



Final Recommendations: FTA Modernisation for Critical Minerals Supply Chain Integration

Activity Report — DFAT SEA FTA Grants 001 February 2026

Executive Summary

Australia's Free Trade Agreement architecture with Southeast Asia provides a substantial but underutilised foundation for critical minerals supply chain integration. This report presents findings and recommendations from a research project examining FTA modernisation options to strengthen critical mineral supply chains for the Indo-Pacific green economy transition — implementing Recommendation 10 of the *Invested: Australia's Southeast Asia Economic Strategy to 2040*.^[1]

Core finding: The primary barrier to critical minerals supply chain integration between Australia and Southeast Asia is not inadequate FTA text but inadequate utilisation, institutional support, and implementation of existing provisions. Only 17% of Australian firms significantly utilise FTA provisions; 28% are unaware they exist.^[2] This finding is reinforced by convergent evidence: ASPI's assessment that many of Australia's 30 international critical minerals partnership agreements "remain dormant, overtaken by market realities or stalled by implementation hesitancy"^[3] — a finding about bilateral MOUs and frameworks rather than FTA trade provisions per se, but one that points to the same structural pattern of underactivation — alongside the Australian Dairy Industry Council's documentation of burdensome compliance procedures under Southeast Asian FTAs,^[4] and stakeholders across government, industry, academia, and civil society who consistently identified this implementation gap — not agreement deficiencies — as the central challenge.

Recommended approach: An "activation and targeted modernisation" framework organised in three tiers:

- **Tier 1 — Activate existing provisions (2026–2027, no renegotiation):** Operationalise economic cooperation chapters already in force under IA-CEPA, RCEP, and AANZFTA; improve FTA utilisation through a targeted business awareness campaign; activate existing bilateral institutional mechanisms with critical minerals agendas. *Lead vehicle:* DFAT South-East Asia Division, coordinated through the Trade 2040 Taskforce. *First action:* Submit a critical minerals activation agenda to the IA-CEPA General Review by March 2026. *Success metric:* FTA utilisation rate among critical minerals and METS firms rises from 17% toward 30% by end-2028 — an aspirational target to be formally calibrated against the critical minerals-specific baseline established by the D1.1 utilisation survey (Q3 2026), since the 17% figure reflects cross-sectoral business usage and sector-specific rates may differ.
- **Tier 2 — Institutional and administrative improvements (2027–2030, administrative action):** Establish standing critical minerals business advisory councils for Australia-Indonesia (2028) and Australia-Philippines (2028); pursue standards mutual recognition arrangements beginning with TSM/ESG certification with the Philippines; digitise trade facilitation processes; align circular economy regulations; strengthen domestic coordination through a cross-departmental critical minerals trade strategy group. *Lead vehicle:* AANZFTA Senior Economic Officials Meeting and IA-CEPA Joint Committee. *Decision gate:* Ministerial endorsement of the business advisory council mandate by mid-2027. *Success metric:* At least two bilateral MRAs signed by 2030; self-certification of origin operational across all Australia-Southeast Asia FTAs by 2029.
- **Tier 3 — Targeted new provisions (2028–2035, requires negotiation):** Negotiate critical minerals chapters or side agreements prioritising IA-CEPA and AANZFTA; secure METS

services commitments through negative-list scheduling; develop green rules of origin with carbon footprint weighting; enhance investment facilitation; establish mutual technology transfer and capacity building frameworks. *Lead vehicle:* AANZFTA FTA Joint Committee and IA-CEPA Joint Committee, with negotiating mandates from respective ministers. *Decision gate:* Present negotiating mandate proposal to AANZFTA Senior Economic Officials at their 2029 session. *Success metric:* Critical minerals chapter or side agreement concluded with at least one partner by 2032; METS services commitments secured under AANZFTA by 2031.

This three-tier structure embodies a broader shift in international economic governance – analogous to the evolution from the Kyoto Protocol to the Paris Agreement in climate diplomacy – from rigid, top-down frameworks toward flexible, iterative, multi-stakeholder approaches. It retains the core liberalisation value of existing agreements while strengthening the practical partnerships and institutional ecosystem that make them effective.

Strategic context: US-China strategic competition over critical minerals supply chains has intensified sharply. China controls processing capacity for key minerals – over 90% of rare earth refining and 65–70% of lithium refining globally – and has repeatedly weaponised that dominance, most recently restricting rare earth exports to Japan in January 2026.^[3:1] Southeast Asia sits at the intersection: Indonesia holds over 40% of global nickel reserves; Chinese firms control approximately 75% of Indonesian nickel refining capacity; the Philippines exports roughly 90% of its nickel ore to China.^[5] The opportunity for ASEAN and Australia is to forge a stable, resilient partnership – one that reduces dependency on great power dynamics while building genuine mutual benefit through joint value chain development.

Implementation roadmap: Tier 1 actions commence immediately: DFAT submits a critical minerals activation agenda to the IA-CEPA General Review (submissions due March 2026), proposes a critical minerals cooperation pilot under the AANZFTA TSD chapter at the next AANZFTA Senior Economic Officials Meeting, and launches a targeted business awareness campaign for critical minerals firms by Q3 2026. Tier 2 institutional reforms begin in 2027: establish the first bilateral business advisory council (Australia-Indonesia) by mid-2027, commence standards MRA negotiations with the Philippines by end-2027, and convene the cross-departmental critical minerals trade strategy group by Q2 2027. Tier 3 negotiations target 2028–2035, with agreement-specific sequencing prioritising AANZFTA and IA-CEPA, and a decision gate at each phase transition requiring demonstrated progress on the prior tier's deliverables before committing negotiating resources to the next. The roadmap extends to 2040 consistent with the *Invested* strategy horizon.

1. Introduction: Project Scope and Methodology

Grant Objectives

This report addresses the three objectives of DFAT SEA FTA Grants 001:

- 1. Inform the Australian government's Southeast Asia trade and investment agenda to 2040** – through evidence-based analysis of critical minerals supply chain integration opportunities and barriers across five Southeast Asian partner countries.
- 2. Inform how the Australian government prioritises FTA modernisation and enhancement in Southeast Asia** – through a three-tier framework distinguishing activation of existing provisions from institutional reforms and targeted new negotiations.
- 3. Inform liberalisation and facilitation of trade and investment in Southeast Asia and closer economic integration** – through specific, actionable recommendations grounded in stakeholder consultation and comparative FTA analysis.

Five-Phase Methodology

The project followed a structured five-phase research design conducted between August 2025 and February 2026:

Phase 1 — Mapping and inception (August–September 2025): Established the analytical framework through consultations with DFAT, mapping the FTA landscape across seven agreements (AANZFTA, RCEP, CPTPP, IA-CEPA, SAFTA, MAFTA, TAFTA), and identifying critical minerals as a pathfinder sector with cross-sectoral applicability to agriculture, green economy, and services.

Phase 2 — Evidence review (September–November 2025): Systematic analysis of trade barriers, processing opportunities, sustainability dimensions, and available policy instruments. This phase produced the Evidence Review, which documented five categories of trade barriers and identified behind-the-border measures as more significant than tariff barriers for critical minerals trade.^[6]

Phase 3 — Stakeholder consultation (October 2025–February 2026): A mixed-methods consultation approach combining extensive desk research with targeted stakeholder engagement, described further below.

Phase 4 — Technical analysis (December 2025–February 2026): Comparative analysis of international FTA precedents, including the US-Japan Critical Minerals Agreement, EU-Chile Advanced Framework Agreement, CPTPP, and USMCA, to identify model provisions and flexible options for critical minerals supply chains. This phase produced the companion Technical Paper on Model Provisions.

Phase 5 — Synthesis and recommendations (January–February 2026): Integration of evidence review findings, consultation outcomes, and technical analysis into the three-tier recommendation framework and implementation roadmap presented in this report.

Consultation Methodology

The project employed a mixed-methods approach to stakeholder consultation designed to maximise the quality and candour of input:

Desk review phase: Systematic analysis of published industry positions, peak body statements, government reports, and academic literature produced ten deep research reports covering perspectives from the mining sector, METS industry, financial sector, renewable energy, agriculture, and Southeast Asian industry. This formed the foundation of the Evidence Review and Consultation Summary submitted in October and December 2025 respectively.

Targeted consultation phase: Individual consultations with key stakeholders across government, industry, academia, and civil society, complemented by two multi-stakeholder virtual workshops (December 2025 and February 2026) bringing diverse perspectives together. These consultations focused on validating desk research findings, identifying practical implementation barriers, and testing the three-tier framework.

Chatham House Rule: Stakeholders overwhelmingly preferred non-attribution to preserve frank discussion. The project adjusted its methodology accordingly, prioritising candour over volume of formally attributed consultations. This approach proved especially valuable for eliciting observations about sensitive topics — government coordination gaps, regulatory failures, competitive dynamics — that would have been difficult to discuss under attribution.

The planned cross-departmental roundtable was deferred at DFAT's direction to prioritise expanded industry consultation. The two virtual workshops and sustained programme of individual consultations confirmed that this adjusted methodology produced robust results across all consultation themes.

Analytical Scope

The analysis adopts a “pathfinder sector” approach: critical minerals supply chains provide the analytical anchor while exploring whether barriers, opportunities, and solutions extend to agriculture, green economy, and other priority sectors. Geographic scope encompasses five Southeast Asian FTA partners where critical minerals trade is most strategically significant: Indonesia, the Philippines, Malaysia, Thailand, and Vietnam.

A Note on Analytical Evolution

The project’s original research design included scenario analysis to model the impact of potential FTA upgrades on bilateral trade flows – quantifying the effects of tariff reductions, simplified rules of origin, or stronger ESG provisions on critical minerals trade volumes and investment patterns. As the evidence review and stakeholder consultation progressed, however, a finding emerged that fundamentally reoriented the analytical approach: the binding constraint on critical minerals supply chain integration is not the structure of FTA provisions but their implementation and utilisation. With only 17% of Australian firms making significant use of existing FTA preferences and 28% unaware the agreements exist,^[2:1] modelling the trade effects of new provisions offers limited value when existing provisions remain largely dormant.

This finding is reinforced by the ASPI assessment that “too many of those agreements remain dormant, overtaken by market realities or stalled by implementation hesitancy” and that Australia’s 30 international critical minerals agreements have been “cherry-picked to be only partially activated,” with outbound supply chain development commitments largely neglected.^[3:2] ASPI’s analysis addresses bilateral partnership agreements (MOUs, frameworks, and cooperation arrangements) rather than FTA trade provisions directly, but the convergence is significant: both dormant partnership agreements and underutilised FTA provisions point to a systemic activation failure across Australia’s international critical minerals architecture. This convergent finding led the project to prioritise qualitative institutional analysis over quantitative trade flow modelling. The approach proved analytically productive. It identified the specific behind-the-border barriers, institutional capacity gaps, and administrative frictions that quantitative models – which typically capture tariff preference effects rather than implementation failures – would not have revealed.

The three-tier framework that constitutes this report’s central recommendation is a direct product of this analytical reorientation. Tier 1 (activation) addresses the implementation gap that emerged as the primary barrier. Tier 2 (institutional reform) targets the administrative and coordination failures identified through qualitative analysis. Tier 3 (targeted provisions) focuses negotiating energy on genuine gaps rather than duplicating provisions that already exist on paper.

A sceptic might reasonably ask: if existing provisions were going to be activated, they would have been by now – what makes activation achievable now? The answer lies in a convergence of changed conditions that did not exist when these agreements were signed. The IA-CEPA General Review opens a concrete institutional window in 2026. IRA and EU Battery Regulation deadlines create commercial urgency for compliant supply chains by 2027–2029. And a geopolitical environment in which China’s repeated weaponisation of mineral dependencies has transformed critical minerals from a technical trade issue into a strategic priority commanding ministerial attention. The activation-first approach is not a counsel of complacency; it is the honest finding that the most impactful actions are also the most immediately available.

The bilateral trade flow data presented in Section 2.6 provides empirical context for the qualitative findings. Commodity-level disaggregation of bilateral mineral trade between Australia and individual Southeast Asian partners remains limited in publicly available datasets – itself a finding that underscores the need for the supply chain mapping exercise recommended as a Phase 1 action in the Implementation Roadmap.

2. The Strategic Context

The case for FTA modernisation rests on a convergence of geopolitical, economic, and institutional factors that together create favourable conditions for action. China's weaponisation of critical minerals dominance makes supply chain diversification a security imperative; Southeast Asia's mineral endowments and processing ambitions make it Australia's natural partner; and the existing FTA architecture provides a broad but underutilised foundation. This section establishes each dimension of that strategic context.

2.1 Geopolitical Dynamics: Supply Chain Competition

Intensifying US-China strategic competition has transformed the global landscape for critical minerals. Over the past two decades, China established vertically integrated supply chains for minerals vital to defence, digital transformation, and the energy transition – investing strategically in processing capacity while other nations focused on upstream extraction. This dominance is now accompanied by an increasing willingness to leverage mineral dependencies for geopolitical purposes.^[7] In 2026, China controls over 90% of rare earth refining and approximately 65–70% of lithium refining globally, while Chinese firms dominate nickel processing both domestically and through majority ownership of Indonesian smelting capacity.^[7:1]

China's willingness to weaponise this dominance is no longer theoretical. Having first restricted rare earth supply to Japan in 2010 following a maritime incident, China escalated the use of critical minerals as a geostrategic instrument in 2025, threatening to restrict global rare earth supply unless the United States reduced technology restrictions. In January 2026, China again restricted rare earth exports to Japan – punishing remarks by the Japanese Prime Minister about Taiwan.^[8] Supply chain concentration translates directly into geopolitical vulnerability.

For net supplier nations like Australia, China's dominance creates a dual risk: market manipulation keeping new supply sources from being developed, and vulnerability to economic coercion through dependence on Chinese processing and purchasing. Minerals exports to China account for 53% by value of all minerals exports from Australia.^[9] This concentration demands active management.

2.2 Southeast Asia at the Intersection

Southeast Asia occupies a pivotal position in the global critical minerals landscape. Indonesia and the Philippines are the world's two largest nickel producers, with Indonesia accounting for roughly half of global nickel production growth between 2021 and 2025.^[10] Yet the region's mineral wealth flows overwhelmingly toward Chinese supply chains. Chinese firms control approximately 75% of Indonesian nickel refining capacity – the result of substantial Chinese investment since Indonesia's 2020 nickel ore export ban catalysed processing capacity expansion.^[11] The Philippines exports roughly 90% of its nickel ore to China, reflecting an even more concentrated dependence.^[12]

This pattern means that Southeast Asian critical minerals, rather than diversifying global supply chains, reinforce China's processing dominance. Processing gravitates to China for structural economic reasons: lower industrial energy costs, economies of scale built over decades of strategic investment, and substantially lower environmental compliance expenditure.^[7:2] Addressing this requires understanding what FTA provisions can and cannot do. They cannot eliminate Chinese cost advantages. But they can reduce regulatory compliance costs that disadvantage diversified supply chains (through mutual recognition), provide the regulatory predictability that allied financing requires to compete with Chinese state-backed capital (through investment facilitation), and create market access premiums that reward governance and sustainability performance (through green rules of origin and ESG certification). The Quad nations have formally recognised the underlying risk: "Reliance on any one country for processing and refining critical minerals and derivative goods production exposes our industries to economic coercion, price manipulation, and supply chain disruptions."^[13]

Malaysia, Thailand, and Vietnam add further dimensions. Malaysia hosts significant rare earth processing through the Lynas facility at Kuantan – a globally strategic operation outside Chinese control. Thailand has positioned itself as Southeast Asia’s leading EV manufacturing hub, with established automotive supply chains attracting substantial battery manufacturing investment. Vietnam’s elevation to Comprehensive Strategic Partnership with Australia in March 2024 creates opportunities for cooperation in rare earth extraction and processing, building on its emerging capacity.

2.3 The Middle Power Opportunity

US-China strategic competition creates both risks and opportunities for middle powers. As Canadian Prime Minister Mark Carney observed at the World Economic Forum in January 2026, middle-power nations can work together more closely in the face of disruption from great powers’ rivalry.^[14] The ASPI report argues that Australia must pivot from signing partnerships to fully activating them – prioritising partners where real supply chain integration is achievable.^[15]

The opportunity for ASEAN and Australia is to forge a stable, resilient partnership that reduces dependency on great power dynamics while building genuine mutual benefit. Australia brings world-leading geological endowments, mining equipment, technology, and services (METS) expertise, strong ESG credentials, and political stability. Southeast Asian partners bring substantial resource bases, growing processing ambitions, strategic geographic positioning, and rapidly expanding clean energy manufacturing capacity. This complementarity – rather than competitive extraction – should define the partnership.

Any realistic assessment must acknowledge that supply chain diversification will face active commercial resistance from Chinese firms with entrenched positions across Southeast Asian processing – firms offering integrated financing, off-take agreements, and rapid project delivery that Australian and other Western competitors have not matched at scale. Australia’s comparative advantages are non-cost-based: transparent governance, ESG credentials recognised by Western regulators, allied government financing through Export Finance Australia and FORGE (the Forum on Resource Geostrategic Engagement, successor to the Minerals Security Partnership), and regulatory pathways to IRA and EU Battery Regulation compliance. FTA modernisation is the instrument through which these advantages are operationalised.

A diplomatic reality must also be acknowledged. Specific provisions recommended in this framework – particularly those addressing non-market practices in critical minerals trade and those framing supply chain compliance in terms of IRA and EU regulatory requirements – will require careful positioning to avoid being read by ASEAN counterparts as pressure to choose sides in US-China strategic competition. ASEAN members maintain significant economic relationships with China and have consistently resisted frameworks that imply alignment against any major power. The partnership framing recommended in Section 4 must therefore be substantive, not cosmetic: provisions should demonstrably serve ASEAN development interests – processing capacity, technology transfer, market diversification – rather than serving as instruments of great power competition dressed in partnership language.

The critical minerals supply chain integration agenda serves both economic and security interests simultaneously. Diversifying processing reduces vulnerability to coercion. Joint value chains create mutual benefit that deepens the partnership. Standards alignment and institutional cooperation strengthen the broader relationship. Together, these constitute the strategic rationale for urgent action on FTA modernisation.

2.4 The Kyoto-to-Paris Shift in Trade Architecture

The activation-and-targeted-modernisation framework reflects a broader transformation in how international economic agreements are designed to work – a shift that explains why existing FTA text has not translated into supply chain integration and what kind of architecture can. International economic governance is undergoing a change analogous to the shift from the Kyoto Protocol to the Paris Agreement in climate diplomacy. The Kyoto model – rigid, top-down, legally

binding with fixed targets and compliance mechanisms — gave way to the Paris model: flexible, iterative, bottom-up, with nationally determined contributions and multi-stakeholder engagement.

FTA modernisation follows a similar trajectory. The existing architecture retains its core liberalisation value — tariff reduction, market access rules, investment protections — but the modernisation agenda centres on strengthening practical partnerships, enabling adaptive institutional mechanisms, and building the surrounding ecosystem that makes agreements work. This is not about weakening commitments; it is about making them effective through flexibility, iteration, and stakeholder engagement.

The AANZFTA 2025 upgrade exemplifies this shift. Rather than binding enforcement mechanisms, the new Trade and Sustainable Development chapter establishes cooperation frameworks for environmental protection, climate action, green economy, circular economy, and energy — the first such chapter in any ASEAN-led FTA.^[16] This cooperative architecture reflects ASEAN's institutional preference for consensus and dialogue while creating practical mechanisms for action on critical minerals sustainability.

The "activation and targeted modernisation" approach embodies this Paris-style thinking: retain core commitments, add flexibility and practical mechanisms, enable iteration, and involve stakeholders directly in implementation. A legitimate critique of the Paris Agreement is that flexibility came at the cost of ambition — nationally determined contributions collectively fall short of the temperature targets the Agreement enshrines. The analogy holds for FTA governance, however, precisely because the problem is not insufficient ambition in agreement text but insufficient implementation of existing commitments. A framework that increases practical uptake of current provisions delivers more liberalisation than a more ambitious framework that remains dormant.

2.5 Australia's Invested 2040 Strategy

This project implements Recommendation 10 of *Invested: Australia's Southeast Asia Economic Strategy to 2040* — the strategy commissioned by the Prime Minister and led by Special Envoy Nicholas Moore AO. The strategy identifies that "there is considerable scope for modernising some of the older FTAs to increase coverage of issues or sectors" and recommends that "Australia's Trade 2040 Taskforce, in collaboration with Southeast Asian partners, to review the scope of existing free trade agreements to determine priorities for agreement upgrade negotiations."^[17]

The *Invested* strategy positions green energy transition as one of eight growth pathways for Australia-Southeast Asia economic engagement, identifying critical minerals as a sector where Australian capabilities — resource endowments, mining expertise, METS sector strength, ESG credentials — complement Southeast Asian needs for processing technology, environmental standards, and investment capital. The strategy emphasises that Australia's direct investment into Southeast Asia has stagnated while investment from other countries has increased materially — a gap this report's recommendations address.^[18]

This project's focus on critical minerals as a pathfinder sector directly implements the *Invested* strategy's approach: develop practical solutions for a specific sector with high strategic significance, then extend successful approaches to agriculture, green economy, and other priority areas.

2.6 Bilateral Trade Landscape: Scale and Structure

Australia's economic relationship with Southeast Asia is substantial and growing. Two-way trade reached approximately A\$178 billion in 2022, larger than Australia's trade with the United States and second only to China.^[19] Australia exported over A\$31 billion in resources (minerals and energy) to Southeast Asia in 2022, making resources the largest export sector to the region.^[20] Australia's global mining equipment, technology, and services (METS) exports were worth A\$17 billion in 2020, with 51% of total value destined for Southeast Asia — making the region the single largest METS export market.^[21]

Table 1: Australia-Southeast Asia Bilateral Trade and Investment (2022)

Partner	Two-Way Trade	Goods Trade	Services Trade	AUS Investment In-Country	Partner Investment in AUS
Indonesia	A\$23.3b	A\$19.0b	A\$4.3b	A\$3.1b	A\$805m
Malaysia	A\$33.5b	A\$30.9b	A\$2.6b	A\$10.1b	A\$19.8b
Philippines	A\$8.2b	A\$6.1b	A\$2.1b	A\$7.0b	A\$1.6b
Thailand	A\$27.7b	A\$25.4b	A\$2.2b	A\$4.8b	A\$10.4b
Vietnam	A\$25.7b	A\$23.3b	A\$2.4b	A\$1.8b	A\$437m
Total (five partners)	A\$118.4b	A\$104.7b	A\$13.6b	A\$26.8b	A\$33.0b

Source: DFAT, *Direction of Goods and Services Trade, 2023*; ABS, *International Investment Position: Supplementary Statistics, 2022*.^[19:1]

Three features of this data shape FTA modernisation strategy. First, the investment asymmetry is striking: Malaysia and Thailand each invest more in Australia than Australia invests in them, suggesting that investment facilitation barriers – not capital availability – constrain Australian outward investment. Second, Australia's total investment in the five partner countries (A\$26.8 billion) represents less than 1% of Australia's total outward investment stock of A\$3.7 trillion, confirming the *Invested* strategy's assessment that "Australia's direct investment into Southeast Asia has stagnated."^[18:1] Third, goods dominate the trade relationship (89% of total), with services trade – including METS services critical to supply chain integration – remaining a small share despite the sector's strategic significance.

At the minerals level, the picture is one of concentrated opportunity. Indonesia holds over 40% of global nickel reserves and attracted US\$25 billion in nickel processing investment between 2020 and 2024, though over 75% flowed from Chinese sources – an investment pattern FTA modernisation seeks to diversify.^[22] The Philippines holds untapped mineral reserves valued at approximately A\$1.3 trillion, including the world's third-largest gold deposits, fourth-largest copper, and fifth-largest nickel.^[23] Malaysia hosts the Lynas facility at Kuantan, processing 12–15% of global rare earth elements as the largest non-Chinese rare earth processing hub.^[24] Vietnam holds significant rare earth reserves – estimated at 3.5 million tonnes following USGS downward revision in January 2025 – representing a strategic diversification opportunity.^[25] These resource endowments define the partnership architecture that FTA modernisation should support.

2.7 Complementary Frameworks: IPEF, the Quad, and Regional Initiatives

FTA modernisation does not operate in isolation. Several complementary multilateral frameworks are developing in parallel, and their interaction with bilateral and regional FTAs shapes the broader architecture of critical minerals cooperation.

The **Indo-Pacific Economic Framework (IPEF)** – whose Supply Chain Agreement entered into force in February 2024 – provides the broadest multilateral platform. All five of Australia's target partner countries are IPEF founding members.^[26] The November 2023 IPEF Critical Minerals Dialogue brings together fourteen member nations to "strengthen[] IPEF critical mineral supply chains and boost[] regional economic competitiveness."^[27] The IPEF Supply Chain Early Warning System, piloted at the August 2023 Camp David Summit, foreshadows formalised information-sharing on inventory levels and supply disruptions – a mechanism directly relevant to the supply security provisions recommended in Recommendation 3.1.^[28] Australia allocated A\$25 million in the 2023–24 Budget for technical assistance to help ODA-eligible partners meet IPEF's high-standard rules, though this excludes non-ODA recipients Malaysia, Singapore, and Thailand.^[29]

The **Quad Critical Minerals Initiative**, launched in July 2025 by Australia, Japan, India, and the United States, focuses on securing and diversifying supply chains, e-waste recovery, and coordinating private-sector investment.^[13:1] While details remain in development, the Initiative's

mandate to address “non-market policies and practices for critical minerals” signals an intent to create coordinated alternative supply chain architecture.^[30]

The **Singapore-Australia Green Economy Agreement (GEA)** (2022) — the world’s first bilateral agreement focused entirely on climate change and clean energy cooperation — demonstrates that standalone green economy agreements can be legally anchored to existing FTAs without requiring full renegotiation. As noted in Section 7, the GEA provides a replicable model for Indonesia and Vietnam.^[31]

These frameworks complement rather than substitute for FTA modernisation. IPEF provides cooperative, non-binding platforms for capacity building and information sharing; bilateral and regional FTAs provide the binding commitments, dispute settlement mechanisms, and tariff disciplines that IPEF by design does not. As the *Invested* strategy observes, Australia should “push for ambitious digital trade rules” through both IPEF and “upgrades to existing bilateral free trade agreements.”^[32] The same logic applies to critical minerals: IPEF sets the cooperative foundation; FTA modernisation provides the legally binding architecture. Treaty design analysis recommends inserting cross-references in critical minerals FTA provisions recognising future IPEF standards as equivalent for rules-of-origin purposes — enabling “diagonal cumulation” with IPEF partners while avoiding duplicate certification regimes.^[33]

A notable gap remains. Critical minerals cooperation was not included in either the ASEAN-Australia Comprehensive Strategic Partnership or the AANZFTA 2025 upgrade — a significant omission given that ASEAN accounts for 46% of global nickel production and 34% of tin production.^[34] The bilateral Australia-Vietnam Comprehensive Strategic Partnership (elevated March 2024) does include a critical minerals dialogue, providing a bilateral precedent that the multilateral AANZFTA framework should now incorporate.^[35]

3. Findings from Evidence and Consultation

Eight findings from the evidence review and stakeholder consultation directly shape the three-tier recommendation framework. The most consequential — that the primary barrier to supply chain integration is inadequate utilisation of existing provisions, not inadequate FTA text — reorients the entire approach from renegotiation toward activation. The remaining findings identify the specific behind-the-border barriers, institutional gaps, and strategic opportunities that the three tiers address.

3.1 The Implementation Gap

The most consistent finding across evidence review and stakeholder consultation is that implementation gaps — not agreement gaps — constitute the central barrier to critical minerals supply chain integration. This finding has both quantitative and qualitative dimensions.

Quantitatively, only 17% of Australian businesses make significant use of existing FTA provisions with Southeast Asian partners, while 28% remain entirely unaware these agreements exist.^[2:2] These figures derive from a cross-sectoral survey of Australian firms operating in ASEAN; the utilisation rate for critical minerals specifically may differ — conceivably higher for large mining houses with dedicated trade compliance teams, or lower for small and medium METS firms that lack such capacity. The finding’s significance lies not in the precise figure but in its corroboration across multiple independent sources, each pointing to structural underutilisation. The Australian Dairy Industry Council’s September 2025 submission to the Southeast Asia FTA Review documented that Certificate of Origin requirements under older FTAs “place an administrative burden on exporters” through costly third-party certification — a procedural barrier that CPTPP’s self-certification model has already solved for some markets but not for Southeast Asian FTAs more broadly.^[4:1] Senior business leaders across sectors have converged on the same diagnosis: as one industry survey concluded, “agreements exist; utilisation is low” — and the strategic priority is “implementation infrastructure” rather than new treaty text.^[5:6] Thailand’s documented non-compliance with TAFTA dairy commitments — in an agreement now two decades old — demonstrates that FTA text alone does not guarantee implementation.^[3:7] Indonesia’s incomplete

implementation of IA-CEPA feed grain tariff rate quotas, noted in Joint Committee reviews as “not fully implemented,” reinforces the same conclusion.^[38]

Qualitatively, stakeholder consultations reinforced this finding from multiple perspectives. Southeast Asian government representatives indicated that in their operational work on energy and mining cooperation, existing FTA provisions rank low among the practical tools they consider when facilitating trade and investment. The prevailing perception — even among officials directly responsible for bilateral economic engagement — is that FTAs are primarily instruments for tariff reduction, and with tariffs already broadly low, the agreements function as background frameworks rather than active instruments for sectoral cooperation.^[39]

A policy expert with experience across FTA negotiations argued that the priority should be building the capacity of businesses to actually use existing architecture, rather than renegotiating it. The existing agreements already contain economic cooperation and capacity building chapters that Australia has not actively pursued activation of. Renegotiation, in this view, is “missing a step” — the prior step being relationship building and mutual understanding of the architecture that is already in place.^[40]

A note of analytical caution is warranted. Some degree of FTA underutilisation may reflect rational business calculation rather than information failure alone. Where MFN tariff rates are already low — as they are for many mineral commodities — the compliance costs of claiming FTA preferences (documenting origin, navigating rules of origin, obtaining certificates) may exceed the tariff savings, making MFN export the economically rational choice. The 17% utilisation figure does not distinguish between firms unaware of FTA provisions, firms aware but deterred by compliance costs, and firms that have rationally concluded the benefits do not justify the administrative burden. The D1.1 baseline survey (Q3 2026) is designed to distinguish between these explanations, enabling the awareness campaign and trade facilitation measures to be calibrated accordingly. If the dominant explanation proves to be rational cost-benefit calculation rather than information failure, the policy response shifts from awareness-building toward compliance cost reduction — making the digital trade facilitation and self-certification measures in Tiers 1 and 2 even more important.

This implementation gap is structural, not incidental. Australia lacks a permanent, funded business advisory mechanism between trade partner economies. Australian and Indonesian business councils proposed such a mechanism during IA-CEPA negotiations; it was not established. Subsequent trade engagement has been transactional — individual missions rather than ongoing dialogue — without the institutional continuity needed to build commercial relationships in cultures that prize long-term engagement.^[41]

3.2 Behind-the-Border Barriers

Non-tariff measures are more significant impediments than tariffs across all sectors examined. The Evidence Review documented five categories of trade barriers — tariffs, export restrictions, local content requirements, standards fragmentation, and administrative impediments — and found that behind-the-border barriers dominate practical trade friction.^[42]

Standards fragmentation imposes real operational costs. Industry stakeholders described instances where changes in customs personnel resulted in the rejection of products that had cleared the same border for years — not because of regulatory change, but because individual officials lacked familiarity with existing approvals. Compliance with auditable standards adds a cost premium estimated at 25-30% above that of competitors who operate below required standards.^[43] This asymmetry structurally disadvantages compliant firms unless both domestic enforcement and international harmonisation improve.

Export restrictions and processing mandates represent the most consequential structural barriers for minerals. Indonesia’s January 2020 nickel ore export ban fundamentally transformed global supply chains, attracting processing investment — FDI in mineral processing increased 207.9% from US\$3.56 billion in 2019 to US\$10.96 billion in 2022, predominantly from Chinese sources.^[44] The WTO panel found the ban inconsistent with GATT obligations in November 2022, but the ruling has not

been adopted due to the non-functional Appellate Body, and the ban remains in effect.^[45] Vietnam maintained export duties on certain raw minerals even within CPTPP, demonstrating that countries negotiate carve-outs to retain policy space for processing mandates despite trade liberalisation commitments.^[46]

Stakeholders understand these barriers not as obstacles to be removed but as expressions of sovereign development ambitions that must be engaged with constructively. The approach recommended in this report — joint value chain development rather than opposition to resource nationalism — reflects this understanding.

3.3 Government Coordination Gaps

Fragmented coordination within the Australian Government on trade and minerals policy emerged as a significant impediment to effective engagement — a finding identified independently by government officials, industry representatives, and academic experts across all consultations. Participants with experience across Australian Government agencies observed that coordination between trade and resources portfolios occurs primarily through informal channels, without the standing institutional mechanisms that would enable coherent engagement on issues spanning multiple portfolio responsibilities. Southeast Asian government counterparts independently corroborated this assessment, noting that the absence of routine cross-departmental dialogue on critical minerals trade — an exercise considered standard practice within their own multi-agency frameworks — has direct implications for the credibility and coherence of bilateral engagement.

The project's own experience reinforced stakeholder observations. The planned cross-departmental roundtable was deferred after consultations revealed that coordination on the intersection of trade agreements and critical minerals policy occurs primarily through informal channels. Stakeholders described tensions between trade and environment portfolios — with competing priorities on development aid, investment policy, and engagement terms with Southeast Asian partners — as a systemic challenge, not an isolated instance.^[47]

This coordination gap is not unique to Australia. A regional trade official identified the same structural problem: FTA negotiations are led by trade ministries, but the sectors most relevant to the green economy — mining, energy, manufacturing — are regulated by other ministries outside the negotiating process. Standalone critical minerals agreements may prove more effective precisely because they bypass this siloing.^[48]

These coordination challenges differ in nature across partners, and the distinction matters for strategy design. Some barriers are **capacity constraints** — addressable with resources and institutional investment — while others reflect **political will barriers** that require different engagement approaches. In Australia, the coordination gap between trade, resources, and environment portfolios is primarily a capacity and institutional design constraint: the expertise and mandate exist across departments, but standing coordination mechanisms do not. This is addressable through the cross-departmental strategy group recommended in Tier 2. In Indonesia, by contrast, the gap between trade ministry FTA commitments and the Ministry of Industry's *hilirisasi* policy reflects a deliberate political choice to subordinate trade liberalisation to industrial strategy — a political will barrier that cannot be resolved through capacity building alone but requires engagement with Indonesia's development ambitions on their own terms. In the Philippines, protracted permitting timelines (up to a decade for mining projects) reflect both institutional capacity constraints in local government units and political contestation over mining's role in national development — requiring dual strategies of technical assistance and political engagement. Vietnam's regulatory environment for critical minerals is shaped by state control of the mining sector, where the barrier is less institutional capacity than centralised decision-making structures that limit the scope for FTA-driven liberalisation. Malaysia's regulatory challenges around rare earth processing are predominantly political will barriers, shaped by community opposition and electoral dynamics surrounding the Lynas facility. Thailand's institutional machinery for trade agreement implementation is relatively capable, but the absence of articulated interest in Australia-specific critical minerals cooperation suggests that political prioritisation — rather than institutional capacity — is the binding constraint.

The constructive path forward is to build mechanisms that bridge existing institutional boundaries – while recognising that capacity constraints and political will barriers require different responses. Where the barrier is institutional capacity, targeted technical assistance, dedicated personnel, and funded secretariat functions are the appropriate instruments. Where the barrier is political will, the response must work through the partnership framing recommended in Section 4 – demonstrating mutual benefit through joint value chain development rather than seeking to override sovereign policy choices. Tier 2 recommendations address both dimensions.

3.4 Standards as Strategic Opportunity

Standards emerged from consultations as the highest-value modernisation opportunity – with implications well beyond critical minerals. Three dimensions warrant attention.

First, the green steel certification race illustrates both the strategic stakes and the cost of inaction. Stakeholders raised concerns that Australia's engagement on green steel certification lags major trading partners, risking disadvantage as other countries promote definitions that could penalise the genuine large-scale green iron and steel production Australia is positioned to develop. Australia should develop and negotiate standards proactively – not accept standards designed by others.^[49]

Second, the EU Battery Regulation (2023/1542) is creating the most comprehensive compliance framework globally. Battery passports become mandatory from February 2027 for EV and industrial batteries sold in the EU, requiring digital QR codes, carbon footprint declarations, full supply chain traceability, and recycled content targets. Maximum lifecycle carbon footprint thresholds may exclude high-carbon Indonesian nickel from European markets entirely.^[50] The US Inflation Reduction Act creates parallel pressure: its clean vehicle tax credits require critical minerals sourced from countries with which the US has a free trade agreement, or from recycling in North America. Australia qualifies as a US FTA partner; Indonesia does not. This asymmetry creates a specific opportunity: joint Australia-Indonesia supply chains – where Australian-origin minerals are processed in Indonesia under a bilateral FTA framework – could establish IRA-compliant sourcing pathways that neither partner achieves alone. Standards alignment is therefore not only a trade facilitation measure but a pathway to third-market compliance that creates genuine commercial value.

Third, mutual recognition arrangements offer a proven pathway to reduce standards-related trade friction – though the timeline is longer than "quick win" framing suggests. Government-to-government organic equivalence arrangements – such as Australia-Taiwan (2020) and Australia-India under ECTA (2025) – demonstrate that mutual recognition is achievable without complete standards harmonisation, but each required sustained technical engagement over several years.^[51] For critical minerals ESG certification, the challenge is greater: organic standards apply to well-defined product categories with established testing protocols, while mining sustainability standards involve more complex and contested measurement methodologies – carbon footprint accounting, biodiversity impact, labour rights compliance. The Philippines' adoption of the Towards Sustainable Mining (TSM) framework – following a six-year preparation period before full implementation by all 19 COMP member-companies in 2024 – demonstrates both Southeast Asian appetite for Australian-compatible standards and the realistic timeline for institutional adoption.^[52] A three-to-five-year pathway from initial bilateral discussions to operational mutual recognition is realistic; expectations of near-term completion are not. The Australian Agricultural Sustainability Framework, developed with \$9 million in government funding across two stages (2020–2026) under NFF custodianship, offers a template for industry-led standards development applicable to critical minerals ESG certification – and that investment figure provides an indicative cost benchmark for developing equivalent frameworks in the mining sector.^[53]

3.5 The Circular Economy Dimension

Battery end-of-life management represents an emerging dimension of the critical minerals supply chain that existing FTA architecture does not address – a concrete case where regulatory incoherence impedes both industry development and circular economy outcomes.

The Basel Convention on Transboundary Movement of Hazardous Wastes classifies end-of-life batteries as hazardous waste, requiring domestic processing where capability exists or permits for export. In practice, enforcement in Australia is inconsistent — stakeholders reported that multiple companies openly export batteries for processing without required permits — while compliant firms bear additional costs that reduce their competitiveness. This regulatory incoherence directly hinders the growth of Australia's nascent battery recycling industry.^[54]

Southeast Asia's denser markets are often better positioned for battery recycling than Australia's dispersed population centres. Industry projections estimate Southeast Asia will accumulate over 2,100 GWh of used EV batteries by 2040.^[55] Australia could face over one million tonnes of solar panel waste by the same date, with only 17% of solar panel components currently recycled.^[56] These volumes create both the imperative and the commercial opportunity for regional circular economy integration.

The "waste-versus-product" regulatory classification, however, creates a fundamental barrier. Materials that could flow as valuable inputs into a regional circular economy are instead classified as hazardous waste subject to cumbersome permitting. Ongoing uncertainty in Australia's interpretation and enforcement of Basel Convention obligations for battery materials underscores the need to coordinate environment and trade policy — a specific instance of the coordination challenges discussed in Section 3.3.^[57]

Circular economy provisions in FTA modernisation should address waste classification alignment, cross-border recycling frameworks, and extended producer responsibility harmonisation — treating end-of-life batteries and solar panels not as waste but as the upstream inputs to the next generation of critical minerals supply chains.

3.6 Supply Chain Integration Potential

Each of the five Southeast Asian partner countries offers a distinct entry point into critical minerals supply chain integration, shaped by its resource endowments, institutional readiness, and policy environment. The strategic challenge is not to select a single preferred partner but to develop parallel engagement calibrated to each country's specific circumstances — with Indonesia offering scale, the Philippines standards alignment, Malaysia strategic processing depth, Vietnam rare earth diversification, and Thailand manufacturing integration.

Indonesia: The largest opportunity by scale. Australia's lithium resources complement Indonesia's nickel dominance, creating the foundation for integrated EV battery value chains. Former President Widodo expressed interest in importing Australian lithium to complement Indonesian nickel for "a fully integrated EV battery supply chain in Southeast Asia."^[58] The July 2023 Western Australia-KADIN Plan of Action for joint critical minerals and EV battery supply chain development demonstrates active government-level pursuit of integration. The transition to the Prabowo Subianto administration has not altered the fundamental direction: the *hilirisasi* (downstream processing) policy represents a cross-administration consensus maintained since at least 2014, and early indications suggest continuity — if not intensification — of resource nationalism as an industrial strategy. The challenge is reducing Chinese dominance of processing investment and creating space for Australian and other Western participation.

Philippines: The closest alignment with Australian standards and practices, making it the most natural partner for deep FTA-enabled integration. The Philippines is the only Asian country implementing the Towards Sustainable Mining (TSM) framework alongside Australia — this shared standards architecture provides a bilateral foundation for mutual recognition arrangements that could serve as a template for wider ASEAN adoption.^[52:1] With approximately \$1 trillion in untapped mineral reserves^[23:1] and roughly 90% of nickel ore currently exported to China,^[12:1] the strategic opportunity is to develop joint processing capacity that diversifies export destinations. Philippine industry explicitly welcomes Australian investment and technology, though it acknowledges the difficulty of developing a downstream industry without Chinese participation.^[59] FTA modernisation can address specific Philippine barriers: permitting timelines that can extend to a decade, inconsistent local government regulations, and the absence of dedicated mining services commitments in AANZFTA. The Philippines' strong institutional frameworks — including the

Indigenous Peoples' Rights Act (IPRA) with its Free, Prior, and Informed Consent provisions — demonstrate that Indigenous consultation requirements are already a material factor in mining project approvals across the region, reinforcing the case for embedding such frameworks within FTA investment facilitation provisions (Recommendation 3.6). SAFTA and AANZFTA are the priority agreement vehicles for Philippines-specific modernisation.

Malaysia: The Lynas rare earth processing facility at Kuantan provides a globally significant model for Australian-Southeast Asian minerals processing partnership outside Chinese control — one that has now achieved a milestone in supply chain diversification with the first production of heavy rare-earth product (dysprosium and terbium) outside China from its new separation circuit in May 2025^[60] — and a case study in both the potential and the regulatory challenges of cross-border minerals investment. The political contentiousness surrounding Lynas's operating licence renewals illustrates why investment facilitation provisions emphasising transparent licensing processes and defined review timelines are essential.^[61] Malaysia's 2024 export moratorium on raw rare earths reflects alignment with value-capture priorities that FTA modernisation must accommodate rather than resist. MAFTA and AANZFTA provide the primary agreement vehicles, with MAFTA's relatively narrow services coverage making it a priority for METS schedule expansion. The Federation of Malaysian Manufacturers has endorsed expanding collaboration through MoU frameworks, and Malaysia's advanced manufacturing base — particularly in semiconductor fabrication and electronics — creates downstream integration opportunities where Australian critical minerals feed into Malaysian high-technology manufacturing for regional and global markets.

Vietnam: Elevation to Comprehensive Strategic Partnership with Australia in March 2024 creates the strongest bilateral political framework of any ASEAN partner, and Vietnam's rare earth reserves^[25:1] — represent a strategic diversification opportunity of the first order. The Vietnamese government has explicitly welcomed Australian "investment and cooperation in advanced and modern technology to optimise the exploitation and deep processing of key minerals."^[62] FTA modernisation can address Vietnam-specific barriers: while Vietnam is a CPTPP party (providing a high-standards baseline), its critical minerals sector remains underdeveloped and subject to CPTPP Annex 2-C carve-outs permitting export duties on certain raw minerals. Skills development partnerships through TAFE and vocational training programs provide practical mechanisms that could be formalised through AANZFTA's economic cooperation chapter or a bilateral technology transfer framework under the Comprehensive Strategic Partnership. AANZFTA is the primary agreement vehicle given its multilateral scope and new TSD chapter, complemented by CPTPP's existing high-standards disciplines.

Thailand: Southeast Asia's leading EV manufacturing hub, with an established automotive manufacturing ecosystem that has attracted major investments from BYD (US\$490 million assembly plant opened 2024), alongside continued commitments from Toyota, Changan, Great Wall Motor, and SAIC.^[63] This makes Thailand the most immediate opportunity for integrating Australian mineral inputs into regional green economy value chains. Australian companies are already investing in Thai processing — Alpha Fine Chemicals' planned nickel sulphate plant in Rayong targets 40,000 tonnes annual production for the battery market.^[64] FTA modernisation through TAFTA and AANZFTA can address the specific challenge of connecting upstream Australian mineral supply with Thailand's midstream processing and downstream manufacturing. Green rules of origin provisions are particularly relevant here: ensuring that batteries and EV components manufactured in Thailand using Australian minerals qualify for preferential treatment under the full cumulation provisions of AANZFTA's 2025 upgrade. Thailand's Board of Investment incentives for EV manufacturing create a receptive policy environment for formalising these linkages through FTA institutional mechanisms.

3.7 Gender, Inclusivity, and Just Transition

The critical minerals supply chain integration this report recommends will require a substantial expansion and diversification of the mining and processing workforce across both Australia and Southeast Asia — and the current workforce is too narrow and too small to deliver it. This section examines three dimensions of that workforce constraint — gender composition, SME participation, and just transition — each directly affecting the feasibility and sustainability of the supply chain partnerships that FTA modernisation seeks to enable. These dimensions also reflect the grant

agreement's requirement to address "gender and inclusivity" as emerging trade areas, and the *Invested* strategy's identification of workforce gaps as a binding constraint on resources sector growth.

The mining workforce gender gap directly constrains critical minerals supply chain capacity. Female workforce participation remains low across all relevant jurisdictions: approximately 20% in Australia (against a target of 30% by 2030), with estimates ranging from 8% in Indonesia to 15% in the Philippines.^[65] Women's formal workforce participation has declined in most Southeast Asian nations over the past decade.^[66] The *Invested* strategy identifies this as a binding constraint: "a major skills deficit and lack of gender equality in the industry workforce" is a significant challenge to resources sector growth.^[67] The STEM pipeline compounds the gap — only 36% of Australian STEM students are women, and in Southeast Asia the figure is one in six.^[68] If Australia and Southeast Asian partners intend to build joint processing capacity at the scale needed to diversify away from Chinese-dominated supply chains, they cannot do so while drawing from less than half the available talent pool. Addressing workforce gender composition is not adjacent to the supply chain integration agenda — it is a prerequisite for delivering it.

This has direct implications for FTA architecture. If supply chain integration generates new processing and manufacturing jobs across Southeast Asia — as the joint value chain development approach in Section 4 anticipates — the accompanying policy frameworks will determine whether those jobs draw on the full workforce. Gender-responsive provisions in FTAs — including commitments on women's workforce participation targets, anti-harassment standards in mining workplaces, and gender-responsive procurement — provide the mechanism to ensure that supply chain integration can access the workforce it requires. International FTA practice is moving in this direction. The AANZFTA 2025 upgrade introduced a new sustainable development chapter alongside new chapters on MSMEs and Government Procurement, creating a framework for addressing inclusive trade within the ASEAN FTA architecture.^[69] The *Invested* strategy explicitly identifies "gender and small business" as objectives that Australia's trade architecture should advance.^[70] Australia's Investing in Women program has invested in 82 women-led SMEs in Indonesia, the Philippines, and Vietnam since 2016, catalysing over A\$525 million in additional capital — demonstrating the commercial viability of gender-focused economic engagement in sectors relevant to supply chain development.^[71]

SME inclusivity is directly relevant to FTA utilisation. The utilisation gap documented in Section 3.1 is heavily skewed by firm size: smaller exporters — including the METS firms central to supply chain integration — disproportionately lack capacity to navigate Certificate of Origin procedures and compliance requirements, with ASEAN Trade in Goods Agreement (ATIGA) utilisation remaining at approximately 40% of intra-ASEAN trade due to procedurally burdensome processes.^[72] Given that Australia's METS sector comprises predominantly small and medium enterprises, this participation barrier directly impedes the services trade underpinning joint value chain development. The AANZFTA Implementation Support Program's MSME handbook and the AANZFTA upgrade's new MSME chapter represent institutional responses — but translating these frameworks into practical SME access to FTA preferences for critical minerals trade requires targeted business support mechanisms.

The just transition dimension shapes the political sustainability of supply chain integration in partner countries. Southeast Asia will require an additional 5.5 million trained workers in the renewables sector alone by 2050, and the shift from fossil fuel-dependent to clean energy economies will reshape communities across mining regions in both Australia and partner countries.^[73] The workforce challenge for critical minerals is acute: new processing facilities in Indonesia, the Philippines, and Vietnam will require skilled workers in metallurgy, environmental management, and plant operations — skills that FTA provisions on vocational training and professional mobility can help supply. The *Invested* strategy recommends that Australia "support industry and education and training providers to develop and promote green qualifications for the Southeast Asian market" (Recommendation 42).^[74] IA-CEPA already contains unique provisions for vocational training and skills exchange, including up to 200 Indonesian skills training visas annually — a bilateral model that stakeholders across all five partner countries have identified as a replicable framework for workforce development.^[75] The Thiess apprenticeship program in Indonesia, which has trained over 1,600 students to Australian standards certified by CQUniversity since 1992 with a

95% completion rate, demonstrates that cross-border skills development in mining is both feasible and valued.^[76]

Yet formal FTA architecture has not kept pace with these operational realities. No existing Australia-Southeast Asia FTA contains provisions addressing just transition in mining communities – workforce retraining for displaced workers, community transition planning for regions affected by industrial restructuring, or social impact assessment requirements for major resource projects. The Centre for Policy Development and Climateworks Centre's 2024 Australia-Indonesia Energy Transition Policy Dialogue focused explicitly on social-justice aspects of coal phase-out and workforce transition, but this represents the only dedicated treatment of just transition in the bilateral policy landscape – identified as "an emerging research gap for Australian cooperation."^[77] Civil society and labour movement participants reinforced this finding, observing that the measure of success for FTA modernisation is whether trade and investment arrangements generate employment with decent wages and conditions – not simply increased trade volumes. They identified the risk that accelerated integration without coordinated domestic standards oversight could undermine labour and environmental floor conditions, and argued that bilateral training and skills exchange programs should be designed not merely as capacity-building tools but as mechanisms for standards convergence across the partnership. Without provisions that address the distributional effects of supply chain restructuring, the political licence for deeper integration in partner countries will remain fragile. Recommendations 3.7 and 3.8 recommend specific provisions to address these gaps.

3.8 Cross-Sectoral Application: Standards Mutual Recognition as a Transferable Model

The pathfinder methodology requires testing whether findings for critical minerals extend to other priority sectors – particularly agriculture and green economy. The standards mutual recognition approach recommended in Tier 2 (Recommendation 2.2) provides the clearest demonstration of cross-sectoral transferability.

For critical minerals, the project recommends pursuing mutual recognition arrangements for ESG certification and environmental impact assessment standards, building on the Philippines' adoption of the Towards Sustainable Mining (TSM) framework alongside Australia. The underlying logic is straightforward: harmonised standards reduce compliance costs, improve market access, and create incentives for sustainable practice, while fragmented standards impose redundant testing, increase administrative burden, and discourage SME participation in trade.

The identical logic applies to agriculture. Standards fragmentation in sanitary and phytosanitary (SPS) measures, maximum residue levels (MRLs), and organic certification creates the same category of behind-the-border barrier that impedes minerals trade. Australia's existing organic equivalence arrangements – bilateral agreements recognising that organic certification systems in partner countries achieve comparable regulatory assurance through different specific requirements – provide a direct precedent for the mutual recognition approach recommended for ESG standards in mining.^[51:1] In operational terms, "comparable regulatory assurance" means that both parties' systems address the same set of regulatory objectives (environmental protection, worker safety, supply chain traceability) through their own domestic frameworks, verified through joint technical assessment and periodic audit, without requiring either party to adopt the other's specific standards. This is the functional definition that underpins organic equivalence and should be adopted for critical minerals ESG certification. The Australian Agricultural Sustainability Framework, identified in stakeholder consultations as a potential model for minerals ESG certification, demonstrates how industry-led standards frameworks can achieve regulatory recognition across borders.

A specific worked example illustrates the transfer. If Australia and the Philippines negotiate an MRA recognising TSM certification as equivalent to agreed Australian ESG mining standards (as recommended in Tier 2 (Recommendation 2.2)), the same institutional mechanism – bilateral expert committee, equivalence assessment process, mutual recognition agreement – could be adapted for agricultural standards. A joint Australia-Philippines committee that assesses equivalence between Australian and Philippine organic certification systems, or between

respective MRL regimes for specific agricultural products, would follow an identical procedural architecture. The experience gained from negotiating and implementing minerals-sector MRAs would directly lower the institutional costs of extending the approach to agriculture – providing the cross-sectoral benefit that the pathfinder methodology is designed to generate.

4. Strategic Framework: Joint Value Chain Development

Why Partnership Framing Matters

The conventional framing of FTA modernisation focuses on liberalisation: reducing barriers, expanding market access, and facilitating trade. While these remain important, stakeholder consultations consistently emphasised that a partnership framing – focused on joint value chain development – is more productive, more politically achievable, and more strategically durable.

A critical minerals policy expert characterised Australia's current approach as focused almost entirely on exporting raw minerals rather than participating in joint value chains with Southeast Asian partners – a significant missed opportunity given the geopolitical disruptions underway.^[78] Australia's stated commitment to multilateralism and free trade is undermined, in this view, by the failure to support outbound Australian investment in Southeast Asian processing at the same level as it promotes inbound investment in Australian extraction.

The partnership framing addresses three challenges simultaneously. First, it responds to the mercantilist critique that FTA modernisation serves Australia's interests at the expense of Southeast Asian development ambitions. Every partner country in scope pursues downstream processing as a national development priority. Indonesia's export ban, the Philippines' incentive-based approach, Malaysia's rare earth moratorium, and Vietnam's call for "advanced and modern technology" investment all reflect the same aspiration: capturing more value from natural resources. An FTA modernisation agenda that works *with* these aspirations – rather than against them – is both more achievable and more durable.

Second, the partnership approach addresses a related critique of how trade policy is made. Stakeholders from a labour and industry alliance perspective argued that the conventional approach – designing frameworks and then looking for uses – should be inverted. The right starting point is identifying specific bilateral green commodity opportunities and then asking what trade architecture best supports those flows.^[79] This challenges negotiators to articulate the commercial outcomes their provisions are designed to achieve. A senior trade official from a Southeast Asian government offered a complementary perspective: for fast-moving sectors like critical minerals, standalone bilateral cooperation agreements may prove more effective than FTA integration because they can proceed directly to what both sides need without the ratification delays and narrow trade-ministry ownership of formal FTA processes.^[80]

Stakeholders from a labour and industry alliance perspective added a further dimension: the present lack of secure offtake demand is a key challenge preventing green commodity projects from proceeding.^[81] This suggests that FTA modernisation should prioritise provisions that generate demand signals – procurement preferences for sustainably produced minerals, green rules of origin that create market access premiums, and financing mechanisms that de-risk offtake commitments – rather than focusing exclusively on supply-side liberalisation.

Third, joint value chain development directly addresses supply chain diversification. As long as Australian minerals flow to Chinese processors and Southeast Asian ore flows to Chinese buyers, the region's critical minerals trade serves Chinese supply chain consolidation rather than diversification. Redirecting these flows into joint Australia-ASEAN processing partnerships – where Australian lithium meets Indonesian nickel, Australian METS expertise supports Philippine processing development, and Malaysian rare earth refining serves both regional and Western markets – creates the alternative supply chains that AUKUS (the Australia-UK-US security partnership), the Quad, and FORGE all aspire to build.

The bilateral approaches recommended in this report are designed as complements to, not substitutes for, ASEAN centrality in regional economic architecture. AANZFTA — the multilateral agreement covering all five partner countries — is prioritised as the first-mover vehicle precisely because it respects ASEAN's institutional preference for inclusive, consensus-based arrangements. Bilateral instruments (IA-CEPA, MAFTA, TAFTA) then go deeper on issues where the bilateral relationship warrants it. This AANZFTA-first sequencing ensures that Australia's critical minerals engagement strengthens rather than fragments regional economic governance — a principle that ASEAN partners will scrutinise closely given sensitivities about external powers pursuing bilateral arrangements that divide collective bargaining positions.

Complementarity Architecture

Australia and Southeast Asian partners bring distinct but complementary capabilities to critical minerals value chains:

Australia offers: World-leading geological endowments across lithium, rare earths, and other critical minerals; a globally significant METS sector valued at \$17 billion in exports with 62% of companies exporting to Southeast Asia;^[82] strong ESG credentials with significantly lower emissions intensity than coal-powered Indonesian nickel processing;^[83] political stability and transparent regulatory frameworks; and access to allied financing architecture — Export Finance Australia's A\$4 billion Critical Minerals Facility, Japan's JOGMEC equity investment model, the FORGE Finance Network (formerly Minerals Security Partnership Finance Network) coordinating allied government export credit agencies and development finance institutions, and US Development Finance Corporation project financing — as an alternative to the Chinese SOE-backed capital that has dominated Southeast Asian processing investment.^[84]

Southeast Asian partners offer: Substantial nickel, rare earth, and other mineral resource bases; growing processing capacity and manufacturing ecosystems; strategic geographic positioning between major consuming markets; rapidly expanding clean energy manufacturing (particularly EV and battery sectors); and large, skilled workforces with competitive labour costs.

The complementarity is structural, not coincidental. Australia's strengths — upstream extraction, technology, standards, financing — align with Southeast Asia's needs, while Southeast Asia's strengths — resources for processing, manufacturing scale, market positioning — align with Australia's gaps. Indonesian industry has articulated this directly: the Chairman of KADIN stated that countries "must stop seeing each other as competitors and must be complementary," calling for joint battery manufacturing utilising Australian lithium and Indonesian nickel.^[85] Indonesia Battery Corporation's interest in equity investment in Australian lithium mining demonstrates that the complementarity runs in both directions — not just Australian investment into Southeast Asian processing, but Southeast Asian investment into Australian extraction.^[86]

Joint value chain development leverages both sides rather than treating one as a raw material supplier to the other. This is the fundamental shift from a trade relationship based on commodity flows to one based on industrial partnership. The Lynas-JOGMEC-Sojitz partnership demonstrates this model at scale: Japanese public and private investment of US\$250 million from 2011 supported the development of an integrated supply chain from Mount Weld in Western Australia through processing in both Kalgoorlie and Kuantan, Malaysia — producing the first heavy rare earth separation outside China in May 2025 and now exploring permanent magnet manufacturing partnerships in Malaysia and the United States.^[87] This partnership succeeded precisely because it combined Australian resource endowments with Japanese financing and technology, hosted processing in a third country (Malaysia) with mutual benefit, and was anchored in government-supported investment frameworks — the model that FTA modernisation should replicate and extend across additional mineral supply chains and partner countries.

The Broader Strategic Rationale

Joint value chain development serves both economic and strategic interests simultaneously. Economically, it creates mutual benefit that deepens the partnership beyond transactional commodity trade. When Australian and Indonesian companies co-invest in processing, when

Philippine miners adopt Australian sustainability frameworks, when Thai battery manufacturers source Australian minerals through jointly certified supply chains — these relationships create economic interdependencies that are more durable than any FTA text.

Strategically, joint value chains reduce dependence on Chinese-dominated supply chains — building the “diverse, secure and sustainable” supply chains that Australia’s 30 international critical minerals agreements aspire to but have not yet delivered.^[88] As documented in Section 1, many of these agreements “remain dormant” and have been “cherry-picked to be only partially activated,” with outbound supply chain development commitments largely neglected.^{[89][90]} The three-tier framework addresses this by making activation comprehensive — including provisions that support partner country supply chain development, not just those serving Australian export interests. FTA modernisation through joint value chain development provides the commercial architecture to activate these aspirations.

The question is not whether Australia should pursue critical minerals supply chain integration — that strategic case is clear — but whether it can translate ambition into the disciplined policymaking and deeper strategic partnerships required to become an indispensable node in these supply chains.^[91]

The three tiers of the recommended framework are designed to interlock as a self-reinforcing system. Tier 2 standards mutual recognition arrangements provide the certification infrastructure that makes Tier 3 green rules of origin operational — producers cannot claim the “green bonus” without recognised ESG certification. Green ROO in turn create the market incentive for producers to invest in meeting Tier 3 ESG safeguards — the compliance effort has a tangible commercial payoff. And the Tier 2 business advisory mechanism generates the implementation data on FTA utilisation, standards adoption, and trade volumes that feed the review mechanisms across all tiers. This interlocking design is deliberate: provisions that depend on each other for effectiveness are more durable than those that stand alone, and harder to leave dormant.

The strategic vision is clear: partnership, joint value chains, diversification away from concentrated supply chains. But strategy without operational specificity is precisely what has left agreements dormant. The three-tier framework that follows translates this partnership ethic into specific provisions — each grounded in the evidence and consultation findings above.

5. Recommendations: Three-Tier Activation and Modernisation Framework

The recommendations are structured in three tiers reflecting both urgency and institutional action required: activation of existing structures requiring no new mechanisms, creation of new administrative mechanisms achievable without treaty change, and negotiation of new treaty provisions. This tiered approach responds directly to stakeholder findings: the implementation gap (Tier 1), institutional and administrative weaknesses (Tier 2), and genuine gaps in FTA coverage (Tier 3) each require different responses. Pursuing all three simultaneously — with clear prioritisation — maximises both near-term impact and long-term structural change. While developed through the critical minerals pathfinder, the tiered framework is designed for cross-sectoral extension: the utilisation gap that motivates Tier 1 activation applies equally to agriculture and services trade; the institutional mechanisms proposed in Tier 2 generate procedural precedent transferable to other sectors; and the modular provisions in Tier 3 are architected for adaptation beyond minerals.

Tier 1: Activate Existing Provisions

Near-term (2026–2027). No renegotiation required. Administrative and diplomatic action.

Activation requires more than adding agenda items to existing meetings. Stakeholders consistently identified the gap between signing and operationalising as the defining failure of Australia’s critical minerals partnerships.^[89:1] The operational prerequisite is dedicated coordination personnel,

resourced secretariat functions, and accountability mechanisms that prevent institutional inertia from consuming political commitment. The *Invested* strategy's recommendation to increase whole-of-government engagement capability in Southeast Asian missions (Recommendation 19) provides the institutional foundation for this activation.^[92] The IA-CEPA Joint Committee's \$40 million Katalis economic cooperation program provides the financial foundation.^[93]

1.1 Operationalise economic cooperation chapters

Existing agreements contain underutilised economic cooperation and capacity building chapters directly relevant to critical minerals. IA-CEPA Chapter 15 establishes cooperation on human capital development, skills exchange, and technology cooperation — including up to 200 Indonesian skills training visas annually.^[75:1] RCEP Chapter 15 provides frameworks for economic and technical cooperation. AANZFTA Chapter 12 (now supplemented by the 2025 Trade and Sustainable Development chapter) creates cooperation mechanisms for green economy and circular economy.^[94]

Specific actions: Propose critical minerals as an explicit agenda item for each agreement's joint committee or economic cooperation committee; develop practical work programs with deliverables and timelines; resource Australian participation through dedicated funding rather than relying on departmental discretion.

Institutional vehicle: DFAT South-East Asia Trade Policy Section, working through the IA-CEPA Joint Committee (Indonesia), AANZFTA Economic Cooperation Committee (multilateral), and RCEP Joint Committee (regional). *Decision gate:* Critical minerals agenda items tabled at each relevant committee's next scheduled meeting — IA-CEPA Joint Committee by Q4 2026, AANZFTA committees by mid-2027. *Success metric:* Formal critical minerals work programs adopted under at least three FTA cooperation frameworks by end-2027, with annual deliverable reporting.

Country-specific feasibility: Readiness varies significantly. **Indonesia** is the most immediately actionable — IA-CEPA's Joint Committee has met three times since entry into force, its \$40 million Katalis economic cooperation program provides dedicated funding, and the IA-CEPA General Review (submissions due March 2026) creates an imminent institutional entry point. **The Philippines** lacks a bilateral FTA joint committee (SAFTA has limited institutional machinery), making the AANZFTA framework and the bilateral Philippines-Australia Trade and Investment Dialogue the primary vehicles. **Vietnam** benefits from the March 2024 Comprehensive Strategic Partnership elevation, which includes a critical minerals dialogue — a bilateral precedent that should be leveraged before seeking broader AANZFTA action. **Malaysia** and **Thailand** present thinner institutional pathways: MAFTA and TAFTA have narrower economic cooperation provisions and less active joint committee processes, making AANZFTA the more realistic vehicle for initial activation with both partners.

1.2 FTA awareness and utilisation improvement

The 17%/28% utilisation gap represents a substantial unrealised opportunity. These survey-based figures are reinforced by complementary evidence: ATIGA utilisation remains at approximately 40% of intra-ASEAN trade due to burdensome Certificate of Origin procedures,^[72:1] the Australian Dairy Industry Council documented that third-party certification requirements under older FTAs add cost and complexity that CPTPP's self-certification model has already resolved for some markets,^[4:2] and the IA-CEPA Joint Committee has acknowledged that tariff rate quotas remain "not fully implemented" five years after entry into force.^[38:1] Improving awareness and reducing compliance burden could deliver significant trade benefits without any change to agreement text.

Specific actions: Develop targeted business awareness campaigns for the minerals and METS sectors, emphasising practical benefits of FTA provisions; create user-friendly digital tools for navigating rules of origin across overlapping agreements; work with Austrade and bilateral business councils to integrate FTA utilisation into existing business facilitation services; benchmark and report utilisation rates annually.

Institutional vehicle: Austrade, in partnership with Austmine, the Minerals Council of Australia, and bilateral business councils (AustCham ASEAN, Indonesia-Australia Business Council, Philippines-

Australia Business Council). *Decision gate*: Awareness campaign design completed and funded by Q2 2026; digital ROO navigation tool operational by Q4 2026. *Success metric*: Baseline FTA utilisation survey of critical minerals and METS firms completed by Q3 2026; utilisation rate reaches 30% by end-2028 (from the current 17% cross-sectoral baseline); annual utilisation reporting published from 2027.

1.3 Activate bilateral institutional mechanisms

Existing bilateral institutional mechanisms — joint committee meetings, ministerial consultations, economic dialogues — provide ready-made platforms for critical minerals cooperation that are currently underutilised, with narrow agendas and limited sectoral participation.^[95]

Specific actions: Expand the agenda of IA-CEPA Joint Committee meetings to include critical minerals supply chain integration; propose critical minerals as a standing item for Australia-Philippines bilateral ministerial meetings and the Philippines-Australia Trade Investment Dialogue; leverage AANZFTA's new TSD chapter to establish a critical minerals cooperation workstream under its green economy provisions.

Institutional vehicle: DFAT bilateral divisions, coordinating with the Department of Industry, Science and Resources (DISR) Critical Minerals Office. *Decision gate*: Critical minerals raised at the next IA-CEPA Joint Committee meeting (expected H2 2026); critical minerals workstream proposed under AANZFTA TSD chapter by Q2 2027. *Success metric*: Critical minerals is a standing agenda item at IA-CEPA Joint Committee and at least two other bilateral dialogue mechanisms by end-2027; at least one joint committee has adopted a critical minerals cooperation work program with measurable deliverables.

Institutional pathways by partner: **Indonesia** — the IA-CEPA Joint Committee (third meeting held June 2025) is the primary vehicle; its established track record of addressing implementation issues (feed grain TRQs, import permit delays) demonstrates the capacity to absorb a critical minerals agenda. **Philippines** — the Philippines-Australia Trade and Investment Dialogue and the bilateral ministerial meeting cycle provide the institutional vehicles; the Marcos administration's reversal of the open-pit mining moratorium (2022) and launch of digital permitting (October 2024) signal political openness. **Vietnam** — the Comprehensive Strategic Partnership's critical minerals dialogue, established March 2024, provides a dedicated bilateral channel that is newer but has stronger political backing than any comparable mechanism with other partners. **Malaysia** — the FMM-Ai Group MoU renewal (2025) and Malaysia Australia Business Council engagement provide business-level pathways, but MAFTA's institutional machinery is less developed; the AANZFTA committee structure is the more realistic government-level vehicle. **Thailand** — TAFTA's institutional mechanisms are the thinnest of the five bilateral agreements, and Thai industry has not publicly articulated Australia-specific critical minerals preferences, making AANZFTA the primary pathway and suggesting that Thailand-specific activation will follow rather than lead regional efforts.

1.4 Leverage AANZFTA 2025 Trade and Sustainable Development upgrade

The AANZFTA Second Protocol, in force since April 2025, introduces a Trade and Sustainable Development chapter — a significant addition to the ASEAN-led FTA architecture. Its provisions on green economy, circular economy, and energy cooperation are directly relevant to critical minerals.^[96]

Specific actions: Propose a critical minerals pilot project under the TSD chapter's green economy cooperation provisions; use the full cumulation provisions of the AANZFTA upgrade to simplify rules of origin for minerals processed across multiple ASEAN countries; advocate for transitioning AANZFTA services schedules to negative list format to address METS sector coverage gaps.

Institutional vehicle: AANZFTA FTA Joint Committee and TSD Sub-Committee, with Australia's proposal coordinated through DFAT's Office of Trade Negotiations. *Decision gate*: Critical minerals cooperation pilot proposal submitted to AANZFTA Senior Economic Officials by mid-2027; negative-list services scheduling advocacy paper circulated to AANZFTA parties by Q4 2027. *Success metric*: At least one AANZFTA critical minerals pilot project approved and funded by end-

2027; full cumulation provisions actively used for at least three cross-border mineral processing supply chains by 2029.

Tier 2: Institutional and Administrative Improvements

Medium-term (2027–2030). Administrative action requiring ministerial endorsement but not FTA renegotiation. Lead coordination: DFAT South-East Asia Division and DISR Critical Minerals Office, reporting to the Trade 2040 Taskforce.

2.1 Standing critical minerals business advisory mechanism

The absence of a permanent, funded business-government dialogue on critical minerals trade is the most significant institutional gap identified through consultations. Current engagement is transactional — individual missions rather than ongoing dialogue — lacking the institutional continuity needed to inform implementation or identify practical barriers in real time.^[97]

Recommended model: Establish a bilateral Critical Minerals Business Advisory Council, meeting at least biannually, initially for the Australia-Indonesia and Australia-Philippines relationships. The model builds on the 2016 Indonesia-Australia Business Partnership Group process — the only cross-border industry consensus submission between Australian and Indonesian peak bodies (ACCI, AIBC, IABC, KADIN, Ai Group, APINDO) — which stakeholders identified as an unreplicated but replicable model for structured business engagement.^[98] Participants with direct experience in that process observed that bilateral business councils cannot sustain the necessary engagement on their own resources, and that government has a structural obligation to fund ongoing advisory mechanisms as a precondition for effective FTA implementation — replacing transactional trade missions with the sustained relationship-building that commercial partnerships in Southeast Asia require. The council includes private sector representatives from mining, METS, processing, and finance; government trade and resources officials; and academic expertise. It is resourced with a dedicated secretariat function and produces annual implementation reports. Council reports are published, with government response required within 90 days, creating a public accountability loop that prevents the advisory mechanism from becoming another dormant institutional structure. The IA-CEPA institutional framework hosts the Indonesia-Australia iteration.

Indicative cost: A funded secretariat with biannual meetings, annual reporting, and travel support for industry representatives would require approximately A\$1.5–2.5 million per bilateral council per annum — modest relative to the A\$40 million IA-CEPA Katalis program, the A\$40 million International Partnerships in Critical Minerals Program, and the *Invested* strategy's Business Champions initiative (which has generated over A\$1 billion in commercial outcomes since March 2024).^[95:1] The Indonesia-Australia council is funded through the IA-CEPA economic cooperation program; the Philippines-Australia council requires dedicated DFAT funding or allocation through the AANZFTA Implementation Support Program.

Sequencing rationale: Indonesia and the Philippines are prioritised because they combine the strongest existing bilateral institutional infrastructure with the greatest strategic significance for critical minerals. Indonesia offers scale (KADIN has explicitly advocated for partnership) and IA-CEPA provides a hosting framework. The Philippines offers standards alignment (TSM adoption) and explicit industry welcome for Australian investment. Vietnam, Malaysia, and Thailand should follow as the model is proven — Vietnam in 2028–2029 (leveraging the Comprehensive Strategic Partnership), Malaysia and Thailand through the AANZFTA multilateral track.

Institutional vehicle: IA-CEPA Joint Committee (for the Australia-Indonesia council), with DFAT South-East Asia Division as lead coordinating agency. *Decision gate:* Ministerial endorsement of the Australia-Indonesia Business Advisory Council terms of reference and funding by mid-2027; Australia-Philippines council terms of reference agreed by mid-2028. *Success metric:* First annual implementation report published by end-2028; government response within 90 days of each report; at least three specific implementation barriers identified and resolved through the advisory mechanism by 2030.

2.2 Standards mutual recognition arrangements

Standards alignment emerged as the highest-value opportunity across all consultations — but the pathway to mutual recognition is more demanding than “quick win” framing suggests. Mutual recognition does not require complete standards harmonisation — it requires agreement that each party’s standards, while different, deliver functionally comparable regulatory assurance across testing, certification, and enforcement. The organic equivalence model (Australia-Taiwan 2020, Australia-India 2025) demonstrates that government-to-government equivalence arrangements are achievable, but each required multiple years of technical consultations and on-site witness assessments before conclusion.^[99] The Philippines’ adoption of the Towards Sustainable Mining (TSM) framework — following a six-year preparation period before full implementation in 2024 — illustrates the realistic timeline: even where institutional willingness exists, building the technical capacity for mutual recognition in mining and environmental standards is a multi-year undertaking.^[52:2]

The ASEAN experience with professional mutual recognition arrangements provides a cautionary precedent. ASEAN-wide MRAs cover only eight professions, affect approximately 5% of jobs in the region, and a decade after the engineering MRA was signed, only seven of ten countries had functioning implementation mechanisms.^[100] The lesson is not that mutual recognition is unachievable but that it requires sustained institutional investment — dedicated technical committees, ongoing compliance monitoring, and dispute resolution capacity — rather than one-off agreements. Australia should plan for a three-to-five-year negotiation and implementation timeline for each priority area, beginning with the Philippines (where TSM provides an existing foundation) and extending to Indonesia and Vietnam as institutional readiness develops. Malaysia and Thailand present distinct challenges: Malaysia’s regulatory environment for rare earth processing remains politically contested, complicating technical harmonisation efforts, while Thailand’s standards architecture is oriented toward Japanese and Chinese frameworks with limited existing alignment to Australian practice.

Priority areas: Environmental impact assessment mutual recognition (highest feasibility where both parties already apply IFC Performance Standards); sustainability certification for critical minerals (building on the TSM framework, with the Philippines as the pilot bilateral partner); battery and EV component technical standards (medium-term, requiring alignment with EU Battery Regulation requirements as a common reference point); professional qualifications for mining engineers and environmental assessors; ESG reporting standard equivalence for financing purposes.

Institutional vehicle: Bilateral technical working groups established under AANZFTA’s TSD Sub-Committee, with the Australia-Philippines TSM/ESG equivalence negotiation led by DISR in coordination with the Chamber of Mines of the Philippines. *Decision gate:* Joint technical scoping study for Australia-Philippines ESG certification equivalence completed by Q4 2027; formal MRA negotiations launched by mid-2028. *Success metric:* At least one bilateral MRA (EIA or ESG certification) signed by 2030; at least two additional MRAs in active negotiation by 2030; measurable reduction in duplicative compliance testing costs reported by participating firms.

2.3 Trade facilitation digitisation

Digital trade facilitation offers significant compliance cost reductions. Self-certification of origin, proven in CPTPP and other modern FTAs, eliminates the administrative burden of third-party certification, while electronic certificates, digital customs processing, and single-window systems reduce delays and errors.

Specific actions: Extend CPTPP-style self-certification to all Australia-Southeast Asia FTAs; develop digital certificates of origin for critical minerals with embedded traceability data; pilot blockchain or distributed ledger technology for cross-border supply chain verification; establish interoperable digital customs platforms aligned with ASEAN Single Window initiatives.

Institutional vehicle: AANZFTA Rules of Origin Sub-Committee for multilateral extension; the Australian Border Force (ABF) and Austrade for digital systems development. *Decision gate:* Digital Certificate of Origin pilot for critical minerals launched under AANZFTA by Q4 2027; self-certification extension proposals tabled at IA-CEPA and AANZFTA committee meetings by mid-2028. *Success metric:* Self-certification operational for critical minerals under all Australia-

Southeast Asia FTAs by 2029; average Certificate of Origin processing time reduced by 50% for participating firms; at least 100 critical minerals firms using digital COO tools by 2029.

Country-specific readiness: Vietnam, Malaysia, and Thailand — all CPTPP parties — already operate under self-certification disciplines and have more advanced digital customs infrastructure, making them the natural first movers for extending digital trade facilitation to other bilateral FTAs. The Philippines has launched digital permitting for mining (October 2024) but its customs digitisation is less advanced — Australia's A\$25 million IPEF technical assistance allocation provides the funding mechanism for Philippines-specific customs digitisation capacity building.^[29:1] Indonesia presents the greatest institutional challenge: its customs administration is complex, Certificate of Origin documentation requirements are burdensome, and the CPTPP disciplines do not apply (Indonesia is not a CPTPP member). The AANZFTA upgrade's simplified rules of origin provide the entry point, but full digital trade facilitation with Indonesia will require dedicated bilateral investment through the IA-CEPA framework.

2.4 Circular economy regulatory alignment

Address the waste-versus-product classification barrier identified in Section 3.5 by developing shared frameworks for cross-border movement of materials with circular economy value.

Specific actions: Negotiate bilateral understandings on Basel Convention classifications for battery materials, distinguishing recycling inputs from hazardous waste; develop harmonised extended producer responsibility frameworks for batteries and solar panels; establish agreed protocols for cross-border battery recycling flows, including quality and environmental standards; create a regional pilot for battery passport interoperability aligned with EU Battery Regulation requirements.

Institutional vehicle: DCCEEW (for Basel Convention classifications), coordinating with DFAT and DISR through the cross-departmental strategy group (Recommendation 2.5). Bilateral understandings negotiated through IA-CEPA and AANZFTA environmental cooperation mechanisms. *Decision gate:* Joint Australia-Indonesia scoping paper on battery materials classification completed by Q2 2028; regional battery passport interoperability pilot proposal submitted to AANZFTA TSD Sub-Committee by end-2028. *Success metric:* At least one bilateral Basel Convention understanding on battery materials signed by 2029; regional battery passport pilot operational with at least two ASEAN partners by 2030.

2.5 Whole-of-government coordination

Effective FTA modernisation for critical minerals requires coordination across trade, resources, environment, and foreign affairs portfolios — the gaps documented in Section 3.3. The following recommendations propose constructive institutional reform.

Specific actions: Establish a cross-departmental critical minerals trade strategy group at senior officials level, including DFAT, DISR, the Department of Climate Change, Energy, the Environment and Water (DCCEEW), Treasury, and relevant state government agencies; develop a unified Australian position on critical minerals trade and investment that reconciles trade liberalisation, environmental protection, and industry development objectives; create regular reporting mechanisms linking FTA implementation outcomes to critical minerals strategy objectives.

Decision gate: Strategy group convened and terms of reference agreed by Q2 2027; unified Australian position paper on critical minerals trade and investment completed by Q4 2027. *Success metric:* Strategy group meets at least quarterly from 2027; annual progress report published linking FTA implementation actions to critical minerals strategy objectives; demonstrable reduction in inter-departmental delays on critical minerals trade policy decisions as reported by industry advisory councils.

Institutional pathway: The *Invested* strategy's Trade 2040 Taskforce provides the mandate for this coordination. The group reports to the Taskforce and is convened jointly by DFAT and DISR, reflecting the dual trade-and-industry nature of critical minerals policy. The *Invested* strategy's Recommendation 19 — increasing whole-of-government engagement capability in Southeast Asian

missions — provides the staffing rationale. Indicative cost is modest (primarily coordination overhead on existing personnel), but effectiveness depends on dedicated secretariat support and senior-level participation that creates accountability across portfolios.

2.6 Track 1.5 critical minerals dialogue

Establish a biannual Track 1.5 dialogue co-hosted by Australian and Southeast Asian research institutions, with government participation at senior officials level and industry representation. Stakeholders across government, industry, and academia independently identified the absence of such a forum — enabling candid, Chatham House Rule exchanges more substantive than trade missions but less formal than ministerial meetings — as a structural gap in Australia's critical minerals engagement.^[101] The dialogue would validate implementation progress, surface emerging barriers, and maintain relationship continuity between official meetings, building on the precedent of existing Track 1.5 critical minerals dialogues and the Centre for Policy Development's Australia-Indonesia Energy Transition Policy Dialogue.

Institutional pathway and cost: The dialogue is co-hosted by an Australian research institution (such as ASPI, which has demonstrated convening capacity in the critical minerals domain, or a university with Southeast Asia expertise) and a regional partner institution, with DFAT funding and senior officials participation. Indicative cost is A\$300,000–500,000 per annum for a biannual dialogue with regional participation — comparable to existing Track 1.5 dialogues in the security domain. The Centre for Policy Development's Australia-Indonesia Energy Transition Policy Dialogue (which held its fourth meeting in August 2024) provides an operational model for the format, including how to integrate just transition and social-justice dimensions alongside technical trade discussions.^[77:1]

Decision gate: Co-hosting institution selected and DFAT funding approved by Q4 2027; inaugural dialogue convened by Q2 2028. *Success metric:* Dialogue convened biannually from 2028, with participation from senior officials of at least three partner countries; at least two actionable policy recommendations from each dialogue formally transmitted to the Trade 2040 Taskforce for consideration.

Tier 3: Targeted New FTA Provisions

Longer-term (2028–2035). Requires formal negotiation mandates from the Minister for Trade. Builds on Tier 1 activation and Tier 2 institutional foundations — the Phase 2 → Phase 3 decision gate (Section 7) ensures that negotiating resources are committed only where institutional readiness supports implementation. Lead coordination: DFAT Office of Trade Negotiations, with technical input from DISR and the business advisory councils.

3.1 Critical minerals chapter or side agreement [priority: IA-CEPA, AANZFTA]

Where existing agreements lack minerals-specific provisions, negotiate dedicated critical minerals chapters or standalone side agreements. The US-Japan Critical Minerals Agreement (2023) and the EU-Chile Advanced Framework Agreement energy and raw materials chapter provide actionable precedents.^[102] The US-Japan model — a compact, standalone agreement focused on tariff elimination, export duty disciplines, and supply chain cooperation — is well-suited to ASEAN contexts, where consensus-based decision-making and sovereignty sensitivities favour focused instruments over comprehensive chapters.^[46:1] The EU-Chile AFA takes a more ambitious approach, embedding critical minerals within a broader sustainable trade framework with enforceable environmental and labour provisions — a model better suited to deeper bilateral agreements such as IA-CEPA.

Feasibility varies significantly across agreements and partners. AANZFTA's consensus requirement means provisions must accommodate the full spectrum from Singapore's open economy to Indonesia's resource nationalism — a constraint favouring cooperative frameworks over binding liberalisation commitments.^[46:2] IA-CEPA offers the deepest bilateral platform but must navigate Indonesia's export ban on unprocessed nickel ore and the 51% mandatory divestment requirement

— provisions framed around joint value chain development rather than raw material export liberalisation are more politically achievable.^[45:1]

Country-specific negotiating assessment: **Indonesia** — the highest-value but most complex negotiation. The *hilirisasi* policy is a cross-administration consensus (maintained from Jokowi through Prabowo), meaning provisions that frame downstream processing as a shared objective are achievable while those seeking to discipline export restrictions are not. The IA-CEPA General Review provides the immediate institutional entry point; a standalone side agreement (following the US-Japan CMA model) may be more politically achievable than embedding provisions within the broader IA-CEPA text, given the sensitivity of minerals policy within the Indonesian political economy. **Philippines** — the most institutionally ready partner for deep integration, given TSM adoption, explicit industry welcome, and the Marcos administration's pro-mining reform trajectory. The barrier is institutional capacity rather than political will: SAFTA's narrow scope and limited institutional machinery mean that either AANZFTA or a standalone bilateral instrument (modelled on the Singapore-Australia GEA) would be the more effective vehicle. **Vietnam** — the Comprehensive Strategic Partnership provides strong political backing, and Vietnam has explicitly welcomed Australian investment in rare earth processing technology. However, state control of the mining sector and limited domestic regulatory frameworks for critical minerals create capacity constraints that suggest a phased approach: begin with a technology cooperation agreement under the existing CSP framework, building toward a more comprehensive critical minerals chapter as Vietnam's regulatory infrastructure develops. **Malaysia** — the Lynas experience demonstrates both the potential and the political sensitivity of Australian minerals investment. MAFTA's relatively narrow services coverage and the political contestation surrounding rare earth processing suggest that AANZFTA is the more feasible vehicle, with bilateral provisions focused on investment facilitation (transparent licensing timelines) rather than comprehensive liberalisation. **Thailand** — the weakest candidate for a near-term bilateral critical minerals chapter, given the absence of articulated Thai industry interest in Australian partnership and Thailand's orientation toward Japanese and Chinese supply chains. AANZFTA multilateral provisions and green rules of origin within TAFTA (where Thailand's role as an EV manufacturing hub creates concrete commercial interest in Australian mineral inputs) are more realistic starting points. The Technical Paper (Section 4.1) provides model treaty language with adaptation notes for each agreement context.

Key elements: Definitions of covered minerals (using an updatable annex, following the US-Japan model); commitments on export duty disciplines; transparency and notification obligations for regulatory changes affecting critical minerals; cooperation provisions on supply chain security, including early warning mechanisms for supply disruptions; ESG safeguards aligned with ILO and OECD standards. Export duty discipline is the most politically sensitive element, particularly with Indonesia, where the entire *hilirisasi* program depends on export restrictions as the mechanism for driving downstream investment. The recommended approach is therefore graduated and conditional: beginning with transparency obligations (advance notification of regulatory changes affecting export conditions), progressing to standstill commitments on new restrictions for minerals where joint processing capacity exists, and framing any further discipline as a trade-off against enhanced market access and investment facilitation — not as a demand to dismantle the policy instrument on which Indonesia's industrial strategy is built.

Institutional vehicle: IA-CEPA Joint Committee (for the Indonesia bilateral) and AANZFTA FTA Joint Committee (for the multilateral framework), with negotiating mandates from the Australian Minister for Trade. *Decision gate:* Scoping study for an IA-CEPA critical minerals side agreement (following the US-Japan CMA model) completed by Q2 2029; negotiating mandate sought from ministers by end-2029; AANZFTA critical minerals cooperation framework proposal tabled at Senior Economic Officials Meeting by 2030. *Success metric:* Critical minerals side agreement or chapter concluded with at least one partner (Indonesia or Philippines) by 2032; AANZFTA critical minerals cooperation framework adopted by 2031.

3.2 METS services commitments [priority: AANZFTA, IA-CEPA]

Services incidental to mining remain completely uncommitted under AANZFTA — a striking gap for a sector worth \$17 billion in exports where 62% of companies export to Southeast Asia.^[103] Indonesia's services restrictions are particularly severe, with equity caps and restrictive licensing for engineering, construction, and technical services. The US-Japan CMA and EU-Chile AFA both

embed services facilitation within their critical minerals frameworks, recognising that supply chain integration requires not just goods trade but the movement of technical expertise, professional services, and intellectual property.

The AANZFTA 2025 upgrade's transition to negative-list services scheduling provides the institutional mechanism for addressing this gap — parties would need to explicitly reserve METS sectors rather than leaving them unlisted. IA-CEPA's existing services provisions already offer a more liberal baseline, with the Katalis program providing a platform for METS-specific cooperation. Over 100 Australian METS companies are already active in the Indonesian market, demonstrating commercial demand that FTA provisions should formalise and protect.^[103:1] The Technical Paper (Section 4.2) provides model services schedule additions.

Specific actions: Prioritise METS services for new commitments in AANZFTA services schedule negotiations; seek IA-CEPA-equivalent services liberalisation in other bilateral agreements; negotiate professional mobility provisions for mining engineers, environmental consultants, and technical specialists; address intellectual property protection concerns identified by METS companies, particularly regarding technology transfer requirements and enforcement timelines.

Institutional vehicle: AANZFTA Services Sub-Committee (for negative-list scheduling) and IA-CEPA Joint Committee (for bilateral services expansion), with technical input from Austmine. *Decision gate:* AANZFTA negative-list services schedule proposal including METS sector tabled by mid-2029; IA-CEPA expanded METS services commitments proposed at the next General Review cycle. *Success metric:* METS services commitments secured under AANZFTA by 2031 (from the current zero committed subsectors); professional mobility provisions for mining engineers operational under at least two bilateral agreements by 2031; METS firms reporting reduced services trade barriers in annual utilisation surveys.

Country-specific barriers: Indonesia's services restrictions are the most severe — the OECD Services Trade Restrictiveness Index ranks Indonesia second most restrictive among 44 countries for construction services, with 55% maximum foreign ownership for joint ventures and complex KITAS work permit schemes.^[104] IA-CEPA has partially addressed this, guaranteeing 67% Australian ownership in contract mining and mine site preparation services, but over 100 Australian METS companies active in Indonesia still report that equity caps, licensing delays, and IP enforcement timelines (patent grants take four to five years) impede operations.^[105] The political reality must be acknowledged: foreign equity restrictions in Indonesia and the Philippines exist for domestic political reasons that FTA provisions are unlikely to override, and the realistic pathway for METS firms is not majority equity participation but a combination of partial equity stakes within existing caps, contractual service arrangements (management contracts, technology licensing, long-term service agreements) that deliver operational control without triggering ownership thresholds, and IA-CEPA-style sector-specific carve-outs negotiated on a services-schedule basis. Malaysia's legal services regime effectively excludes foreign firms — only one Malaysian law firm has employed a foreign lawyer since 2018.^[106] The Philippines and Vietnam present lower services barriers but lack METS-specific commitments in existing agreements. Thailand's Board of Investment incentives for EV manufacturing create a receptive environment for METS services, but the Alien Employment Act restricts foreign employment across sectors. The AANZFTA upgrade's transition to negative-list services scheduling provides the institutional mechanism: parties must explicitly reserve METS sectors rather than leaving them unlisted, shifting the default toward openness.

3.3 Green rules of origin [priority: AANZFTA, TAFTA]

Develop rules of origin that recognise and incentivise green production methods, creating market advantages for sustainably produced critical minerals. The central challenge is Chinese dominance of processing — China refines approximately 90% of rare earth elements, 60-70% of lithium and cobalt, and the IEA projects this dominance persisting through at least 2035.^[7:3] Conventional origin thresholds risk either excluding Southeast Asian processors (if set too high) or failing to incentivise diversification (if too low).

The EU-Chile AFA provides the most relevant precedent: its simplified, flexible rules of origin provide for full bilateral cumulation and recognise substantial transformation, allowing materials processed in either party to qualify for preferential treatment regardless of raw input origin.^[107]

AANZFTA's 2025 upgrade already operationalises full cumulation among participating parties — the first ASEAN FTA to do so — establishing the legal foundation for regional origin accumulation.^[96:1] The Technical Paper (Section 4.3) provides model treaty language including a "green bonus" provision that would reduce regional value content thresholds by 10 percentage points for ESG-certified producers. Any green bonus mechanism carries a gaming risk — producers could purchase renewable energy certificates or carbon offsets without achieving genuine emissions reductions at the facility level. The model provisions therefore condition the bonus on verified Scope 1 and Scope 2 emissions data from accredited third-party auditors, with the certification methodology aligned to EU Battery Regulation carbon footprint declaration requirements to prevent regulatory arbitrage.

Approach: Recognise refining and processing as origin-conferring transformations (so that Indonesian processing of imported ore confers Indonesian origin); establish full cumulation provisions enabling materials to accumulate origin across ASEAN countries (building on the AANZFTA 2025 precedent); set regional value content thresholds at achievable levels (40–50%) to ensure Southeast Asian processors can meet requirements while transitioning to more local supply; ^[108] develop carbon footprint weighting within ROO calculations as a pilot for broader green trade architecture.

Institutional vehicle: AANZFTA Rules of Origin Sub-Committee (for full cumulation and green ROO development) and TAFTA Joint Commission (for Thailand-specific EV component ROO). *Decision gate:* Green ROO feasibility study — assessing carbon footprint methodologies and regional value content thresholds — completed by Q4 2029; green ROO pilot proposal tabled at AANZFTA committees by mid-2030. *Success metric:* Green ROO framework with carbon footprint weighting adopted under AANZFTA by 2032; at least five cross-border mineral processing supply chains actively using full cumulation provisions by 2030; measurable increase in Australian mineral inputs qualifying for preferential treatment in Thai EV manufacturing.

Country-specific implications: Green ROO provisions are most immediately relevant to **Thailand** (where batteries and EV components manufactured using Australian minerals need preferential treatment under TAFTA and AANZFTA) and **Indonesia** (where the carbon intensity of coal-fired nickel processing — producing two to five times higher emissions than sulphide deposits — creates both the greatest challenge and the greatest incentive for a "green bonus" mechanism).^[109] For Indonesia, green ROO provide the market-based incentive to shift processing away from captive coal plants that currently render most Indonesian nickel ineligible for EU Battery Regulation carbon thresholds and US IRA tax credits due to Chinese ownership stakes exceeding 25%. The Philippines and Vietnam benefit from full cumulation provisions that allow partially processed materials to accumulate origin value across borders. Malaysia's Lynas facility already produces among the lowest-carbon rare earth products globally, positioning it to benefit immediately from carbon footprint weighting.

3.4 Enhanced investment facilitation [priority: IA-CEPA, MAFTA]

Move beyond investment protection (which existing agreements address) to investment facilitation — making it easier to invest through regulatory predictability, infrastructure coordination, and risk mitigation. Investment barriers are more consequential than tariff barriers: Indonesia's mandatory 51% divestment requirement by year ten of production, revocation of over 2,000 mining licences in August 2022, and termination of 60+ bilateral investment treaties since 2015 create systemic uncertainty.^[104:1] The Philippines imposes permitting processes of up to 10 years, while Malaysia's Lynas experience — where each licence renewal has remained contentious over a decade of operations — illustrates the administrative opacity affecting foreign investors in processing.^[110]

The EU-Chile AFA's investment facilitation provisions provide the most developed precedent, requiring transparent and non-discriminatory authorisation procedures within defined timeframes. Given Australia's policy against investor-state dispute settlement in new FTAs, the emphasis falls on facilitation mechanisms — transparent licensing registers, published processing timelines, and regulatory cooperation — rather than traditional investment protection. The Technical Paper (Section 4.5) provides model provisions.

Key provisions: Transparent licensing and permitting procedures for minerals processing investments administered within 90 days for initial determinations (following the EU-Chile model of "common rules for authorisations");^[107:1] prohibition of performance requirements such as forced technology transfer, while preserving legitimate local content incentives; commitment to contract stability for minerals investments; facilitated investment approval processes for projects meeting agreed ESG criteria; national security carve-outs preserved but narrowly scoped to prevent use as disguised investment restrictions.

Institutional vehicle: IA-CEPA Joint Committee (Indonesia, leveraging the existing Non-Tariff Measures chapter) and MAFTA Joint Commission (Malaysia, addressing Lynas-type licensing transparency). *Decision gate:* Investment facilitation provisions proposed for inclusion in the IA-CEPA General Review outcomes by end-2028; MAFTA investment facilitation transparency proposal tabled by 2029. *Success metric:* Published licensing registers for critical minerals investments operational in at least two partner countries by 2031; average initial determination processing time for qualifying investments reduced toward the 90-day benchmark; increase in Australian critical minerals investment in Southeast Asia from the current A\$26.8 billion base, tracked through ABS data.

Country-specific investment barriers and feasibility: The nature of investment barriers differs fundamentally across partners, requiring differentiated provisions. **Indonesia** presents the most severe regulatory risks — the mandatory 51% Indonesian ownership by year ten of production (Government Regulation No. 25 of 2024), revocation of over 2,000 mining licences in August 2022, and termination of 60+ bilateral investment treaties since 2015 create systemic uncertainty that is primarily a political will barrier rather than a capacity constraint.^[104:2] Investment facilitation provisions with Indonesia should focus on transparency mechanisms (published licensing registers, defined review timelines) rather than seeking to discipline the divestment requirement, which reflects entrenched political consensus. The IA-CEPA's existing Non-Tariff Measures chapter — the first for any Australian FTA — provides the institutional platform for addressing investment concerns without ISDS. **The Philippines** presents a different profile: foreign ownership is capped at 40% for most mining operations, but Financial and Technical Assistance Agreements (FTAAs) permit 100% foreign ownership for large-scale projects requiring minimum US\$50 million investment. The primary barrier is permitting speed — up to ten years for mining project approvals — which is an institutional capacity constraint amenable to technical assistance. The Marcos administration's fast-tracking of 785 mining permits in Q1 2024 demonstrates political will to reform. **Malaysia's** investment challenge is concentrated in rare earth processing, where the Lynas licence renewal experience illustrates administrative opacity that investment facilitation provisions (transparent licensing timelines, published decision criteria) could directly address. **Vietnam** and **Thailand** present lower barriers to investment entry but limited regulatory frameworks specific to critical minerals — investment facilitation here should focus on regulatory predictability and coordination with BOI (Thailand) and provincial investment authorities (Vietnam).

3.5 Mutual technology transfer and capacity building [*priority: IA-CEPA, AANZFTA*]

Frame technology transfer as mutual exchange of capabilities. Australia brings METS expertise, ESG practices, and processing technology; Southeast Asian partners bring manufacturing scale, processing innovation, and market knowledge. Technology transfer is the universal priority across all five partners — every country's industry explicitly seeks processing technology from Australian partners, while METS companies identify IP protection as essential for competitive advantage.^[111] Industry participants across Southeast Asian partner countries consistently identified processing technology transfer as their highest priority for bilateral engagement with Australia, framing this not as a market access question amenable to FTA text but as a concrete investment and capacity-building agenda requiring government-facilitated partnership and direct industrial cooperation. The US-Japan CMA's approach of embedding technology cooperation within supply chain security provisions, and the EU-Chile AFA's Article 8.13 on value-addition cooperation, both offer precedents that balance facilitation with IP protection. The "mutual" framing should be adopted honestly: Australia has significant advantages in mining technology, environmental management, and ESG certification, but lacks commercial-scale rare earth separation and advanced battery material processing capability. The ASPI report documents the technical difficulty involved: IGO wrote down the A\$605 million value of its 49% stake in the Kwinana lithium hydroxide refinery to zero during 2025 due to persistent technical issues, and Albemarle halted production at its Kemerton refinery in

February 2026.^[112] These gaps require engagement not only with Southeast Asian partners but also with Japan and South Korea — countries with complementary processing expertise. The Lynas-JOGMEC-Sojitz partnership — where Japanese public and private entities provided US\$250 million in financing and equity from 2011 to support development of the world's largest non-Chinese rare earth processing supply chain spanning Australia and Malaysia — demonstrates that trilateral technology cooperation anchored in trade and investment frameworks can deliver commercially viable processing diversification at scale.^[87:1] RCEP, which includes Japan, South Korea, and all ASEAN partners, provides the multilateral framework for such trilateral technology cooperation, while the Quad Critical Minerals Initiative offers a complementary diplomatic channel.

Existing institutional platforms enhance feasibility. IA-CEPA's human capital development provisions — including up to 200 Indonesian skills training visas annually — provide the most developed bilateral mechanism.^[75:2] TAFE partnerships in Malaysia and Indonesia demonstrate scalable vocational training models. The challenge is expanding these bilateral precedents into a coherent multilateral framework under AANZFTA while maintaining the depth of bilateral engagement. The Technical Paper (Section 4.6) provides model treaty language.

Specific mechanisms: Expand IA-CEPA's skills exchange model (200 visas annually) to other bilateral relationships; create joint research and development programs for processing technology, funded through FTA cooperation provisions; develop industry-to-industry technology partnership frameworks that protect IP while enabling knowledge sharing; establish joint training facilities for minerals processing and environmental management, building on TAFE partnerships already operating in Malaysia and Indonesia.

Institutional vehicle: IA-CEPA Joint Committee (for skills visa expansion), AANZFTA Economic Cooperation Committee (for multilateral framework), and RCEP Joint Committee (for trilateral cooperation with Japan and South Korea). *Decision gate:* Proposal to extend the IA-CEPA skills exchange model to the Philippines and Vietnam submitted to respective bilateral dialogue mechanisms by end-2028; joint R&D program concept paper developed with at least one partner by mid-2029. *Success metric:* Skills training visa allocations for critical minerals expanded to at least two additional bilateral relationships by 2030; at least one joint R&D program for minerals processing technology funded and operational by 2031; 500 additional mining and processing sector workers trained through bilateral programs by 2032.

Country-specific technology cooperation readiness: Existing bilateral skills mechanisms provide the foundation but vary significantly in depth. **Indonesia** has the most developed infrastructure: IA-CEPA provides up to 200 skills training visas annually, the Katalis program funds economic cooperation, and the Thiess apprenticeship program has trained over 1,600 students to Australian standards since 1992. The challenge is IP protection — Indonesia's patent grants take four to five years, creating genuine risk for METS companies sharing proprietary processing technology. **Malaysia** has functioning FMM-TAFE NSW collaboration that delivered training to 50 Malaysian supervisors in 2025, providing a scalable model. **The Philippines** benefits from the PAREEP scholarship program and shared TSM standards, but industry leaders acknowledge that "mastering the rare earth technology process from mining to extraction may require 10–15 years" — a realistic assessment of technology transfer timelines. **Vietnam's** VCCI-Australia logistics training provides a starting point, but rare earth processing technology transfer requires capabilities that Vietnam does not yet have domestic institutional capacity to absorb at scale. **Thailand's** technology cooperation is oriented toward Japanese and Chinese partners; Australian entry requires leveraging BOI incentives for EV manufacturing to create demand-pull for Australian METS expertise.

3.6 Indigenous participation and First Nations trade [priority: AANZFTA, IA-CEPA]

Indigenous land rights and consultation processes are a material factor in critical minerals project approvals — and therefore in the feasibility and timeline of supply chain integration. In Australia, major critical minerals deposits — including lithium in Western Australia, rare earths at Mount Weld, and various minerals in the Northern Territory — are on or adjacent to Indigenous lands, making Indigenous land use agreements a practical prerequisite for extraction. In the Philippines, IPRA provisions require Free, Prior and Informed Consent for mining on ancestral domains, directly affecting permitting timelines. FTA provisions that embed clear consultation and benefit-sharing

frameworks address this operational reality while protecting rights — aligning with the ESG standards increasingly required by institutional investors and end-market regulations such as the EU Battery Regulation's supply chain due diligence requirements.

Beyond their role in enabling project approvals, Indigenous participation provisions reflect the grant agreement's scope and the *Invested* strategy's broader vision for the Australia-Southeast Asia economic relationship. The strategy specifically recommends establishing "a targeted program to support Australian First Nations businesses to increase trade and investment with the region" and recognises that "economic links and cooperation have existed between Australian First Nations peoples and regional communities for centuries."^[1:1] AANZFTA's 2025 upgrade addresses inclusive trade for the first time in any ASEAN-centred FTA, establishing a precedent that critical minerals provisions can build upon. The Technical Paper (Section 4.7) provides model treaty language.

Approach: Include Indigenous consultation and benefit-sharing requirements in investment facilitation provisions, providing the regulatory certainty that investors need to commit capital to projects on Indigenous lands; recognise Traditional Knowledge and cultural heritage protections in environmental assessment frameworks; create pathways for Indigenous-owned enterprises to participate in critical minerals trade and services; build on the AANZFTA 2025 precedent of addressing inclusive trade.

Institutional vehicle: AANZFTA Inclusive Trade provisions (building on the 2025 upgrade precedent) and IA-CEPA Investment Chapter review, with input from the National Indigenous Australians Agency and the *Invested* strategy's First Nations trade program. *Decision gate:* Indigenous consultation and benefit-sharing provisions included in investment facilitation proposals for the IA-CEPA General Review by end-2028; AANZFTA inclusive trade workstream addressing First Nations enterprise participation proposed by mid-2029. *Success metric:* Indigenous consultation and benefit-sharing frameworks embedded in at least one FTA investment facilitation chapter by 2032; measurable increase in Indigenous-owned enterprise participation in critical minerals supply chain programs.

3.7 Gender-responsive FTA provisions for critical minerals [priority: AANZFTA, IA-CEPA]

As documented in Section 3.7, the mining sector's workforce gender gap — with female participation ranging from 8% in Indonesia to 18% in Australia — constrains the labour supply needed for the new processing and manufacturing capacity that supply chain integration requires. This recommendation translates those workforce findings into specific FTA provisions, consistent with the grant agreement's requirement to address "gender and inclusivity" and the *Invested* strategy's identification of gender and small business as objectives for Australia's trade architecture.^[70:1]

Targeted interventions demonstrably shift workforce composition: women in Australian full-time mining employment increased fivefold over two decades — from 8,700 in 2002 to 45,000 in 2022.^[67:1] The *Invested* strategy observes that "increasing the participation of women in the resources sector in both Australia and the region will be critical to improving productivity and economic growth," noting industry-led initiatives including BHP's gender balance target, which has lifted its global female workforce to 33%.^[67:2] Embedding similar commitments in FTA cooperation chapters ensures that gender-responsive workforce development accompanies supply chain investment rather than trailing behind it.

International FTA practice supports this approach. The AANZFTA 2025 upgrade's sustainable development and MSME chapters create the ASEAN FTA precedent; CPTPP addresses inclusive trade in its development chapter; and the EU's recent FTAs increasingly embed gender equality commitments within trade and sustainable development frameworks. The *Invested* strategy's Recommendation 21 — "facilitate young, female entrepreneur linkages with the region through a greater emphasis in visit and scholarship programs" — provides a specific programmatic hook.^[113]

Approach: Include gender-responsive commitments in critical minerals cooperation chapters — women's workforce participation targets in mining and processing, anti-harassment standards aligned with ILO conventions, gender-responsive procurement preferences within government-

funded supply chain programs, and SME access provisions designed to reduce the compliance burden that disproportionately excludes smaller METS firms from FTA utilisation. The AANZFTA MSME chapter and Implementation Support Program's MSME handbook provide the institutional platform; the Investing in Women program's demonstrated success with women-led SMEs in Indonesia, the Philippines, and Vietnam provides the operational model.^[71:1] The Technical Paper (Section 4.8) provides model treaty language.

Institutional vehicle: AANZFTA MSME Sub-Committee (for SME access provisions) and AANZFTA TSD Sub-Committee (for gender-responsive workforce commitments), coordinated with DFAT's Office of Women and Girls. *Decision gate:* Gender-responsive provisions included in critical minerals cooperation proposals submitted to AANZFTA and IA-CEPA committees by 2030. *Success metric:* Women's workforce participation in mining tracked as a KPI in bilateral cooperation programs from 2028; at least two FTA cooperation chapters include gender-responsive workforce development commitments by 2032; measurable progress toward Australia's 30% target for women in mining.

3.8 Just transition and workforce development [priority: IA-CEPA, AANZFTA]

Workforce availability is the operational bottleneck for critical minerals supply chain expansion in Southeast Asia, and the political sustainability of that expansion depends on how costs and benefits are distributed within mining communities. New nickel processing capacity in Indonesia, rare earth separation in Vietnam, and battery material manufacturing in Thailand all require skilled workers who do not yet exist in sufficient numbers. As documented in Section 3.7, Southeast Asia requires an additional 5.5 million trained workers in the renewables sector alone by 2050.^[73:1] FTA provisions on skills exchange and professional mobility are the most direct instrument for addressing this constraint, while community benefit-sharing frameworks ensure that the social licence for expanded mining and processing remains durable.

The IA-CEPA skills exchange model — including up to 200 Indonesian skills training visas annually, the \$40 million economic cooperation program (Katalis), and the Skills Development Exchange Pilot allowing 12-month workplace placements in mining, engineering, and green economy sectors — provides the most developed bilateral precedent for embedding workforce development within FTA architecture.^[75:3] Stakeholder evidence from all five partner countries confirms unanimous support for skills development components in trade agreements — functioning bilateral skills programs including FMM-TAFE NSW collaboration in Malaysia, the PAREEP scholarship program in the Philippines, and VCCI-Australia logistics training in Vietnam demonstrate that such mechanisms are practically achievable and industry-supported.^[114]

Approach: Embed workforce transition provisions within critical minerals cooperation chapters, covering: mutual recognition of mining and processing sector qualifications (building on IA-CEPA's vocational training provisions and the concept of a "regional skills passport" for the resources sector); joint skills development programs targeting the specific occupations — metallurgists, environmental assessors, plant engineers — that new processing capacity requires; community benefit-sharing frameworks ensuring that critical minerals development delivers local economic outcomes, drawing on Australia's Critical Minerals Strategy mandate for genuine community engagement;^[115] and social impact assessment requirements for major resource projects as part of the investment facilitation framework recommended in Recommendation 3.4. The Technical Paper (Section 4.9) provides model treaty language.

Institutional vehicle: IA-CEPA Joint Committee (for the skills exchange expansion), AANZFTA Economic Cooperation Committee (for the regional skills passport concept), and bilateral vocational training partnerships (TAFE, Thiess). *Decision gate:* Regional skills passport feasibility study commissioned by Q2 2029; workforce transition provisions included in critical minerals cooperation proposals by 2030. *Success metric:* Regional skills passport pilot operational for at least one mining occupation (e.g., environmental assessors) by 2032; community benefit-sharing framework adopted in at least one bilateral investment facilitation chapter by 2032; 1,000 additional workers in critical minerals processing trained through bilateral programs by 2035.

6. Addressing Grant Objectives and Outcomes

The analysis addresses the grant's three core objectives — demonstrating that critical minerals supply chain integration offers a broader model for Southeast Asian FTA modernisation.

Objective 1: Inform the Australian government's Southeast Asia trade and investment agenda to 2040

The implementation gap (Section 3.1) identifies activation of existing provisions as the highest-value near-term priority, while the three-tier framework (Section 5) provides a structured agenda extending to 2040. Country-specific partnership opportunities (Section 3.6) identify distinct complementarity with each Southeast Asian partner. The project's central finding — that inadequate utilisation of existing FTA architecture, not inadequate agreement text, is the primary barrier — directly informs the government's agenda by reorienting policy attention from renegotiation toward the activation, institutional support, and business engagement measures that would deliver returns from existing agreements. The Implementation Roadmap (Section 7) provides phased deliverables calibrated to external deadlines including the IA-CEPA General Review (March 2026), EU Battery Regulation enforcement (August 2027), and IRA critical minerals sourcing thresholds (2029).

Objective 2: Inform how the Australian government prioritises FTA modernisation and enhancement in Southeast Asia

AANZFTA and IA-CEPA emerge as priority vehicles: AANZFTA's 2025 upgrade provides immediate entry points through full cumulation and the TSD chapter,^[96:2] while IA-CEPA's General Review offers the deepest bilateral platform.^[116] Standards mutual recognition was identified as the highest-value opportunity, and the absence of a permanent business advisory mechanism as the most critical institutional gap.^[97:1] Solutions developed for critical minerals — particularly trade facilitation digitisation and standards harmonisation — extend to agriculture, green economy, and services sectors. The cross-sectoral transferability analysis (Section 3.8) demonstrates that the standards mutual recognition methodology developed for mining ESG certification applies directly to agricultural SPS measures and organic certification — confirming the pathfinder value of the critical minerals focus for broader FTA modernisation priorities.

Objective 3: Inform liberalisation and facilitation of trade and investment in Southeast Asia and closer economic integration

Behind-the-border barriers are more significant than tariffs, with almost two-thirds of Indonesia's tariff lines affected by non-tariff measures.^[104:3] Recommendations address this through digital trade facilitation, METS services liberalisation, investment facilitation, rules of origin reform, and circular economy integration (Tiers 2 and 3) — each grounded in international precedent. The analysis of METS services barriers (Section 3.5) identifies that Australia's A\$17 billion mining services export sector — with 62% of firms exporting to Southeast Asia — faces equity caps, restrictive licensing, and Mode 4 barriers that existing FTA services schedules do not address. The investment facilitation provisions (Section 5, Tier 3) respond directly to stakeholder evidence that regulatory unpredictability, rather than tariff levels, is the principal constraint on deploying allied capital into Southeast Asian critical minerals processing.

Outcome 1: Identify impediments, opportunities, and areas for further liberalisation under existing FTAs

The Evidence Review documents five categories of trade barriers across seven FTAs, identifying underutilisation as the primary impediment. Agreement-specific gaps include the absence of dedicated METS services coverage in AANZFTA schedules,^[103:2] RCEP's absence of a dedicated sustainability chapter or binding sustainability provisions,^[117] and IA-CEPA's lack of an environment chapter. Tier 1 recommendations provide specific activation actions for each agreement. The

project identifies that economic cooperation chapters in IA-CEPA (Chapter 15), RCEP (Chapter 15), and AANZFTA (Chapter 12) contain mandates broad enough to encompass critical minerals cooperation but have not been operationalised for this purpose – representing immediate, zero-cost entry points for activation through ministerial direction rather than renegotiation.

Outcome 2: Opportunities for inclusion/enhancement of new/emerging thematic areas

The project identifies eight thematic opportunities: **critical minerals** chapters (the most significant gap – no existing FTA contains dedicated provisions); **green economy** provisions including green rules of origin; **circular economy** frameworks for battery end-of-life management;^[55:1] **sustainability standards** integration through mutual recognition; **First Nations trade** provisions addressing the Indigenous land rights that are a material factor in critical minerals project approvals; **digital economy** provisions for trade facilitation;^[108:1] **gender and inclusivity** provisions addressing the mining workforce constraints that limit supply chain expansion capacity; and **just transition** provisions addressing the workforce development and community engagement that determine the political sustainability of supply chain integration in partner countries. The Technical Paper provides model treaty language for each. These eight thematic areas were identified through the convergence of evidence review, comparative FTA analysis, and stakeholder consultation – with green rules of origin and critical minerals chapters representing the most novel contributions, drawing on emerging precedents from the US-Japan Critical Minerals Agreement (2023) and EU-Chile Advanced Framework Agreement (2023).

Outcome 3: Stakeholder recommendations on prioritisation with consideration to 2040

Stakeholder consultations converged on the three-tier approach: activate before renegotiate, build institutions before negotiating chapters, and frame as partnership rather than liberalisation. Industry sources advocate a "dual strategy" – pursuing quick wins through implementation first while concurrently negotiating substantive upgrades.^[118] The Implementation Roadmap (Section 7) translates this into four phases with stakeholder-informed sequencing. The convergence across government, industry, academic, and civil society stakeholders on the implementation gap as the primary barrier – rather than agreement text deficiencies – was the project's most consequential finding, fundamentally reorienting the framework from a renegotiation-first to an activation-first approach.

7. Implementation Roadmap to 2040

The roadmap translates the three-tier framework into a phased implementation sequence calibrated to external deadlines – the IA-CEPA General Review (submissions due March 2026), EU Battery Regulation due diligence enforcement (August 2027), and IRA critical minerals sourcing thresholds reaching 100% (2029) – that define the window within which action must occur to capture commercial value for Australian and Southeast Asian partners.

Phase 1: Activation (2026–2027)

Deliverables:

- **D1.1:** Critical minerals awareness campaign launched by Q3 2026, targeting METS firms and mining companies, with a baseline FTA utilisation survey completed by Q3 2026. As documented in Section 3.1, the utilisation gap makes awareness-building a necessary precursor to more sophisticated advisory mechanisms.
- **D1.2:** Critical minerals agenda items formally proposed at all relevant joint committee and economic cooperation committee meetings by end-2026 – IA-CEPA Joint Committee, AANZFTA Economic Cooperation Committee, RCEP Joint Committee

- **D1.3:** Digital Certificate of Origin pilot for critical minerals shipments operational under AANZFTA by Q4 2027
- **D1.4:** Interim business advisory consultations convened (using existing bilateral business council infrastructure) at least twice per year from H2 2026, pending formal mechanism establishment
- **D1.5:** Critical minerals cooperation workstream proposed under the AANZFTA 2025 TSD chapter^[119] – by mid-2027

Agreement priorities:

- **AANZFTA:** Activate TSD chapter provisions; propose critical minerals cooperation pilot; pursue services schedule review for METS coverage. AANZFTA is prioritised because its 2025 upgrade – including full cumulation, simplified rules of origin, and the new TSD chapter – creates immediate entry points requiring no further negotiation.^[96:3]
- **IA-CEPA:** Expand Joint Committee agenda to include critical minerals; increase Katalis program focus on METS sector cooperation. IA-CEPA's existing economic cooperation program (\$40 million over five years) provides the deepest bilateral platform.^[93:2]
- **RCEP:** Propose economic and technical cooperation activities focused on critical minerals trade facilitation. RCEP's value lies in its inclusion of Japan and South Korea alongside ASEAN partners – enabling trilateral technology cooperation that bilateral FTAs cannot achieve
- **Bilateral:** Vietnam should be the immediate focus for bilateral activation outside the FTA framework, leveraging the March 2024 Comprehensive Strategic Partnership and its dedicated critical minerals dialogue. Thailand and Malaysia should be engaged primarily through AANZFTA multilateral mechanisms in Phase 1, with bilateral deepening deferred to Phase 2 as institutional readiness develops

The Trade 2040 Taskforce is the coordinating mechanism for all Phase 1 actions, providing government-mandated annual review of Southeast Asian economic engagement.^[120] The *Investea* strategy's Business Champions model – with over \$1 billion in commercial outcomes since March 2024^[121] – demonstrates that structured, senior-level relationship infrastructure delivers commercial results at speed. Extending this model to critical minerals is a Phase 1 priority, with at least one critical minerals Business Champion appointed by Q4 2026.

Indicative Phase 1 cost: Phase 1 actions primarily activate existing institutional mechanisms rather than create new programs, making them relatively low-cost. Principal resource requirements: dedicated coordination personnel in DFAT and Austrade (two to three FTE, approximately A\$500,000-750,000 per annum); business awareness campaign development and delivery (approximately A\$1-2 million, benchmarked against existing Austrade sector campaigns); digital Certificate of Origin pilot (approximately A\$2-3 million, drawing on AANZFTA Implementation Support Program funding). Total indicative cost is A\$4-6 million per annum – a fraction of the A\$25 million already allocated for IPEF technical assistance and the A\$40 million IA-CEPA Katalis program, both of which could be partially redirected to support Phase 1 actions.

Phase 1 → Phase 2 Decision Gate (Q4 2027): The Trade 2040 Taskforce conducts a formal progress review against Phase 1 deliverables before committing resources to Phase 2. Progression criteria: (a) critical minerals is a standing agenda item at the IA-CEPA Joint Committee and at least two other FTA mechanisms; (b) the baseline FTA utilisation survey is complete, providing the benchmark against which Phase 2 interventions will be measured; (c) the digital COO pilot is operational or on track for Q4 2027 launch; (d) at least two interim business advisory consultations have been convened. If criteria are substantially met, Phase 2 institutional investment proceeds. If not, the Taskforce identifies specific blockers and extends Phase 1 actions with targeted remediation before committing Phase 2 resources.

Phase 2: Institutional Reform (2027–2030)

Deliverables:

- **D2.1:** Standing Critical Minerals Business Advisory Council for Australia-Indonesia established and operational by mid-2028, with terms of reference agreed, secretariat funded, and first meeting convened. Australia-Philippines council established by end-2028. The sequencing reflects the depth of existing bilateral institutional frameworks: IA-CEPA's Joint Committee and Katalis program provide ready-made hosting platforms for the Indonesia-Australia iteration.^[97:2]
- **D2.2:** First bilateral standards MRA signed – targeting Australia-Philippines EIA or TSM/ESG certification equivalence – by end-2030. Joint technical scoping studies completed by Q4 2027 for both Philippines and Indonesia tracks. Standards alignment was identified across all consultations as the highest-value opportunity – though realistic implementation timelines of three to five years per bilateral arrangement require early commencement to deliver results within this phase.^[52:3]
- **D2.3:** CPTPP-style self-certification of origin operational for critical minerals across all Australia-Southeast Asia FTAs by end-2029
- **D2.4:** Cross-departmental critical minerals trade strategy group convened by Q2 2027, meeting quarterly, with a unified Australian position paper on critical minerals trade and investment published by Q4 2027. *Note:* This deliverable is initiated during Phase 1 to ensure coordination infrastructure is in place before Phase 2 institutional reforms commence.
- **D2.5:** At least one bilateral Basel Convention understanding on battery materials classification signed by end-2029

Agreement priorities:

- *AANZFTA:* Negotiate negative-list services schedules including METS sector commitments (proposal tabled by mid-2029); develop circular economy cooperation framework
- *IA-CEPA:* Negotiate expanded services commitments for METS; strengthen technology cooperation and skills exchange programs. The IA-CEPA General Review (submissions due March 2026) provides the institutional entry point for these negotiations.^[116:1]
- *Bilateral:* Conclude at least one Singapore GEA-style green economy agreement – with Indonesia or Vietnam – by end-2030. The Singapore-Australia GEA (2022) demonstrates that standalone green economy agreements can be legally anchored to existing FTAs without requiring full renegotiation – providing a replicable model.^[31:1]

Phase 2 → Phase 3 Decision Gate (Q4 2030): The Trade 2040 Taskforce, informed by the first annual reports from the business advisory councils, assesses Phase 2 outcomes before committing negotiating resources to Phase 3. Progression criteria: (a) at least two business advisory councils are operational and have published annual reports; (b) at least one bilateral MRA is signed or in advanced negotiation; (c) self-certification of origin is operational across a majority of Australia-Southeast Asia FTAs; (d) FTA utilisation rate for critical minerals firms has demonstrably increased from the baseline survey. Phase 3 negotiating mandates proceed only where Phase 2 institutional foundations are sufficiently mature to support new provisions – preventing the “dormant provisions” problem the framework is designed to solve.

Phase 3: Targeted Enhancement (2031–2035)

Deliverables:

- **D3.1:** Critical minerals side agreement or chapter concluded with at least one partner (Indonesia or Philippines) by 2032; AANZFTA critical minerals cooperation framework adopted by 2031
- **D3.2:** Green rules of origin framework with carbon footprint weighting adopted under AANZFTA by 2032, with the “green bonus” mechanism operational for ESG-certified producers
- **D3.3:** Investment facilitation provisions with transparent licensing procedures (including the 90-day initial determination benchmark) incorporated in at least one bilateral FTA by 2033
- **D3.4:** Regional battery passport interoperability pilot operational with at least three ASEAN partners by 2032, aligned with EU Battery Regulation requirements

- **D3.5:** Mutual technology transfer agreement concluded with at least one partner by 2031, including IP protection safeguards and joint R&D program with dedicated funding

Deepening integration:

- **D3.6:** Business advisory mechanisms scaled to cover all five partner relationships by 2035
- **D3.7:** Standards MRAs expanded to cover battery-grade materials, recycled content certification, and professional qualifications for mining engineers and environmental assessors – with at least four bilateral MRAs operational by 2035
- **D3.8:** At least one joint R&D program for minerals processing technology funded and operational by 2031, with results shared through the business advisory mechanism

Phase 3 → Phase 4 Decision Gate (Q4 2035): Comprehensive review of the three-tier framework's outcomes against the success metrics established at each phase. The review assesses: (a) whether FTA utilisation for critical minerals has reached the 40% target; (b) the number and effectiveness of operational MRAs and cooperation frameworks; (c) measurable changes in bilateral critical minerals trade and investment flows; (d) whether new provisions are being actively utilised or risk dormancy. This review determines the scope and ambition of Phase 4 regional leadership objectives.

Phase 4: Regional Leadership (2036–2040)

Deliverables:

- **D4.1:** Comprehensive review of all critical minerals FTA provisions, with amendments negotiated where implementation experience identifies gaps or inefficiencies
- **D4.2:** Fully operational circular economy trade framework for batteries, solar panels, and critical minerals recycling across AANZFTA, with harmonised waste classification and cross-border recycling protocols in force
- **D4.3:** Integrated regional supply chain monitoring and early warning system – building on the IPEF Supply Chain Early Warning System – operational across all five partner countries
- **D4.4:** Measurable trade and investment outcomes: Australian critical minerals investment in Southeast Asia at least doubled from the 2026 baseline; FTA utilisation rate for critical minerals firms at 40% or above; bilateral critical minerals trade volumes tracked and published annually
- **D4.5:** Formal assessment of extending the critical minerals pathfinder model to agriculture, green manufacturing, and digital economy – with at least one additional sector adopting the three-tier framework by 2040

Risk Factors and Mitigation

Geopolitical risks: Escalating US-China competition could pressure ASEAN partners to choose sides. Mitigate by framing Australia-ASEAN cooperation as complementary to, not competitive with, relationships with major powers. The Quad Critical Minerals Initiative^[30:1] and Pax Silica Declaration (2025)^[122] provide multilateral frameworks supporting bilateral action without requiring ASEAN members to take adversarial positions toward China.

Resource nationalism: Further export restrictions or processing mandates could disrupt integration plans. Indonesia's nickel export ban and expanding *hilirisasi* policy demonstrate that resource nationalism is a permanent feature of the policy landscape, maintained across successive administrations – a political will barrier, not a capacity constraint, that cannot be resolved through technical assistance alone.^[125] The Philippines' more incentive-based approach (under PNIA advocacy against proposed export bans) and Malaysia's 2024 raw rare earth export moratorium represent different expressions of the same underlying dynamic. Mitigate through joint value chain framing that works with, not against, sovereign development ambitions – the EU-Chile AFA's allowance for domestic price mechanisms (rather than absolute export bans) offers a negotiable model. Differentiate strategy by partner: with Indonesia, frame provisions around joint processing

that serves *hilirisasi* objectives; with the Philippines, support incentive-based alternatives to export bans; with Malaysia, address licensing transparency rather than challenging value-capture policies.

Technology disruption: Changes in battery chemistry or processing technology could shift mineral demand patterns. Mitigate through updatable mineral lists (US-Japan model) and flexible agreement architecture. IEA projections of critical minerals demand nearly doubling by 2030 suggest structural demand growth even with technology shifts.^[7:4]

IRA regulatory uncertainty: The US Inflation Reduction Act's critical minerals sourcing provisions — which create commercial incentives for FTA-partner supply chains — face material political risk. The FTA-partner eligibility criterion could be revised or narrowed under future administrations, and the broader IRA framework has faced sustained political opposition. If the FTA-partner eligibility criterion is revised, the commercial rationale for several Tier 3 provisions — particularly the green rules of origin with IRA compliance framing (Recommendation 3.3) and the joint supply chain certification mechanisms designed to establish IRA-compliant sourcing pathways — weakens. The framework's fundamental value does not depend on IRA permanence: supply chain diversification, standards alignment, and institutional cooperation serve Australian and ASEAN interests regardless of US regulatory settings. However, the urgency calculus changes: with IRA incentives in place, the commercial case for rapid action is stronger; without them, the timeline for certain provisions can be extended without significant commercial cost. Mitigate by ensuring that provisions designed for IRA compliance also serve standalone commercial and regulatory purposes — green ROO should reduce costs and improve market access independently of US tax credit eligibility.

Implementation fatigue: Past experience demonstrates this is the most significant risk — the implementation challenges documented by ASPI apply across Australia's existing critical minerals agreements. IA-CEPA's tariff rate quotas remain "not fully implemented" five years after entry into force;^[38:21] Thailand's dairy commitments under TAFTA remained in non-compliance two decades after entry into force.^[57:1] These failures reflect different dynamics: IA-CEPA's implementation gaps appear primarily to be capacity constraints (administrative processes, coordination failures) amenable to institutional investment, while Thailand's non-compliance involved a political will barrier where domestic industry protection was prioritised over treaty obligations. The distinction matters for mitigation strategy. Capacity constraints respond to the institutional mechanisms this report recommends — business advisory councils, funded secretariats, whole-of-government coordination. Political will barriers require the partnership framing of Section 4, where mutual benefit creates incentives for compliance that enforcement mechanisms alone cannot. Mitigate through the business advisory mechanism (Recommendation 2.1) creating institutional accountability for delivery, through the monitoring and review provisions recommended in the Technical Paper (Section 5.4), and through the annual progress review built into the Trade 2040 Taskforce.

Domestic political cycles: Changes of government in Australia or partner countries could shift priorities. Mitigate through bipartisan framing grounded in both economic and security rationales, and through institutional mechanisms that outlast individual administrations.

8. Conclusion

The convergence of geopolitical disruption, energy transition demands, and growing recognition of supply chain vulnerabilities creates both the imperative and the institutional conditions for deeper Australia-Southeast Asia integration in critical minerals — a sector that will underpin the green economy for decades to come.

This report documents a clear finding: the primary barrier is not inadequate FTA text but inadequate activation of the substantial architecture that already exists. Seven overlapping trade agreements provide broad geographic coverage and a range of cooperation mechanisms. What is missing is the institutional support, business engagement, standards alignment, and practical implementation that would make these agreements deliver on their potential. This conclusion may appear to underpromise relative to the project's original brief to propose FTA modernisation text —

and it would be a legitimate critique if the finding were an assumption rather than a result. It is, however, the honest product of the evidence review, stakeholder consultation, and comparative analysis: proposing new provisions when existing ones remain dormant would compound the problem rather than address it. The Tier 3 recommendations do identify genuine gaps where new text is needed, but grounding the framework in activation first reflects what the research found rather than what the project expected to find.

The three-tier "activation and targeted modernisation" framework provides a structured path from where we are to where we need to be. Tier 1 actions can commence immediately, requiring no renegotiation — only political will and institutional focus. Tier 2 reforms build the ecosystem of institutions, standards, and administrative processes that makes trade agreements work in practice. Tier 3 provisions address genuine gaps where existing agreements do not cover critical minerals adequately — informed by international precedents from the US-Japan, EU-Chile, and CPTPP models.

Throughout, the approach embodies a partnership ethic. Australia's strengths in extraction, technology, standards, and financing complement Southeast Asia's strengths in resources, processing ambitions, manufacturing scale, and market positioning. Joint value chain development — not competitive extraction — defines this relationship. The Kyoto-to-Paris shift in trade architecture means retaining core liberalisation commitments while adding the flexibility, institutional mechanisms, and stakeholder engagement that make agreements effective.

The *Invested* strategy set the direction. The AANZFTA 2025 upgrade created new entry points. Stakeholder consultations confirmed both the diagnosis and the approach. The IA-CEPA General Review, with submissions due March 2026, provides the immediate institutional vehicle. External regulatory deadlines — EU Battery Regulation due diligence enforcement from August 2027,^[50:1] IRA critical minerals sourcing thresholds reaching 80% from 2027 and battery component requirements reaching 100% by 2029^[124] — create commercial incentives for timely action, though the framework's value extends beyond any single regulatory timeline. The three-tier framework provides the operational specificity to translate strategic ambition into commercial outcomes — starting with the activation of provisions already in force, extending to institutional reforms that make future negotiations effective, and building toward targeted new provisions that complete the architecture for resilient, sustainable, and mutually beneficial critical minerals supply chain integration between Australia and Southeast Asia.

The critical minerals pathfinder demonstrates that this framework is applicable beyond a single sector. The institutional mechanisms, standards mutual recognition processes, and modular provision architecture developed here are designed to generate transferable solutions — as Section 3.8 documents for agricultural standards, and as the pathfinder methodology's 60/25/15 resource allocation (critical minerals, agriculture, broader sectors) anticipates. Phase 4 deliverable D4.5 will formally assess the extension of this approach to agriculture, green manufacturing, and services, drawing on implementation experience from the critical minerals provisions to lower the institutional costs of cross-sectoral application.

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