ASEAN and East Asia (ERIA)*, 10 January 2025, https://www.eria.org/news-and-views/cooperate--not-compete--asean-s-critical-mineral-strategy-for-energy-transition.

17 Fang, 'Climbing up the Critical Mineral Value Chains', 829.

18 FPCI, *Asean Peoples' Perception Survey* (FPCI-ERIA, 2024), 13, https://www.aseanperceptionssurvey.com/.

19 Miza S. Huda, 'Mineral Security Partnership and Southeast Asia: Forcing Countries to Choose?', *FULCRUM*, 30 April 2024, https://fulcrum.sg/mineral-security-partnership-and-southeast-asia-forcing-countries-to-choose/.

20 Dylan Sibbitt, 'Furthering US-Indonesia Ties Beyond Mining', *Wilson Center*, 15 August 2024, https://www.wilsoncenter.org/blog-post/furthering-us-indonesia-ties-beyond-mining.

21 Amos Yeo, 'Supply Chains and Southeast Asia: The Sino-American Shadow', *Survival* 67, no. 4 (2025): 116, https://doi.org/10.1080/00396338.2025.2534289.

22 Tham Siew Yean, *Strategy and Sustainability Critical to Malaysia's Rare Earth Ambitions*, Malaysia, 14 August 2025, https://eastasiaforum.org/2025/08/14/strategy-and-sustainability-critical-to-malaysias-rare-earth-ambitions/.

23 'Indonesia Nearly Has a Monopoly on Nickel. What Next?', *The Economist*, 2025, https://www.economist.com/asia/2025/01/09/indonesia-nearly-has-a-monopoly-on-nickel-what-next.

24 Eli Miller, *Refining Power* (C4ADS, 2025), https://c4ads.org/commentary/refining-power/.

25 Angela Tritto, *How Indonesia Used Chinese Industrial Investments to Turn Nickel into the New Gold* (Carnegie Endowent for International Peace, 2023), https://carnegieendowment.org/research/2023/04/how-indonesia-used-chinese-industrial-investments-to-turn-nickel-into-the-new-gold?lang=en.

26 Bhaskara, 'Cooperate, Not Compete'.

27 Vlado Vivoda et al., 'Navigating ASEAN's Critical Materials Future: Opportunities, Risks and Strategic Imperatives', *Mineral Economics*, ahead of print, 21 October 2025, https://doi.org/10.1007/s13563-025-00553-3.

28 IGF, ASEAN-IGF *Minerals Cooperation*, 18.

29 Satchwell et al., *Development Prospects of ASEAN Minerals Cooperation (DPAMC)*.

30 Lorenzo Colantoni and Matthew Burnett-Stuart, *Crimes Associated with Critical Minerals in Southeast Asia: Trends, Challenges and Solutions* (UN Interregional Crime and Justice Research Institute (UNICRI), 2025), https://unicri.org/Publication-Crimes-Associated-with-Critical-Minerals-Southeast-Asia-Apr-2025.

31 Zsombor Peter, 'Satellite Images Show Surge in Rare Earth Mining in Rebel-Held Myanmar', *Al Jazeera*, 7 August 2025, https://www.aljazeera.com/news/2025/8/7/satellite-images-show-surge-in-rare-earth-mining-in-rebel-held-myanmar.

32 David Hutt, 'EU Faces Green Dilemma in Indonesian Nickel –', *Deutsche Welle*, 16 July 2024, https://www.dw.com/en/eu-faces-green-dilemma-in-sourcing-nickel-from-indonesia/a-69681557.

33 Fang, 'Climbing up the Critical Mineral Value Chains'.

34 ASEAN Secretariat, 'Plan of Action to Implement the ASEAN-Australia Comprehensive Strategic Partnership (2025-2029)', 2025, https://asean.org/wp-content/uploads/2024/07/Adopted-ASEAN-Australia-POA-2025-2029.pdf.

About the Perth USAsia Centre

The Perth USAsia Centre is a leading think tank focused on Indo-Pacific strategy. Through our research and educational activities, we strengthen relationships and strategic thinking between Australia, the Indo-Pacific, and the United States. Based at the University of Western Australia, we are a non-partisan and not-for profit institution. We engage thought leaders across government, business, and academia to address challenges and opportunities in the Indo-Pacific region. Since the Centre's inception in 2013, we have informed a broad and diverse community of over 30,000 at more than 800 events across 25 cities in 10 countries.

For more information, contact us via **perthusasiacentre@uwa.edu.au**

Disclaimer

© Perth USAsia Centre 2025

Perth USAsia Centre
INDO-PACIFIC STRATEGY

perthusasia.edu.au

M265, 3rd Floor, Old Economics Building, The University of Western Australia, 35 Stirling Highway, Crawley WA 6009, Australia

Perth USAsia Centre
INDO-PACIFIC STRATEGY

@ perthusasiacentre@uwa.edu.au
@PerthUSAsia
PerthUSAsia
linkedin.com/company/perth-usasia-centre
perthusasia.edu.au
@perthusasiacentre