# Gao report highlights environmental and societal risks of generative AI



The Government Accountability Office (GAO) has issued a detailed report highlighting a broad spectrum of risks associated with generative artificial intelligence (GenAI) that policymakers are urged to consider as this technology continues to evolve and integrate into various sectors. The report, published on April 23, emphasises the wide-ranging implications of GenAI technology, spanning from environmental concerns to cybersecurity and data privacy issues.

A prominent focus of the GAO’s assessment is the environmental impact of AI data centres, which play a crucial role in supporting GenAI functionality. These data centres demand substantial amounts of energy and water, primarily to maintain the cooling systems essential for their operation. According to the report, the energy consumption of data centres is comparable to powering between 80,000 and 800,000 households, with 40 to 50 per cent of that energy being used directly by IT infrastructure and an additional 40 per cent dedicated to cooling methods.

The report also touches on recent political developments regarding the expansion of AI infrastructure. It notes that President Donald Trump has pledged to utilise presidential authority to encourage the establishment of AI data centres. The Trump administration identified 16 sites on Department of Energy lands earmarked for this purpose, with coal designated as the preferred energy source to power these facilities. This choice has elicited debate within industry circles and among Democratic policymakers, who advocate for renewable energy alternatives.

GAO stresses that policymakers should examine the environmental consequences of AI infrastructure developments, especially concerning carbon emissions, energy consumption, and water usage. However, quantifying these impacts remains challenging due to limited data availability. The report offers an example illustrating the complexity of such assessments: “a particular server delivered to a data centre might have a particular emission cost associated with the mining of the raw materials it incorporates, and the energy used to assemble and transport the server to the site.”

Despite these uncertainties, the report recognises the potential for ongoing innovation to enhance AI efficiency and mitigate environmental harm. Breakthroughs in hardware design, the development of more efficient algorithms such as pruning and quantization, and advanced cooling technologies may contribute to more sustainable AI operations. The GAO highlights initiatives like liquid cooling and immersion cooling, where computing hardware is submerged in a fluid to eliminate the need for air cooling, as promising approaches to reduce energy use. It notes, “Since data centre cooling systems can account for up to 40 per cent of data centre energy usage, companies are exploring and applying new techniques to reduce operational costs.”

Beyond environmental concerns, the GAO identifies five key areas of risk posed to humans by GenAI systems: lack of accountability, unintentional bias, unsafe system behaviour, cybersecurity vulnerabilities, and data privacy issues. The report outlines the particular difficulties in assessing and managing the safety of generative AI, given that these systems often operate as ‘black boxes’—even their developers may not fully understand how outputs are generated. This opacity limits the ability to predict safety issues and may lead to challenges in mitigating harmful consequences as they arise.

Furthermore, the GAO points to a lack of transparency related to the provenance of data used in training GenAI models, which complicates efforts to evaluate model behaviour and inhibits independent research. The report notes, “Although many companies investigate and report on system behaviour, often documented in model or system cards, they often provide limited information on the training data… Without information on the data used to train these models, it is difficult to evaluate the training, which hinders independent research on model behaviour and limits transparency.”

In response to these findings, the GAO proposes several recommendations for policymakers. These include expanding efforts to improve data collection and reporting, promoting innovation aimed at reducing environmental impacts, supporting adherence to existing AI frameworks to guide GenAI adoption and software development, and enhancing collaboration to share best practices and establish industry standards. The report also acknowledges that policymakers could opt to maintain the current regulatory approach without additional interventions, potentially allowing technical advances to address challenges independently; however, the GAO cautions that ongoing efforts may not sufficiently address the unique challenges posed by GenAI.

The report provides a comprehensive overview of the complex landscape surrounding generative AI, encompassing technological potential alongside significant environmental and societal risks. As GenAI products and services continue to grow, the findings underscore the need for informed policy consideration to navigate the challenges and benefits inherent in this rapidly developing technology.

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

## References

* <https://www.benton.org/blog/gao-assesses-artificial-intelligence-and-finds-five-risks-and-challenges> - Corroborates GAO's identification of five risks in generative AI, including unsafe systems, data privacy issues, and cybersecurity concerns.
* <https://www.markey.senate.gov/news/press-releases/senator-markey-applauds-gaos-report-on-the-environmental-impacts-of-generative-artificial-intelligence> - Supports the GAO’s findings on generative AI’s energy and environmental impacts, including data gaps.
* <https://fedscoop.com/gao-suggests-policy-reform-to-mitigate-generative-ais-human-environmental-risks/> - Validates concerns about water consumption in AI data centers and cybersecurity risks, with specific examples of energy usage for cooling systems.
* <https://www.mitchellwilliamslaw.com/artificial-intelligence/generative-ais-environmental-and-human-effects-april-22nd-us-gao-report> - Confirms GAO’s focus on environmental effects (water/electricity consumption) and societal risks (deepfakes, workforce displacement).
* <https://www.justice.gov/archives/sco/file/1373816/dl?inline=> - While unrelated to environmental risks, this document provides context on federal investigations, though it does not directly support the AI claims.
* <https://news.google.com/rss/articles/CBMimAFBVV95cUxNakYwQkhKMUFsb010M21VM0VkTXNvcTdCYWJXTDgyN29nNjlLYTgzUTFfTGdBLUFOVzFGc1dMWHdGQlU4cmNaOWl3Zzk5Qm02eFJtUHN3Nm1wVHlJMFlYNDRJNS1hbkxWTWRmWmthX1BMR1JUUUJiNjZLREFRUS1ZbEMyVjJZa0NfcVdFMWpsT1dFbzhMY1RGRw?oc=5&hl=en-US&gl=US&ceid=US:en> - Please view link - unable to able to access data