Environment Institute of Australia and New Zealand Inc.

Response to the Joint Select Committee on Artificial Intelligence

14th September 2026

1.1 About EIANZ

The Environment Institute of Australia and New Zealand (EIANZ) is the leading not-for-profit, multidisciplinary association of environmental practitioners across Australia and New Zealand. Our members include scientists, ecologists, planners, engineers, lawyers, economists, and policy specialists. Our profession has expertise and direct experience in the use and oversight of data, digital technologies, and emerging artificial intelligence applications across environmental practice.

This submission reflects practitioner experience and draws on consultation across EIANZ specialist groups, including climate change, biodiversity offsets, heritage, ecology and impact assessment.

This submission has been prepared by the EIANZ's Artificial Intelligence Community of Practice Steering Committee, overseen by EIANZ's Policy Standards Committee and endorsed by the EIANZ Board.

1.2 Executive Summary

In this response, EIANZ is responding to several of the Terms of Reference for the Joint Select Committee on Artificial Intelligence, namely 1a, 1c, 1d, 1f, 1g, 1h, 1m and 1n. The remainder of the Terms of Reference we make no submission upon.

We note that Artificial Intelligence (AI) has been used in the preparation of our response, mainly to provide a synthesis of multiple points of view that has then been reviewed by our authors through a manual process. AI was not used to create the content in this submission.

1.3 Submission body

Response to 1(a): *the opportunities presented by artificial intelligence (AI) to lift Australia's resilience, productivity growth, economic competitiveness, and living standards*

Artificial intelligence and AI-driven robotics offer significant opportunities to boost Australia's productivity and resilience across the environmental sector, though these capabilities must be paired with qualified human oversight.

Across environmental workflows, AI is already driving efficiencies, from automating image and acoustic processing for fauna monitoring, such as bird detection systems that trigger wind turbine curtailment to protect threatened species, to rapidly processing complex climate information for physical risk assessments and near-term adaptation planning. AI can also improve the speed and quality of climate-risk assessment, enabling governments, businesses and investors to identify and fund physical risk mitigation before losses occur.

This shifts expenditure from emergency response and recovery towards preventative investment that protects communities, infrastructure, ecosystems and long-term economic resilience.

Crucially, these technological speed and scale gains provide an opportunity to free up specialists for higher-level interpretation and judgment, rather than replace human expertise, particularly given that vast reserves of ecological data remain locked in physical reports or unrecorded lived experience that algorithms cannot access.

Response to 1(c): *the opportunities of AI and robotics to drive research and innovation, new industries and business, and export opportunities, including in sectors of Australian comparative advantage such as agriculture, resources, health and medical research, advanced manufacturing, financial services and defence industry*

Artificial intelligence is increasingly recognised as a strategic tool by the environment sector. It can enhance national competitive advantage and elevate standard practice across key sectors such as infrastructure, resources and agriculture, largely by transforming how environmental data is collected and analysed.

Through the integration of AI with modern survey technologies, including drones, remote sensing, and automated sensors, environmental professionals can conduct more rapid, frequent, and detailed surveys over vast spatial scales. Algorithms can provide productivity boosts in areas such as species detection, data classification, and pattern recognition within massive environmental datasets, substantially strengthening the evidence base for formal assessment and decision-making.

Nevertheless, while these automated applications streamline workflows and scale monitoring capacity, they are intended to augment practice rather than operate autonomously; expert human verification, critical interpretation, and professional oversight remain essential to ensure robust sustainability outcomes.

Response to 1(d): *the rate and extent of AI adoption across the Australian economy, and the barriers to adoption, faced by small and medium businesses and family businesses*

Rapidly evolving artificial intelligence tools offer significant efficiency gains across environmental assessment workflows, including reduced document drafting, faster remote sensing processing, and complex large-dataset integration, yet their operational adoption remains markedly uneven across practitioners and organisations.

While some professionals leverage heavy usage and advanced workflows, others remain at zero adoption or lack the familiarity and confidence required to implement AI effectively, threatening to widen the competitive divide between large, well-resourced entities and small-to-medium enterprises (SMEs) that lack in-house IT, data governance, and risk oversight capacity. These structural capability gaps create significant operational risks, including concerns about intellectual property, unverified public-domain data, citation accuracy, and the substantial senior-level effort required to validate AI outputs before publication.

They may also undermine long-term career pathways by displacing entry-level roles and weakening the professional talent pipeline. To mitigate these disparities and prevent benefit concentration, government support should leverage trusted peak bodies to deliver sector-specific training, model policies, and shared capability programmes, ensuring equitable, responsible, and standardised AI integration across all regions and industry tiers.

Response to 1(f): *the importance of data sovereignty, and the opportunities presented by narrow, domain-specific AI models trained on Australian data in areas of Australian sectoral expertise;*

Domain-specific artificial intelligence models trained on authoritative Australian environmental data, unique ecological contexts, social licence, species information, and local regulatory frameworks offer far greater reliability and relevance for specialised environmental applications than generic, foreign-trained models that risk introducing severe geographic and analytical bias.

Realising these benefits requires robust data governance and sovereignty safeguards. These safeguards should address the storage, retention, reuse, control and provenance of information processed by AI systems, particularly where that information is confidential, commercially sensitive, culturally sensitive or environmentally sensitive.

Consequently, ensuring data sovereignty and output integrity must be treated as fundamental environmental and professional priorities rather than purely technical IT concerns, demanding transparent model limitations, explicit data provenance, and rigorous oversight by appropriately certified local practitioners to ethically verify that AI outputs remain accurate and fit for use within the Australian environment

Response to 1(g): *the workforce and skills implications of AI, including the adequacy of Australia's education system, job creation and displacement, and the effects on the quality and security of jobs*

The integration of artificial intelligence into environmental practice operates across three distinct functional tiers: augmentation, supervised automation, and full substitution. Within these tiers, AI either enhances practitioner workflow, executes delegated tasks under strict review, or handles tasks with minimal oversight.

The first two models offer substantial efficiency gains for experienced specialists with the deep domain expertise required to critically evaluate, verify, and catch flawed outputs. AI may also present more opportunity for experienced specialists to spend less time on reporting and more time in the field, where human effort and experience is critical. However, the uncritical adoption of full substitution and routine task automation presents a severe workforce pipeline paradox: by automating the foundational research, data drafting, and technical analysis historically assigned to junior professionals, organisations risk eliminating early-career roles, widening the competence gap between graduates and senior staff, and eroding the talent pipeline needed to cultivate future experts capable of providing critical oversight.

Over the longer term, the convergence of AI with robotics, autonomous sensors, and agentic systems threatens genuine job displacement across both field and office roles. This risk underscores the urgent need for workforce and education policies that promote critical AI literacy and mandate structured entry-level training pathways. These policies should also reinforce the essential assurance, validation, and ethical accountability provided by Certified Environmental Practitioners.

Response to 1(h): *the adoption of AI by Commonwealth departments and agencies to improve services for Australians, and the transparency and accountability measures that apply to AI use*

To avoid systemic governance failures and automated misjudgements, Australia's regulatory frameworks should include appropriate safeguards around artificial intelligence. This would help ensure that AI tools function transparently as screening, triage and decision-support mechanisms, while reserving adverse decisions and formal enforcement for human authority.

This balance between automated capability and human accountability is particularly vital as Australia phases in mandatory climate-related financial disclosures under Chapter 2M of the *Corporations Act 2001* and AASB S2 *Climate-related Disclosures*. This is a complex regime scaling across reporting entities between 2025 and 2027 that risks straining professional assurance and regulatory oversight capacity. In this high-stakes context, AI can substantially enhance regulatory capacity by automated screening of complex sustainability reports for omissions, metric inconsistencies and non-compliance, thereby directing scarce expert resources towards high-risk disclosures.

However, to maintain market confidence and procedural integrity, EIANZ considers that final statutory rejections, regulatory assessments and assurance conclusions should remain subject to human judgement, appropriately qualified professional oversight and explicit statutory accountability.

Response to 1(m): ***the implications of emerging AI capability for Australia's national security and strategic resilience, including the ability of regulators, the Australian AI Safety Institute and the intelligence and security community to identify and respond to emerging risks***

Beyond immediate operational efficiencies, artificial intelligence represents a pivotal strategic capability for enhancing Australia's national resilience against compounding physical climate risks, severe natural-hazard events, disaster predication and security threats, provided its deployment adheres to strict ethical guardrails and responsible adoption principles.

AI tools can rapidly model climate scenarios, evaluate supply chain vulnerabilities, and identify targeted infrastructure resilience investments before physical impacts or uninsurable damages occur. Yet, even as advancing agentic systems make end-to-end automation technically feasible, full substitution remains ethically and professionally inappropriate for complex environmental assessments under uncertainty.

Removing qualified human oversight from consequential environmental and strategic planning creates severe vulnerabilities regarding validity, data protection, and accountability; therefore, AI should operate as a decision-support mechanism that informs early mitigation while leaving ultimate responsibility, judgment, and statutory decisions strictly bound to accountable practitioners.

Response to 1(n): ***any other related matters***

As Australia accelerates its energy transition, artificial intelligence and AI-driven robotics present critical capabilities to resolve major productivity bottlenecks, such as lowering supply chain costs for large-scale solar and wind farms, while providing the automated analytics necessary to operate increasingly complex high- and low-voltage

grids where variable renewables, proliferating batteries, and rapid electrification surpass human decision-making limits.

Furthermore, AI serves a vital dual function in maintaining grid stability at the lowest greenhouse gas emissions and defending power networks against sophisticated cyber threats as coal generation grows increasingly unreliable. However, the rapid expansion of physical infrastructure required (including the required land, energy and water inputs and community acceptance) to support these advanced systems, particularly the construction of AI data centres, introduces significant environmental costs and resource demands that must strictly comply with national environmental regulations (which suitably qualified environmental practitioners have the skills and experience to effectively plan, assess and implement).

Seizing this challenge offers Australia a distinct strategic opportunity to innovate and establish a showcase of green, sustainably regulated data centre infrastructure.

1.4 Contact Details

EIANZ would be pleased to discuss our submission further with the Committee.

For further information, please contact:

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