

THE AI THIRST PROBLEM

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The artificial intelligence revolution has a water problem — and it lands squarely in our sector's lap.

For years, the environmental debate around data centres focused on energy: the carbon footprint, the grid strain, the race for renewable power. Water barely got a mention. That is changing fast, and water professionals need to be paying attention.

The scale is staggering

Data centres powering AI systems consumed approximately 17 billion gallons of water in 2023, with projections showing usage will surge to 68 billion gallons by 2028 — a 300% increase in just five years. To put that in local terms: larger data centres require up to 5 million gallons of water every day — as much as a city of 50,000 people.

"Never in the history of this country has demand for water increased so dramatically in such a short time." — Klaus Reichardt, CEO, Waterless Co.

The reason is physics. AI workloads generate enormous heat. Cooling those server racks requires water — either directly through liquid cooling loops, or indirectly through the power plants that supply electricity. According to scientists at the University of California, Riverside, each 100-word AI prompt uses roughly one bottle of water. Multiply that across billions of daily queries and the numbers become difficult to grasp.

A new kind of industrial water user

What makes this different from traditional industrial water demand is the speed and geographic concentration of the build-out. In Newton County, Georgia, a Meta data centre that opened in 2018 uses 500,000 gallons of water per day — 10 percent of the entire county's water consumption. Communities that took decades to plan and build their water infrastructure are suddenly fielding requests that would double or triple local demand overnight.

The IEA estimates that global data centre water use could rise from 560 billion litres per year today to 1.2 trillion litres by 2030 — equivalent to the annual consumption of more than four million US households.

Water utilities, planners, and engineers are increasingly being drawn into conversations they were never consulted on at the planning stage. That needs to change.

The opportunity for the water industry

Here is where it gets interesting for our community. The data centre sector's water problem is, in many respects, a water industry opportunity.

Operators are under growing pressure — from regulators, investors, and local communities — to reduce freshwater consumption. The solutions they need are ones our sector has been developing for decades:

- Reclaimed water supply and non-potable sourcing for cooling
- Advanced treatment for cooling tower reuse
- Closed-loop liquid cooling system design
- Real-time monitoring and Water Usage Effectiveness (WUE) optimisation

AWWA's new white paper, *Cooling the Cloud*, specifically highlights the immense water resource and planning challenges utilities face as thirsty data centres are constructed to fuel the AI revolution. The paper calls for new strategies and skillsets to manage this demand — a signal that the water sector needs to position itself as a partner in solving it, not merely a supplier reacting to it.

What water professionals should be doing now

Three priorities stand out.

Get a seat at the table early. Data centre developers are moving quickly, often securing land and permits before utilities have been properly consulted. Utilities and water authorities need to engage in the planning process from the outset, not after a facility is built.

1. Get a seat at the table early. Data centre developers are moving quickly, often securing land and permits before utilities have been properly consulted. Utilities and water authorities need to engage in the planning process from the outset.

2. Develop reuse offerings. Operators actively want alternatives to potable water for cooling. Utilities with reclaimed water infrastructure, or the ability to build it, are well placed to become preferred suppliers — at rates that reflect the value of a guaranteed, large-volume offtake.

3. Build expertise in industrial water efficiency. The metrics that data centre operators use — Water Usage Effectiveness (WUE) — are becoming standard reporting requirements. Water professionals who understand these frameworks and can help clients optimise against them will be in demand.

The broader picture

Water is now central to business strategy, regulatory action, and the structure of the water technology market. The AI boom is accelerating that shift in ways that would have seemed unlikely even three years ago.

The data centre sector spent decades treating water as a cheap, abundant input. That assumption is collapsing. The water professionals and organisations who move quickly to offer credible, scalable solutions to this problem will define a significant new market — and help ensure that the communities caught between AI infrastructure and their own water security are not left without a voice.

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