# The environmental and ethical challenges of generative AI



The use of Artificial Intelligence (AI) technologies, particularly generative AI, has come under scrutiny for its substantial environmental footprint and the ethical dilemmas posed by its development and deployment. A critical examination highlights that users may be overlooking these pressing issues while increasingly relying on AI for various applications, including job tasks and academic support.

As reported by nique.net, the pressing nature of generative AI's environmental consequences cannot be understated. The training, operation, and maintenance of AI models require vast amounts of energy and water, leading to significant carbon emissions. Industry estimates suggest that within the next two years, AI could account for up to 0.5% of global electricity consumption. This projection implies a consumption level comparable to that of Argentina, a nation with a population of over 45 million.

In addition to electricity usage, a study from Cornell University anticipates that the water needed to cool AI data centres may reach half of England’s annual water consumption. This figure exceeds four times the total water usage of Denmark, further spotlighting concerns about resource allocation amidst a global climate crisis. Such resource consumption raises alarms about sustainability, given the increasing demands for clean water worldwide.

The particulars regarding the environmental costs of individual AI models can be striking. For instance, the training of OpenAI’s GPT-3 reportedly produced approximately 500 tons of carbon dioxide, equivalent to the yearly electricity consumption of more than 127 American households. Furthermore, the model's training consumed over 180,000 gallons of water, sufficient for the daily drinking needs of around 218,000 individuals. With one in eleven people globally lacking access to clean drinking water, the implications of such consumption are particularly concerning.

On the ethical front, the methods used to train AI systems raise further questions. Data collection practices have drawn criticism, with reports indicating that major tech companies, such as Meta, have utilised extensive datasets that include stolen or pirated content. Experts warn that any content freely posted online could be used without consent to enhance AI models, leading to a myriad of copyright infringement cases—over 30 currently in the United States alone. This situation highlights a significant disconnect between creators and the corporations that leverage their works without authorisation.

Moreover, the reliability of information produced by generative AI technologies, particularly GPT-3, has come under fire. Research indicates that this AI may disseminate false information—disagreeing with accurate statements more than a quarter of the time and citing erroneous sources up to 60% of the time. Given that the energy required to process a single request with ChatGPT is tenfold that of a conventional Google search, users are encouraged to consider the practicality of relying on such technologies, especially when the potential for misinformation is substantial.

The nique.net report raises important considerations about the implications of supporting generative AI. As the technology evolves and integrates further into daily life, the wider impacts—both environmental and ethical—on society and individuals warrant thorough discussion. Users face a choice in how, or whether, they engage with these AI systems, reflecting the growing conversation around responsible technology use in an ever-evolving digital landscape.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://news.mit.edu/2025/explained-generative-ai-environmental-impact-0117> - This article from MIT News discusses the environmental implications of generative AI, including its demands for electricity and water, and the increased carbon emissions that result from training and deploying AI models. It highlights the need to consider the broader environmental impacts of AI development.
* <https://guides.lib.uci.edu/gen-ai/ethics> - This UCI guide explores the ethical challenges associated with generative AI, including data collection practices and the environmental impact due to energy consumption. It emphasizes the importance of sustainable practices in AI development and deployment.
* <https://impactclimate.mit.edu/2025/01/17/considering-generative-ais-environmental-impact/> - This piece from the MIT Climate Project emphasizes the extensive environmental impacts of generative AI, including high electricity and water usage. It underscores the necessity of climate-conscious AI development to mitigate these effects.
* <https://hbr.org/2024/07/the-uneven-distribution-of-ais-environmental-impacts> - Harvard Business Review examines the uneven distribution of AI's environmental impacts, highlighting the strain on resources such as water, which is used extensively for cooling data centers. This raises concerns about the sustainability of AI growth.
* <https://thesustainableagency.com/blog/environmental-impact-of-generative-ai/> - This article provides statistics on the environmental impact of generative AI, including the carbon footprint of training AI models like GPT-3 and the potential for e-waste generation. It calls for judicious use of AI and highlights efforts to reduce its environmental footprint.