# AI data centres spark fresh fears over future UK water shortages



Advancements in artificial intelligence (AI) are creating unexpected challenges for the UK’s ability to manage future water shortages, according to the Environment Agency. The rapid growth of AI technologies has driven demand for data centres that rely heavily on fresh mains water to cool their servers. This surge has created a significant blind spot in government water planning, complicating forecasts and raising fears of more severe shortages than previously estimated.

The Environment Agency told The Guardian that its routine five-yearly projections of water deficits in England have become harder to complete, with AI’s rapid expansion missing from earlier estimates. Data centres use water not only for cooling but also to maintain critical infrastructure such as pipes, pumps and heat exchangers, preventing blockages caused by contaminants. A global study by Cornell University estimates that AI cooling could consume up to 6.6 billion cubic metres of water by 2027—nearly two-thirds of England’s current annual water use.

England is already under significant water stress. Projections suggest the public water supply could fall short by 5 billion litres a day by 2055, with a further 1 billion litres a day needed for agriculture, power generation and other growing technologies. Alan Lovell, chair of the Environment Agency, warned this rising pressure threatens everyday water access, economic growth and food security.

The government’s ambitions to position the UK as a global AI leader—outlined in its AI Opportunities Action Plan—envision the creation of AI Growth Zones to streamline planning and expand data centre capacity. Prime Minister Keir Starmer has backed fast-tracking these projects, citing their potential to boost local growth and innovation. However, some proposed sites, including areas near Abingdon, Oxfordshire—already flagged for water scarcity—pose notable environmental risks. The south-east of England faces a projected shortfall exceeding 2.5 billion litres of water per day by 2050, highlighting the need for careful planning to balance technological expansion with environmental sustainability.

Industry and regulatory voices are increasingly pushing for mandatory transparency on data centres’ water and energy consumption. The National Engineering Policy Centre has called for enforced sustainability reporting by tech firms to provide clear data on their environmental impact, supporting better policy decisions and public scrutiny. Technology giants such as Google and Microsoft have already reported rising water use since 2020, underscoring the urgency.

Environmental analysts point to evaporative cooling processes in data centres as a major drain on water supplies and recommend sustainable alternatives. These include adopting circular water systems that recycle water for cooling and exploring dry cooling technologies that significantly reduce fresh water demand. Advocates of sustainable AI stress that such measures are essential to align rapid AI growth with long-term resource protection goals.

Government initiatives are also focusing on energy infrastructure to ensure AI expansion remains sustainable. The AI Energy Council has been set up to ensure AI Growth Zones are located where power resources are sufficient and energy use is responsibly managed, aiming to attract investment without compromising environmental targets.

While the UK is pushing ahead with AI leadership ambitions through supportive policies and large-scale infrastructure plans, the environmental consequences—particularly around water use—require urgent action. Sustainable innovation in AI infrastructure, supported by transparent reporting, new technologies and strategic planning, will be vital to protect the nation’s water resources and strike a balance between technological advancement and environmental responsibility.

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## Bibliography

1. <https://www.globalgovernmentforum.com/ai-makes-water-shortages-harder-to-predict-says-uk-environment-agency/> - Please view link - unable to able to access data
2. <https://www.theguardian.com/technology/2025/jan/13/labour-ai-datacentre-growth-zone-water-shortages-abingdon-reservoir> - The Guardian reports on concerns regarding the establishment of AI data centre growth zones in areas like Abingdon, Oxfordshire, which are already facing water scarcity. The Environment Agency has identified the south-east of England as particularly vulnerable to water shortages, with projections indicating a potential deficit of over 2.5 billion litres per day by 2050. The cooling processes of AI data centres, which require substantial amounts of fresh water, could exacerbate these shortages. The article highlights the need for sustainable planning to balance technological growth with environmental conservation.
3. <https://www.gov.uk/government/publications/ai-opportunities-action-plan/ai-opportunities-action-plan> - The UK government's 'AI Opportunities Action Plan' outlines strategies to position the UK as a global leader in artificial intelligence. Key initiatives include establishing AI Growth Zones (AIGZs) to streamline planning approvals and enhance access to power for data centres. The plan also emphasizes the importance of building sufficient, secure, and sustainable AI infrastructure to support the growing demands of AI technologies, ensuring that the UK's AI ambitions are met with adequate resources and regulatory support.
4. <https://www.gov.uk/government/publications/international-ai-safety-report-2025/international-ai-safety-report-2025> - The 'International AI Safety Report 2025' discusses the environmental impacts of AI, particularly focusing on water usage. It highlights that cooling AI servers in data centres demands significant amounts of fresh water, which is evaporated in cooling towers. The report underscores the necessity for sustainable practices in AI infrastructure to mitigate environmental concerns, advocating for responsible water management and the adoption of technologies that reduce water consumption in AI operations.
5. <https://www.theplanner.co.uk/2025/02/17/engineers-call-sustainability-reporting-rules-data-centres> - The Planner reports on a call from the National Engineering Policy Centre for mandatory sustainability reporting for data centres. The centre urges the UK government to enforce accurate reporting of energy and water consumption by tech companies operating data centres. This initiative aims to promote transparency and accountability, enabling policymakers to understand and address the environmental risks associated with the proliferation of AI and data centre infrastructure.
6. <https://www.gov.uk/government/news/ai-energy-council-to-ensure-uks-energy-infrastructure-ready-for-ai-revolution> - The UK government has established the AI Energy Council to ensure the nation's energy infrastructure meets the demands of the AI revolution. The council focuses on developing AI Growth Zones (AIGZs) in areas with access to substantial power, aiming to attract private investment and create local jobs. This initiative seeks to balance the rapid expansion of AI technologies with sustainable energy practices, ensuring that the UK's energy resources are utilized efficiently and responsibly.
7. <https://www.cotie.co.uk/post/the-environmental-impact-of-ai-data-centres-addressing-the-water-use-challenge> - COTIE discusses the environmental challenges posed by AI-driven data centres, particularly concerning water usage. The article highlights the significant amounts of water required for cooling processes in these centres and advocates for mandatory reporting of energy and water consumption by tech companies. It also suggests adopting circular water solutions, such as using recycled water for cooling, and implementing dry cooling systems to reduce water usage, emphasizing the need for sustainable practices in AI infrastructure.