

The AI revolution:

# Balancing innovation and sustainability

When thinking about artificial intelligence (AI), sustainability is usually not the first association that comes to mind. Since the release of OpenAI's ChatGPT to the public in November 2022, AI has taken the internet by storm and gone mainstream. This article examines the current and emerging ESG risks associated with the proliferation of AI technologies and provides insights into how the AI Act seeks to mitigate these challenges.

Google searches related to terms such as “Artificial Intelligence” or “Generative AI” have more than tripled since 2022 (see Figure 1). In the private sector, companies are actively exploring ways to integrate AI tools into their operations to stay ahead of the competition. In the public sector, particularly in the case of the EU, policymakers have reacted rapidly to the new presence of AI by establishing the Artificial Intelligence Act<sup>1</sup> in 2024—a regulatory and legal framework for the use of AI. This framework is important to ensure sustainable, long-term development of AI use, as well as managing some of the risks arising from the use of generative AI applications.

## AI from an environmental viewpoint

From an environmental perspective, AI technologies contribute to sustainability challenges, notably through their impact on energy consumption and greenhouse gas emissions. The datacentre industry, which underpins AI operations, is currently responsible for 2-3% of global greenhouse gas emissions. As the volume of data worldwide is projected to double every two years, the environmental footprint of AI

technologies is undoubtedly set to increase.<sup>2</sup> The AI Act encourages companies to adopt strategies to minimize energy usage and optimize datacentre efficiency, such as by leveraging renewable energy and implementing advanced cooling technologies. By addressing the environmental impact of AI in line with regulatory guidance, businesses can align their operations with environmental goals and contribute to global sustainability efforts. On the flip side, AI can also be a tool to accelerate decarbonization around the world. There are AI-use cases that are already helping companies reduce energy use by optimizing energy storage, battery efficiency and smart grid management.<sup>3</sup>

<sup>1</sup> <https://artificialintelligenceact.eu/high-level-summary/>

<sup>2</sup> <https://hbr.org/2023/07/how-to-make-generative-ai-greener>

<sup>3</sup> AI's energy dilemma: Challenges, opportunities, and a path forward | World Economic Forum

### The societal perspective of AI

On the social front, AI presents several ESG-related risks, particularly in areas such as data privacy, bias in algorithms and safety concerns. AI systems rely heavily on vast amounts of data, which can lead to privacy infringements if not managed properly. The EU AI Act mandates robust data protection measures to safeguard individual privacy rights. Furthermore, AI algorithms can inadvertently perpetuate biases present in the data, resulting in unfair outcomes that undermine social equity.

For example, if historical credit data disproportionately represent certain demographics as high-risk, then AI might unfairly classify similar individuals as high-risk too. The AI Act requires companies to address

algorithmic fairness and transparency, ensuring AI systems do not perpetuate societal biases.

Safety concerns also arise from the deployment of AI in critical areas such as health care and autonomous vehicles, where errors can have severe consequences, such as wrong diagnoses and treatment errors. To mitigate these risks, companies must prioritize ethical AI practices that align with the AI Act, thereby supporting social ESG objectives. Conversely, when implemented judiciously, AI can serve as a contributor to societal prosperity. By providing low-cost tools and services that provide educational access to underserved communities, AI has the potential to enhance public services and drive inclusive development.



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### Governance challenges and opportunities with AI

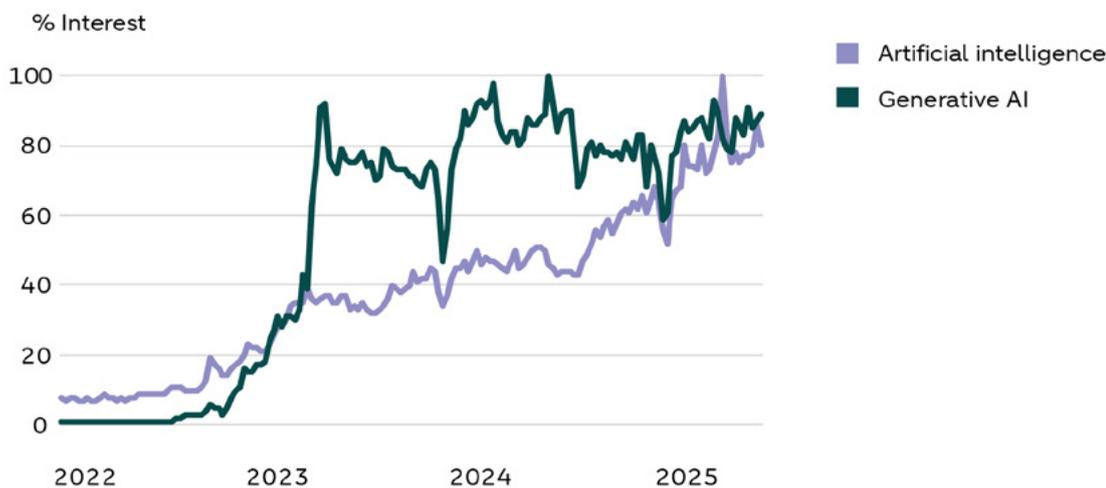
Lastly, from a governance perspective, the exponential growth of data generation presents both opportunities and challenges for companies managing ESG risks. While data is integral to AI development, its sheer volume necessitates robust data management strategies to prevent misuse and ensure integrity. Proper organization and management of data are essential to maximizing its value while safeguarding against potential ESG risks. The AI Act emphasizes the importance of data governance frameworks that prioritize transparency, security and ethical use of data. These frameworks can help organizations navigate the complexities of data management, ensuring that AI-driven insights are leveraged responsibly and contribute positively to ESG objectives.

### Vigilance required

In conclusion, as AI continues to evolve, businesses and governments must remain vigilant in managing ESG risks to ensure that technological advancements drive positive outcomes for society and the environment. There are many use cases for AI to help with some of our society's most pressing challenges, but it is important that we develop AI in a human-centred approach that prioritizes human needs, values and capabilities.

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**Figure 1: Noticeable increase in the number of searches for Artificial Intelligence and Generative AI**



Source: Google Trends, 1 June 2025