ESG Considerations for HE in an AI World

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Artificial intelligence is already reshaping Higher Education (HE). While tertiary providers scramble to establish rules, students are actively using AI to research, write, and solve problems. Simultaneously, academic and professional staff are embedding these tools into everyday workflows, fundamentally shifting how they evaluate information and make decisions.

Amid this digital transformation, the principles of Environmental, Social, and Governance (ESG) frameworks have assumed urgent importance. Global challenges – climate change, systemic social inequalities, and governance crises – demand that education not only transmits knowledge but also imparts sustainability literacy, ethical reasoning, and civic responsibility. Duffy (2026) notes that ESG provides a holistic approach, integrating environmental stewardship, social justice, and transparent, accountable governance as foundational elements for building resilient and equitable societies.

The critical issue is no longer whether students should use AI, but how universities prepare them to think, work, and lead in a world where AI is a permanent fixture of the workforce.

Like in many other industries, Higher Education Providers also aspire to contribute to a global community that is morally aligned. A deliberate environment, social and governance (ESG) strategy, accompanied by a coherent framework of actions and transparent communications about the impacts of these actions, can also go a long way in helping Australian HE institution attract and retain students, faculty and staff, as well as enhancing relationships with the wider community.

Most Australian universities now have established AI policies. These policies typically set out what staff and students can and cannot do with AI, and many were developed in response to academic integrity concerns and guidance from the Tertiary Education Quality and Standards Agency (TEQSA).

But over the past year, HE leaders have increasingly shifted their focus away from just protecting assessment methodologies against AI usage towards broader strategic and governance questions. While an ESG strategy requires support at the executive levels of the HE organization to signal commitment, it also needs to be embraced throughout the organization to consolidate, hold and deliver results. The whole educational enterprise needs to be knowledgeable of both the benefits and risks of the current rapidly evolving digital environment.

Professor Stephen Hawking once warned a virus created in a lab could be unleashed on humanity, killing us all - even perhaps accidentally. He also went on to predict that the world will face several other threats including nuclear war and global warming. As he told the Radio Times in 2014. "The development of full artificial intelligence could spell the end of the human race."

A popular concept amongst futurists is the idea of the 'technological singularity' - the point at which computers are so powerful, it is quicker for them to design their own upgrades, than rely on humans. "It would take off on its own, and re-design itself at an ever-increasing rate," said Prof Hawking. "Humans, who are limited by slow biological evolution, couldn't compete, and would be superseded."

Maybe Prof Hawking had it all wrong, but some of us may remember the global outbreak of Coronavirus in 2019…

History refers to every American president as the "leader of the free world" and as such we should be comforted in the fact that the current POTUS states that there is nothing to be concerned about and strongly dismisses concerns regarding the environmental, social, and governance (ESG) impacts of artificial intelligence. He discounts AI warnings from industry executives as "hoaxes" or "sick conspiracies designed to stifle development and government oversight threatens to bankrupt domestic technology companies."

So there's probably no need to read on, dearest gentle reader – nothing to see here. All is in good hands, as this sentiment is from the same president who states that all elements of ESG are grossly misrepresented.

President Trump's quotes on Environment (E)

- "The concept of global warming was created by and for the Chinese in order to make US manufacturing non-competitive."
- "They never talk about the environment anymore. You know why? It's one of the great scams of all time."
- "Today they use the word 'climate change,' because [...] they were getting themselves in a little trouble with the word 'global warming,' because not every place is warming."
- "This 'climate change,' it's the greatest con job ever perpetrated on the world, in my opinion," Trump said. "All of these predictions made by the United Nations and many others, often for bad reasons, were wrong. They were made by stupid people that have cost their countries fortunes and given those same countries no chance for success. If you don't get away from this green scam, your country is going to fail." (Walling & Borenstein 2026)

President Trump's quotes on Social (S)

- "The White House considers anyone that uses the term, 'Artificial Intelligence,' as opposed to the highly accepted new and more accurate term, 'Super Intelligence,' THE ENEMY!" Trump said on Truth Social.
- "It's almost like a constitution in a way, and the biggest people in the world signed that, and I signed it as president, and it really is a form of protection," Trump said of the voluntary, non-binding agreement on AI safety standards.

President Trump's quotes on Governance (G)

- "The only control or 'guardrails' that AI needs is a STRONG AND SMART (High IQ!) PRESIDENT, and the U.S.A. has that, in spades!" Trump wrote in September 2026, arguing against any sort of AI regulation.

This article does not intend to replicate the same Laissez-faire sentiment as the POTUS but will assess the impact of ~~Artificial~~ "Super Intelligence" on ESG Implementation.

AI has the potential to deliver extensive productivity gains across various industries. Beyond efficiency, AI also promises broader societal benefits, such as accelerated drug development and enhanced prediction and management of natural disasters.

Regardless of AI's positive potential, debate is ongoing as to whether AI represents the greatest promise or the gravest threat to humanity. Elon Musk has long warned that AI poses a danger if not judiciously managed. Zhang Ya-Qin, the former president of the Chinese tech giant Baidu, believes that AI may threaten humanity. (Oehmichen et al 2025)

It is now understood that AI engagement is not a simple, neutral issue but a complex construct within economic and societal systems. AI should not be considered as the magic cure to all our modern problems, nor should it be solely represented in a dystopian narrative of societal collapse. Instead, this article seeks to offer a perspective of both the potential benefits and the potential costs that AI can have for the ESG dimensions.

Environmental

The environmental dimension of ESG covers issues such as excessive resource consumption and antecedents of climate change (Pollman, 2022). The role of AI is inherently double-edged. On the one hand, AI can help drive innovation in crucial new technologies, thereby mitigating the potential threats of climate change. On the other hand, AI can also critically amplify threats of climate change due to its enormous energy and resource consumption.

In particular, the training and refining of AI models requires the running of high-performance computers and significant data storage in dedicated facilities. The Department of Industry, Science and Resources (DISR) noted that “the energy used by AI applications, particularly for generative AI, is clearly significantly greater relative to other technologies”. Estimates made in 2025 refer that a single ChatGPT query generating text could use between ten and 90 times as much energy to process as a simple Boolean text search. A query that then generates a graphic image being over 20 times more energy intensive. The energy of generating video was likely to be ‘orders of magnitude higher’ again.

Further consideration to the challenges that AI represents globally for energy consumption and future planning of energy systems, AI energy use derived from fossil fuel sources contributes to global greenhouse gas (GHG) emissions. This, in turn, increases the anthropogenic warming of the planet and accelerating climate change.

AI has other environmental impacts that include land usage and noise pollution. These two domains are interconnected when residentially zoned land is redesignated for data centre usage. The constant noise generated from data centres needs to be a consideration when locating these facilities. There is a fine balance between all of the environmental elements that must be considered.

AI technology requires substantial amounts of water used by high-performance computing facilities and data centres for cooling the energy-intensive graphics processing units (GPUs) that provide the massive computing power required by AI. In some cases, water might also be used in connection with on-site generation of the electricity needed to power the facilities.

During this evolving phase of hardware development for processors that are increasingly efficient, there is an environmental cost of the natural resources mined for the materials as well as the land-fill (or ideally recycling) implications of the outdated and discarded computer chips and circuit boards. There is an opportunity for HEPs to access this hardware and reuse it in research and development in areas outside of AI as the processors are still adequate for many other tertiary applications.

Noting the environmental impacts of the infrastructure that supports the development and deployment of AI, many researchers have written on the benefits of increasing the use of renewable energy, improving energy efficiency of AI systems, as well as improving the computational efficiency of the high-performance data facilities used to develop and deploy AI systems.

As stated, AI generates significant negative environmental impacts in terms of energy use; GHG emissions; and water, land and resource use. However, AI technologies can be applied to a wide variety of environmentally positive uses. At a broad level, the use of AI to achieve greater efficiencies in significant areas of the economy, such as manufacturing, agriculture and the transport sector, can result in more efficient use of natural resources and reduced environmental impact.

Social

The social dimension of ESG captures a broad array of societal concerns related to how organizations interact with their staff, students, communities, and broader social systems. Unlike for the environmental dimension, it is difficult to provide a comprehensible definition of this dimension. Reynolds et al (2022) instead refers to Social as being community investments, internal societal policies and to archetypal social topics such as employee rights and diversity.

The social dimension of ESG in HE involves consideration of the impact of a tertiary institution's operations on society and the ways in which the tertiary provider promotes social responsibility. This can include issues such as diversity and inclusion, student and staff well-being, and community engagement. Meagher (2023) writes that by adopting socially conscious practices, HE providers can contribute to the overall health and welfare of society and promote a more inclusive and diverse environment.

There is also evidence to suggest that HEPs with strong ESG practices may be able to attract and retain top staff, recruit a higher calibre of domestic and international student as well as gain the support and loyalty of their existing academic community who are concerned about social issues (Tarlan, 2025).

A final concern of the social ESG issues associated with HE in the era of AI implementation is that as more learning materials are digitised and content is AI produced then the on-campus engagement of student will diminish. One of the key successes for universities over the past millennia is the networking and real-time personal interactions that occur in a face-to-face environment. The balance needs careful consideration.

Governance

The governance dimension of ESG highlights the challenges posed by AI are not purely technological but fundamentally human in nature. This perspective emphasizes that AI implementation is not only a hardware and software issue but is also a governance issue.

The 2024 submission of the Australian Research Council (ARC) commented on the need to review broadly the effectiveness of Australian law in regulating the environmental impacts of AI: "Governance refers to the rules and procedures that hold organizations accountable to their members and to their external stakeholders and broader society."

Traditionally, governance fulfills two core functions: advice and control.

> *There is…a need to review and update existing Australian laws and policies to ensure they are fit for the purpose of ensuring environmentally responsible and sustainable AI, as AI applications are taken up across the whole of the public and private sector. Different legal and policy frameworks will touch on AI's environmental impact across different parts of the whole AI lifecycle including: environmental planning laws and licensing regimes for the siting and running of facilities such as mines and processing facilities for critical minerals, and data centres and undersea cables for data storage and compute power; energy grids including the creation and use of renewable energy facilities; carbon reporting and ESG frameworks; policies to incentivise and obligate product stewardship and e-waste reduction and re-use.*

A recurring Governance Issue of AI in Higher Education is that students frequently use AI tools without fully understanding the methodological assumptions behind generated content or critically evaluating its credibility. This can result in superficial analysis, uncritical replication of information, and a decline in research literacy.

In the competitive higher education market, each university must keep costs down. Many are experimenting with high-tech ways of boosting student load, usually by deploying more online or pre-recorded material. The Age (Burrett, 2026) recently reported on undergraduates at the University of Melbourne watching clips recorded six years earlier, alongside in-person lectures. The transactional nature of corporate education facilitates this. The students are paying for a degree, not to learn. The pedagogical experience doesn't matter, so long as the qualifications being sold are eventually delivered – even, or perhaps especially, to students who barely know the language in which they're studying.

To keep the bottom-line positive and grow international and domestic student numbers, universities seem to be reducing expectations. Most on-campus lectures are now recorded,

so students no longer need attend. They can choose to watch (or not) on online learning management system platforms (Vukasović et al 2025). As a result, tertiary lecture theatres are often virtually empty.

Students are quite aware of the situation. *"I use Gemini and ChatGPT for all my assignments and projects,"* an international student stated in an interview with Thomas (2026) *"A third of my exams are online, and some units entirely, so AI is very convenient to use. […] Some units say, 'You cannot use AI or you will fail', but the risk is worth it because AI is so much smarter than us. So we pay for our own AI detection tools, to confuse the university's AI detection tools. We think it's weird no one ever gets punished, but we think we know why – the university just wants our money."*

Even before AI, a black market had been established around the paid provision of essays or other assignments. Claude, ChatGPT and similar GenAI platforms now provide a similar service, at almost no cost. Such practices risk undermining the development of essential academic competencies such as critical thinking, independent inquiry, and authentic engagement with learning tasks. As Wong (2016) states, "AI is devastating higher education, but the system was already broken."

Further obstructions to AI governance in the HE sector relates to staff member's digital competence, infrastructure limitations, and institutional policy misalignment (Yong et al, 2025). While some evidence suggests that AI can foster personalized, reflective and interdisciplinary ESG learning, its success is highly dependent on educator engagement and institutional support structures.

Environmental, Social, and Governance (ESG) content and Artificial Intelligence (AI) tools are integrated into Higher Education (HE) but there are still several systemic barriers to effective ESG and AI integration, including fragmented curricula, limited interdisciplinarity, lack of standardized competencies, and insufficient ethical frameworks for AI use. The initial round of Governance of AI in Australian HE has been completed and the next phase is currently underway. Environmental concerns seem to be understood by most members of the community but the political power of the multi-billion-dollar data centre businesses (eg AWS 'Amazon Web Services') and AI research and development companies (such as 'Anthropic') is undisputedly immense. Once a true balance of ESG concerns of AI can be actively implemented across both the HE and general Australian business landscape, the polarising apprehensions of the detriment versus the benefits of AI can begin to be resolved.

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