

New Zealand's Minerals Moment: Strategy, Scarcity, and the Capability Gap

Keynote Speaker: JR Rowland, University of Auckland

Abstract

New Zealand has declared its intent: to double mineral exports to \$3 billion by 2035, contribute to resilient global supply chains, and position the sector as a driver of regional prosperity. In parallel, the science, innovation and technology system is being reshaped around mission-led priorities, national impact, and closer alignment with industry outcomes.

At a strategic level, this alignment is increasingly coherent.

But there is a growing tension beneath it.

Recent reforms are not expanding the overall investment envelope—they are redistributing it. Funding is shifting toward advanced technologies, alongside an implicit assumption that established sectors can increasingly co-invest in their own research and innovation. For minerals, this assumption is only partially true. While parts of the sector are commercially strong, the upstream discovery pipeline, environmental science base, and critical enabling capabilities remain deeply reliant on public investment and long-term capability development.

This creates a widening capability gap between ambition and investment model.

At the same time, the distinction often drawn between “advanced technologies” and “resource sectors” is becoming increasingly misleading. In practice, the minerals sector is one of the most immediate and scalable platforms for advanced capability—where AI-enabled exploration, digital modelling, low-impact processing, and environmental technologies are developed and tested under real-world conditions. The question is not whether minerals compete with advanced technology for investment, but whether we are fully leveraging the sector as a vehicle for deploying it at scale.

The sector is therefore being asked to do more than grow—it is being asked to operate across an expanded value chain, from exploration and resource definition through to processing, environmental performance, and social licence. Yet the underpinning R&I ecosystem remains uneven. Capability pipelines in geoscience, mining engineering, and metallurgy are under sustained pressure. Institutional roles are evolving, with universities, emerging Public Research Organisations, Māori enterprise, and industry aligning more closely—but not yet with the depth, continuity, or resourcing required to operate as an integrated system.

At the same time, promising signals are emerging. New generation programmes are demonstrating the potential of end-to-end, technology-enabled approaches, linking mineral systems science with processing innovation, environmental stewardship, and

socio-economic outcomes. These approaches point toward a more coherent future—but currently sit as pockets of excellence within a fragmented landscape.

Against this backdrop, three priorities become critical. First, rebuilding the capability pipeline—from undergraduate pathways through to advanced, multidisciplinary research aligned to sector needs. Second, deepening partnership models that are realistic about where industry can co-invest, and where sustained public investment remains essential. Third, matching mission-led alignment with mission-capable resourcing, ensuring that ambition is supported by a system able to deliver over the long-time horizons inherent to minerals development.

New Zealand’s minerals opportunity is not simply about resource potential. It is about whether we can build a globally distinctive, technology-enabled and responsible minerals system—one that integrates economic value, environmental stewardship, and societal expectations while contributing to regional prosperity and national resilience.

The strategy is clear. The opportunity is real. The question is whether we are prepared to invest—in capability, coordination, and technology deployment—at the level required to realise it.