



MINERALS COUNCIL OF AUSTRALIA

Submission to the Joint Select Committee on Artificial Intelligence

SEPTEMBER 2026

TABLE OF CONTENTS

Overview	3
Supplying the resources needed for the AI economy	4
Mining is at the forefront of AI deployment	5
A technology-neutral regulatory environment	6
Adopting AI in the workplace.....	8
Skills, workforce and labour market impacts.....	10
Appendix – Applications of AI in mining	11

Overview

The Minerals Council of Australia (MCA) appreciates the opportunity to provide comments to this inquiry as the leading advocate for Australia's minerals exploration, mining and processing industry.

Australian mining is playing a central role in the AI economy, both as a supplier of the minerals needed to build AI-related infrastructure and as a leading adopter of AI technologies. Expanding data centres, electricity networks and digital infrastructure will increase demand for Australian-produced iron ore, aluminium, copper, lithium and other critical minerals, driving economic opportunities across regional Australia.

Australian mining companies are using AI to improve productivity, safety and operational performance through applications such as predictive maintenance, autonomous systems, mineral exploration and real-time operational monitoring. The industry's experience deploying these technologies, combined with its strong safety focus and extensive datasets, places it in a strong position to continue leading AI adoption.

The potential benefits of efficient AI adoption in Australia are large. MCA estimates that AI's impact on total factor productivity could increase Australia's GDP by at least \$45 billion by 2030. This is consistent with the more conservative scenarios modelled by Microsoft and the Tech Council of Australia.¹ Given the uncertainty around the pace and breadth of AI adoption, there is a reasonable possibility that the actual economic impact will be substantially higher.

The MCA supports a technology-neutral and evidence-based approach to AI regulation. Existing regulatory frameworks are designed to be flexible and capable of managing technological change. Any additional regulation should be targeted at new identifiable harms while avoiding unnecessary barriers to innovation, investment and productivity growth.

The Australian Government should also accelerate opportunities to use AI to improve regulatory performance. AI-enabled approvals systems have the potential to improve the timeliness and quality of regulatory decision-making while maintaining appropriate human oversight and accountability.

Finally, Australia will need a larger pool of technical and trade skills to support the continued development and adoption of AI across the economy. Expanding domestic capability and maintaining access to skilled migration will be critical to ensuring Australia captures the economic benefits of the AI transition.

¹ Microsoft and Tech Council of Australia, *Australia's Generative AI Opportunity*, July 2023: <https://techcouncil.com.au/newsroom/generative-ai-could-contribute-115-billion-annually-to-australias-economy-by-2030/>.

Supplying the resources needed for the AI economy

Australian mining will be central to delivering the digital infrastructure that underpins AI and the energy systems needed to power it. Australia has the resource base, mining expertise and established trading relationships to be a major supplier of mineral and energy commodities to support the global expansion of AI. Supplying these commodities represents a significant opportunity for Australia to capture the economic benefits of global AI growth. As mining activity is concentrated in regional Australia, increased demand for minerals will translate into economic benefits for regional communities.²

AI systems depend on data centres, advanced electronics, communications networks, electricity generation and transmission infrastructure. Expanding this infrastructure will drive significant additional demand for iron ore, aluminium, copper and lithium, and a range of critical minerals of which Australia is already a reliable producer:

- Iron ore and metallurgical coal for steel-intensive construction and energy infrastructure
- Bauxite, alumina and aluminium for structural, electrical and thermal-management applications
- Copper for data centres, grids, generation, storage and communications networks
- Lithium and other battery materials for backup power and electricity storage
- Rare earths and strategic minor minerals used in motors, cooling systems, semiconductors and advanced electronics
- Uranium as a potential input to the reliable electricity systems supporting AI-related loads.

The opportunity is substantial. The International Energy Agency projects that data centre electricity consumption will more than double from 2024 to about 945 terawatt-hours by 2030, exceeding Japan's total electricity consumption.³ Australia's major miners and smaller producers are well placed to benefit. Rio Tinto, for example, estimates that it produces up to 70 per cent of the raw materials required for each gigawatt of data centre capacity.⁴

Australia's policy settings should support timely investment in new mines, processing capacity, energy and enabling infrastructure to ensure Australia can convert its natural resource advantages into enduring competitive advantages. Australia's minerals industry can play an important role in capturing significant upstream value in the AI supply chain. To give Australia the best chance of realising the economic opportunities created by AI, regulatory systems must be internationally competitive in delivering timely approvals and enabling access to capital, technology and skilled workers.

² Lawrence Consulting, *Australian Resource Sector Economic Contribution Study 2023-24*, July 2025; Minerals Council of Australia, *Australian Mining: Mapped*, 2025, <https://minerals.org.au/resources/launch-of-australian-mining-mapped-highlights-the-industrys-national-contribution/>.

³ International Energy Agency, *Energy and AI* (2025), Executive Summary, p. 17: <https://www.iea.org/reports/energy-and-ai>.

⁴ Rio Tinto, *Supplying a new era of growth*, 7 September 2026 (accessed 21 September 2026): <https://www.riotinto.com/en/news/stories/supplying-new-era-of-growth>.

Mining is at the forefront of AI deployment

The Australian mining industry is one of the nation's most advanced adopters of artificial intelligence. AI systems are already deployed at scale across the mining value chain, from mineral exploration and environmental management through to processing, logistics and operations. Unlike many emerging AI applications, these technologies are being used in complex, safety-critical environments where reliability, accountability and performance are essential. Mining companies have developed substantial expertise in deploying AI responsibly to support operational decision-making, improve worker safety, optimise equipment performance and enhance environmental outcomes.

Mining companies are deploying advanced AI models for a range of productivity-enhancing and safety applications, including predictive maintenance, autonomous vehicles and fleet management, mineral exploration and real-time operational monitoring and automated alerts. AI-enabled systems can identify emerging equipment failures before they occur, optimise production processes, analyse large and complex geological datasets, and support faster, more informed decision-making. These technologies improve productivity while reducing worker exposure to hazardous environments and strengthening the identification and management of operational and safety risks.

Australian mining companies are already demonstrating the practical benefits of AI deployment. Examples include:

- Geospatial AI systems that combine satellite imagery and machine learning to identify prospective mineral deposits while reducing unnecessary exploration activity
- Predictive maintenance systems that reduce equipment failures and downtime through real-time monitoring and analytics
- AI-enabled inspection technologies that improve safety and operational reliability across rail and transport networks.

These applications are delivering measurable improvements in productivity, safety and environmental performance.

The adoption of AI has the potential to strengthen the competitiveness of Australian mining while generating benefits beyond the sector. Technologies developed and refined in mining have found broader application in areas such as agriculture, environmental management and natural resource monitoring. For example, machine learning and pattern recognition techniques used to analyse geological and operational data have also been applied to crop monitoring, land management, deforestation tracking and disaster response.⁵

Mining's experience demonstrates how AI can be deployed responsibly in highly regulated and operationally complex environments. To ensure these productivity gains continue, mining companies must be able to safely test, adopt and deploy AI and related technologies. The industry's strong safety culture, extensive operational, geological and environmental datasets and practical experience implementing AI at scale position it as both a leading user of AI and a valuable source of expertise to support broader adoption across the Australian economy.

⁵ Nous Group, *Use of AI to deliver accurate, timely and consistent EPBC approvals*, report prepared for the Minerals Council of Australia, February 2026, p. 14.

A technology-neutral regulatory environment

Australia should continue to adopt a technology-neutral approach to regulation. Australia's existing regulatory frameworks in areas such as work health and safety, workplace relations, privacy, discrimination, and consumer protections are generally designed to manage risks and harms regardless of the technology that gives rise to them. This approach allows regulatory settings to remain flexible as technologies evolve, while providing business with the certainty required to invest, innovate and adopt new technologies.

A key strength of this approach is that it reduces the need for technology-specific regulation every time a new innovation emerges. Where genuine regulatory gaps emerge, regulation may need to be updated in response to unforeseen risks that are not addressed effectively through existing laws. Such risks should be identified and rapidly addressed using Australia's existing institutions, including the recently established AI Safety Institute. Any regulatory intervention should, however, be driven by evidence of identified harms rather than regulating technologies in anticipation of theoretical risks. Care should be taken to guard against the accumulation of requirements that collectively delay investment, increase costs and discourage businesses from adopting productive technology.

International competition to attract investment, talent and advanced industries is intensifying. Jurisdictions that provide clear, proportionate and technology-neutral regulatory settings will be better positioned to capture the economic opportunities associated with AI. Australia's policy framework must support innovation while avoiding duplication of existing obligations and unnecessary constraints on investment and productivity growth.

Ensuring regulators keep pace

Regulatory efficiency has been identified as a key investment deterrent.⁶ Advanced AI systems can be used to improve the efficiency of regulatory and approvals systems. Over time, competitor economies that successfully apply such technologies will improve their international competitiveness. For this reason, Australia should remain at the forefront of using AI to improve project approval timeframes and enhance its regulatory performance.

Box 1: AI pilot program to improve project approvals

Average approval times under the federal *Environment Protection and Biodiversity Conservation Act 1999* have increased from 2.3 years in 2019 to 3.8 years in 2025, contributing to higher costs, increased uncertainty and reduced international competitiveness.⁷

AI has the potential to improve the timeliness, consistency and quality of regulatory decision-making through better document review, application quality assurance, access to environmental and geospatial information, regulatory tracking and comparisons with previous assessments.

The MCA proposed a three-year pilot to embed AI tools within environmental assessment and approvals processes under the EPBC Act.⁸ The proposal includes an interactive submissions coach, pre-submission quality checks, geospatial data integration and tracking, and risk comparison capability. The proposed tools would support, rather than replace, human decision-making.

The 2026-27 Federal Budget provided significant support for the use of AI to improve environmental approvals, committing \$105.9 million for faster approvals under the EPBC Act using AI.⁹ These tools should be developed swiftly and effectively in collaboration with key industries whose expertise can support their design and piloting.

⁶ Fraser Institute, *Annual survey of mining companies 2025*, February 2026: <https://www.fraserinstitute.org/studies/annual-survey-mining-companies-2025>.

⁷ MCA analysis of Department of Climate Change, Energy, the Environment and Water EPBC Act Portal data.

⁸ Minerals Council of Australia, *Minerals Week 2026: using AI to cut delays for mining, housing and energy approvals*, media release, 23 March 2026, <https://minerals.org.au/resources/using-ai-to-cut-delays-for-mining-housing-and-energy-approvals/>

⁹ Minerals Council of Australia, *Budget backs mining for national resilience*, media release, 12 May 2026, <https://minerals.org.au/resources/budget-backs-mining-for-national-resilience/>.

Recommendation 1: Maintain a technology-neutral and evidence-based approach to AI regulation, with any additional regulation limited to addressing identified harms that cannot be effectively managed through existing regulatory frameworks.

Recommendation 2: Accelerate the development of AI-enabled tools within Commonwealth regulatory and approvals processes, in collaboration with industry, to improve the timeliness, consistency and quality of decision-making.

Adopting AI in the workplace

Artificial intelligence is the latest of many technologies that have transformed and modernised Australian workplaces. While AI is changing how some work is performed, it does not follow that Australia needs to amend the current workplace relations settings that regulate the introduction of workplace change.

Fair Work laws currently require employers to consult affected employees where a *'definite decision'* has been made to introduce a *'major workplace change'* that is likely to have a *'significant effect'* on employees.¹⁰ These settings have been in place since 1984 and have seen Australia through major technological changes including personal computers and networks, digitisation, the internet, social media, automation and robotics. In mining, technological change has improved productivity and delivered significant safety benefits, including by physically removing employees from dangerous settings.

Proposals have been made in recent years to expand consultation obligations by requiring consultation to occur *before* any definite decision is made or by imposing effective veto rights over the introduction of technology. This includes ACTU proposals for *'enforceable AI implementation agreements'*, an *'introduction of change'* regime, and veto rights for the adoption of AI where a union or employee deems it is not in the 'public interest'.¹¹ More concerningly, ACTU policy does not propose such veto powers simply for AI – they would apply to the introduction of any new technology in the workplace.

These proposals should not be supported. They are modern versions of proposals previously rejected by Australian industrial commissions, most notably in the landmark decision of the former Conciliation and Arbitration Commission known as the 'Termination, Change and Redundancy Case' of 1984 (the 'TCR case').¹² In the TCR case the former Commission rejected the ACTU's proposal to require consultation where an employer *'proposes to make changes in production, programme, organisation, structure or technology...'*¹³ The Commission made clear it was *'particularly concerned about the possible ramifications'* of the proposal, and found consultation procedures *'are not matters which lend themselves to effective legislation or award prescription'*.¹⁴

In 2008, as part of the award modernisation process, the Australian Industrial Relations Commission retained the consultation provision derived from the 1984 TCR case, observing that *'no issue of substance has been raised concerning its operation during that period'*.¹⁵

There is no reason why the existing settings should be changed simply because of AI technology. The concerns about the ACTU proposals raised through the TCR case are just as valid today as they were in 1984. Prescriptive pre-decision consultation obligations would interfere with employers' responsibility to make business decisions, undermine the ability of businesses to attract finance, delay modernisation, and create opportunities to frustrate technological change – including changes that could substantially improve safety.

The MCA notes the National AI Plan that states *'deploying these technologies should involve meaningful consultation with workers, including into the design of AI systems'*.¹⁶ Meaningful consultation should continue to be supported provided this does not involve an expansion of the current legal framework. While encouraging productive dialogue between employers and employees is important and necessary, this is not the same as imposing prescriptive legal requirements that apply to any technology under consideration.

¹⁰ *Fair Work Act 2009* (Cth) ss 145A, 205; *Fair Work (Model Terms) Determination 2025* (Cth) sch 2.

¹¹ Australian Council of Trade Unions, media release, [Unions seek enforceable agreements on the use of AI](#), 29 July 2025; ACTU, 2024 Congress, [Artificial Intelligence](#), para. 52.

¹² Australian Conciliation and Arbitration Commission, [Termination, Change and Redundancy Case](#), [1984] 8 IR 34.

¹³ *Ibid*, p. 77.

¹⁴ *Ibid*, p. 21.

¹⁵ *Award Modernisation Decision* [2008] AIRCFB 1000, Full Bench of the Australian Industrial Relations Commission, 19 December 2008, [48].

¹⁶ Australian Government, Department of Industry, Science and Resources, *National AI Plan*, 2 December 2025, 'Action 5: Support and train Australians', <https://www.industry.gov.au/publications/national-ai-plan/spread-benefits>.

The MCA is also encouraged by the Minister for Employment and Workplace Relations' statement that *'tripartism does not, and should not, involve a right of veto'*.¹⁷ Employees and unions should not have the power to prevent the adoption of technologies that are already subject to a range of existing regulatory safeguards.

Recommendation 3: Maintain the existing consultation settings under the Fair Work laws that require employers to consult affected employees after a 'definite decision' has been made to introduce a 'major workplace change' that is likely to have a 'significant effect' on employees.

¹⁷ The Hon Amanda Rishworth MP, Minister for Employment and Workplace Relations, *AFR Workforce Summit, Sydney*, speech, 28 April 2026, <https://ministers.dewr.gov.au/rishworth/afr-workforce-summit-sydney>.

Skills, workforce and labour market impacts

Skills and workforce capability

AI development and adoption will increase demand for engineers, electricians, data specialists, automation professionals, cybersecurity specialists and other technical workers. Many of these skills are already in high demand across mining, infrastructure, energy and advanced manufacturing.

The expansion of Australia's AI sector will intensify competition for skills and increase input costs for other productive industries. Australia's workforce policy must therefore expand the overall supply of technical capability. This will create many positive opportunities for business and workers.

In relation to skills and training, the government should work with industry, universities and vocational education providers to develop flexible, industry-relevant pathways into technical occupations. The MCA supports cross-sector research placements, industry-linked skills pathways and qualifications that support the diffusion of AI capability across mining and other industries.

Skilled migration must also remain responsive to areas of genuine shortage. Australian businesses need continued access to international talent and expertise while the domestic skills pipeline is expanded.

Labour market data shows there is no evidence of widespread job displacement

The MCA supports the government's focus on ongoing monitoring of labour market indicators to identify occupations exposed to AI disruption. Research by Jobs and Skills Australia suggests that generative artificial intelligence is likely to augment jobs rather than replace them through automation.¹⁸

Similarly, the Department of Employment and Workplace Relations report *AI and employment in Australia* found no evidence to date of broad AI-driven labour market disruption in Australia, though there was a modest softening concentrated in some AI-exposed occupations.¹⁹ The report's key findings are that:

- There is no evidence to date of broad labour market upheaval driven by AI in Australia.
- Occupations more exposed to potential automation by generative AI have grown more slowly than other occupations.
- There is a 'small negative relationship between AI exposure and employment growth'.
- The evidence is 'an early indication of some modest slowing in employment growth in some highly exposed occupations, not proof of large AI-driven job losses'.

The report concludes that:

*AI could reshape the labour market, but its effect on employment is highly uncertain. AI can perform tasks previously done by workers. But it can also raise productivity, create new tasks, and increase demand for labour in other parts of the economy. The net effect on jobs cannot be settled by theory or prediction. It needs to be monitored with data.*²⁰

The MCA supports the government's current evidence-based approach. In relation to labour market impacts, the DEWR report demonstrates that calls for significant new regulation of AI to 'protect' jobs have no basis in the current evidence. The MCA endorses the approach outlined by Minister Rishworth that labour market impacts should continue to be monitored using reliable data.

Recommendation 4: Continue monitoring the labour market impacts of AI using objective data and evidence.

¹⁸ Jobs and Skills Australia, *Our Gen AI Transition: Implications for Work and Skills*, 14 August 2025: www.jobsandskills.gov.au/publications/generative-ai-capacity-study-report.

¹⁹ Department of Employment and Workplace Relations, *AI and employment in Australia: Monitoring framework and evidence to date*, July 2026, <https://www.dewr.gov.au/workplace-relations/resources/ai-and-employment-australia>.

²⁰ Ibid, p. 5.

Appendix – Applications of AI in mining

Box 1: Predictive maintenance at Olympic Dam – BHP, South Australia

BHP's Olympic Dam operation uses AI and machine learning models to monitor the condition of haul trucks, crushers, pumps and other critical plant equipment. Sensors collect real-time data on vibration, temperature, and operational parameters, which AI algorithms analyse to predict potential equipment failures before they happen.

AI technologies applied

- Internet of Things (IoT) sensors capturing real-time operational data
- Machine learning models trained on historical failure data
- Cloud-based analytics platform for continuous monitoring
- Automated alerts to maintenance teams for early intervention

Outcomes

- Reduced unplanned downtime by up to 30 per cent
- Extended equipment lifespan through timely maintenance
- Lowered maintenance costs and improved safety by preventing catastrophic failures
- Increased overall operational efficiency and productivity

BHP's success with predictive maintenance has set a benchmark in mining and influenced other sectors such as manufacturing, energy, and transport to adopt similar AI-based maintenance strategies.

Box 2: TrackDefectX AI-powered rail infrastructure inspection – Hancock Prospecting and Atlas Iron – Western Australia

Hancock Prospecting and Atlas Iron developed TrackDefectX, an AI-driven computer vision system designed to detect defects in rail infrastructure used for transporting iron ore. Mounted cameras capture high-resolution images of tracks during operations, and AI models analyse these images in real time to identify cracks, loose fastenings, and other anomalies.

AI technologies applied

- High-resolution cameras mounted on locomotives
- Machine learning algorithms for defect detection
- Real-time data processing and alert systems
- Integration with maintenance scheduling systems

Outcomes

- Improved safety by early detection of rail faults
- Reduced manual inspection time and associated risks
- Enhanced maintenance planning and reduced downtime
- Increased operational efficiency and reliability

TrackDefectX's success in mining rail inspection is influencing rail and transport sectors, as well as utilities and infrastructure maintenance, by demonstrating the value of AI-powered asset monitoring.

Box 3: Geospatial AI for mineral exploration, CSIRO and Rio Tinto – Western Australia

CSIRO, in partnership with Rio Tinto, developed advanced geospatial AI techniques to analyse satellite imagery and geological datasets to identify promising mineral deposits across Western Australia. By integrating AI with remote sensing data, the project has enhanced the accuracy and speed of orebody mapping, reducing exploration costs and environmental impacts.

AI Technologies Applied

- Satellite and airborne remote sensing data
- Machine learning algorithms for pattern recognition and anomaly detection
- Integration of geological and geochemical datasets
- Cloud-based data processing and visualisation platforms

Outcomes

- Accelerated identification of potential mineral-rich zones
- Improved targeting precision, reducing unnecessary drilling
- Lower exploration costs and environmental disturbance
- Enhanced decision-making with comprehensive spatial insights

This geospatial AI innovation is now being adopted in agriculture for soil and crop health monitoring, environmental management for deforestation tracking, urban planning and disaster response mapping in Australia and globally.

Box 4: Operations and equipment: Autonomous vehicles – Rio Tinto, Pilbara region

Rio Tinto has deployed the world's largest fleet of autonomous haul trucks at its iron ore operations in the Pilbara. These trucks are part of the company's broader 'Mine of the Future' initiative and operate without drivers, controlled remotely from an operations centre in Perth over 1,000 km away.

AI technologies applied

- AI-driven vehicle navigation and obstacle detection
- GPS and LiDAR for real-time positioning
- Centralised fleet control software
- Machine learning for route optimisation and maintenance scheduling

Outcomes

- 15 per cent improvement in productivity over driver-operated trucks
- Reduced fuel use and emissions due to more consistent driving
- 24/7 operation with fewer delays and interruptions
- Improved safety by removing drivers from hazardous environments

The success of Rio Tinto's AHS program has led to global interest in autonomous heavy vehicles. The same core technologies are now being adopted in agriculture (autonomous tractors and harvesters), construction (automated robotic earthmoving equipment and grading), logistics (self-driving vehicles in warehouses and shipping yards) and defence (uncrewed logistics and patrol vehicles).