

Response to Inquiry into factors shaping social licence and economic development outcomes in critical minerals projects across Australia

27 February 2026

Introduction

Across Monash University, science, engineering, humanities and social science researchers are investigating the opportunities and impacts associated with Australia's critical minerals industries and markets.

Key areas of expertise include:

- Resource discovery and exploration modelling
- Mineralogy, microbiology, microfluidics, and materials science for improved extraction
- Mineral economics, supply-chain modelling, and market forecasting
- Project finance, geopolitical and non-technical risk assessment, and optimal taxation analysis
- Chemical engineering and green separation technologies
- Environmental stewardship, soil remediation, and GIS analysis
- Social licence, communication, and responsible development frameworks.

This integrated capability supports evidence-based decision-making and responsible development outcomes to support Australia's national priorities for sovereign resilience, sustainability and security.

The streams most relevant to this inquiry are:

- Community engagement and communication: Building social licence by engaging communities and industries in decision making for sustainable economic, social and environmental futures
 - Professor Libby Lester, Director, Monash Climate Communication Hub
- Government and Industry: Research-informed modelling tools and evidence-based interventions for responsible and optimal investment in critical minerals projects and secure supply chains
 - Professor Russell Smyth, Monash Business School
 - Associate Professor Stuart Walsh, Monash Resources Engineering

We have responded in brief to relevant Terms of Reference and would be delighted to contribute to engage further with the Committee as they continue this inquiry and consider recommendations to support the sustainable development of Australia's critical minerals opportunities.

For further information
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Selected Terms of Reference

The effectiveness of engagement practices with local communities, Traditional Owners, and other stakeholders

Effective engagement with local communities and Traditional Owners is central to the social licence of Australia's critical minerals projects. Yet current practices are often procedural and exclude distributional and recognition justice. Consultation is commonly undertaken late in project lifecycles with the narrow aim of meeting regulatory compliance and limited interest in legacy issues, Indigenous governance, and long-term community outcomes. This has led to persistent mistrust and community resistance.

A prominent example is the Greenbushes Lithium Mine in Western Australia, where continuing local opposition has been linked to groundwater use, noise, dust, and inadequate early engagement. It has led the community and council to document and publicise their concerns. Similarly, resistance from farming communities to rare earth and mineral sands projects in Victoria is also attributed to insufficient consultation in early project phases.

In contrast, projects that sustain trust and operational legitimacy over time usually include recursive dialogues, benefit-sharing, and Indigenous governance.

- Effective engagement must be treated as an ongoing social negotiation and not a requirement for discrete approvals or one-time consultation.

How critical minerals projects contribute strategically to regional and national economic development

A stable supply of critical minerals based on sustainably developed projects supports the development and diffusion of clean technologies. Supply disruptions raise costs for renewables and electrification, and can widen inequality across resource-importing economies. The existence of resilient supply chains can facilitate inclusive growth as well as accelerating emissions reduction, supporting progress towards national economic and environmental goals.

The role of state, territory, and local governments in supporting socially and economically sustainable development

Government roles encompass provision of information tools, development guidelines, and standards for assessment and practice. We offer two streams based on Monash research expertise.

1. Associate Professor Stuart Walsh co-led research to develop the Geoscience Australia *Economic Fairways Mapper*, a Eureka prizewinning online platform that allows users to create accurate maps to inform decisions about the location of resources for development projects, based on strategic opportunity and Australia's natural advantages.
 - This work has been extended to include consideration of environmental and social factors affecting resource development. This Environmental and Social Fairways mapping provides early stage tools to evaluate the potential impacts of new mineral development, enabling mining companies, investors and policy makers to anticipate future ESG concerns. The work has introduced novel aggregation methods that can be used to identify high risk regions from disparate data sources, and demonstrated their application through case studies conducted for the Australian mining industry. The approach has been used to track historical trends over multiple decades and anticipate future impacts of mineral development for different commodities, enabling quantitative data-driven investigations into causes of delay and project risk. These findings shed light on how social and environmental considerations may evolve in response to changing mineral production within the context of the energy transition. Further development of these tools would strengthen assessments beyond economic opportunity to understand the full

impact and support development that is sustainable and responsible as well as economically beneficial.

2. Led by Professor Russell Smyth, researchers within the Monash Business School have considered the energy transition as a tax design challenge. Their research has demonstrated that reducing effective tax rates could encourage investment in the production of lithium and other critical minerals. This research resulted in the Decarbonisation Tax Discount mechanism, a target reduction tied to pre-defined production and decarbonisation targets, calibrated on investment requirements to meet Net Zero targets. Its core logic was incorporated into DISR's modelling of the Decarbonisation Corporate Bond proposal and embedded into the Critical Minerals Production Tax Incentive being developed for introduction in 2027, as part of *Future Made in Australia*.

Additional research into the impacts on critical mineral supply chains and roles for government have resulted in new recommendations for actions that governments can take to reduce risk and increase resilience:

- A recent study into the impact of geopolitics on the price of six critical minerals found that price shocks due to threats were generally bigger and quicker shocks due to acts, (Saadaoui, Smyth, Vespignani, 2025). This effect on prices can be mitigated by reducing the non-technical risk i.e. policy perception, rather than seeking best practice. For governments, this might include promoting openness, transparency and consistency in policy making, with evidence-based decision making and greater use of stakeholder engagement.
(<https://www.sciencedirect.com/science/article/pii/S0140988325000180?via%3Dihub#s0060>)
- We know that there is a significant time lag between first investment in critical minerals exploration and production. AI can also reduce geopolitical and market risk to the supply of critical minerals, by improving the accuracy and timeliness of forecasts that underpin procurement and investment decisions (Smyth and Vespignani, 2024). Indicators derived from integrating AI with macro-energy and price-risk modelling can detect risk build-ups earlier and quantify their likely impact on prices and availability. The approach links high-frequency news and geopolitical indicators to mineral price movements and inventory needs, allowing decision-makers to stress-test policy options (e.g., strategic reserves, diversified sourcing, and transparent contracting). This AI-enabled evidence base improves the accuracy and timeliness of forecasts that underpin procurement and investment decisions, including targeted stockpiling, rigorous assessment of geopolitical risk, to improve early warning monitoring.
(<https://www.nature.com/articles/s41467-024-51661-7>)

Options for improved coordination between jurisdictions and the Commonwealth

Australia's federal structure has significant interjurisdictional variation in how social licence is operationalised. This is caused by inconsistency in engagement standards, overlapping approvals, and misalignment between national critical minerals strategies and state-level governance.

While the Commonwealth's Critical Minerals Strategy 2023–2030 emphasises Indigenous engagement and benefit-sharing, there are no enforceable social standards.

Project implementation occurs at state-level, but there is no consistent approach to community engagement practices. For example, Western Australia and Queensland have strong extractive agendas that coexist with heightened community scrutiny (Burton et al., 2024; Vivoda et al., 2019; Curran, 2017), whereas South Australia has more participatory and coordinated governance approaches (Wright & Bice, 2017).

Further, ambiguity in definition and enforcement of social licence creates barriers to the setting of regulatory boundaries.

- Opportunities exist for vertical coordination through:
 - federal guidance on expectations for minimum social performance
 - integrated approvals pathways
 - intergovernmental mechanisms (similar to a climate federalism model) that align federal objectives with local social and economic development needs.