



# Sustainable Water Solutions for Data Centers

**WATER TECHNOLOGIES**

## Your Water-related Challenges

The data center industry is rapidly evolving to meet the needs of a data-driven world. Increasing server densities and chipsets operating at higher temperatures are driving a transition to liquid cooling. From adiabatic cooling to indirect and direct liquid cooling, **the future of data center infrastructure is – surprisingly – wet.**

This transition to liquid cooling is occurring at the same time as an increased focus upon water conservation. Planning for new data centers must account for water resource management in a world where water scarcity is

more challenging and community relations is often tied to water resource planning. Owners, engineers, and operators are now **prioritizing the optimization of not only PUE, but also WUE.**

Water-related challenges other than optimizing WUE are also becoming more familiar. Data center designers and operators are tasked with **maximizing cooling system uptime** with variable water feed sources and qualities while relying upon personnel more experienced with white space hardware operations than with water treatment.

## Sustainable Solutions

At Veolia, we see these water and environmental challenges as opportunities to deploy **sustainable and cost-effective solutions.** Whether your project requires capital equipment, mobile systems, services, or specialty chemicals, Veolia is a global partner you can count on.

As the industry searches for solutions to its water-related challenges, Veolia utilizes its combined expertise in water treatment technologies, water chemistry, and plant operations to optimize customer facilities holistically. Advanced Veolia treatment technologies enable the use of non-potable water as cooling system makeup, preserving local water resources (see case study). Our membrane and chemistry technologies facilitate higher cycles of concentration in cooling systems as well as the recycle of cooling system brine (or blowdown), thereby **reducing**

**makeup water demand** and liquid discharge. Veolia technologies are even helping data centers eliminate discharge altogether, thereby optimizing a facility's WUE.

We appreciate that water treatment and evaporative cooling systems can be not only a challenge to design, but also to procure, construct, and operate in a manner that balances lifecycle costs and sustainability. For these reasons and more, Veolia is proud to also offer cooling water as a utility to data center customers. Allow us, the experts in water treatment and cooling systems, to design, build, and operate these systems and simply provide cooling water “over the fence” to your data center facility. This business model will **reduce your operating costs, improve your project schedule,** and free up your personnel to focus on other, aspects of your data centers.



## Case Study

In 2008, Loudoun Water opened the Broad Run Water Reclamation Facility (BRWRF) at its Ashburn, VA campus. This facility utilizes an advanced treatment process, including Veolia membrane bioreactor (MBR) technology, to treat municipal wastewater. The reclaimed (or highly-treated) water is suitable for non-potable reuse and Loudoun Water supplies between 1.5 and 3.5 million gallons per day (MGD) of reclaimed water to local data center customers for cooling use. The use of reclaimed (or highly treated) water is growing in acceptance within the industry as a cost-effective and sustainable alternative to potable water. The growing cooling load within data centers has translated to increasing demand for reclaimed water from the BRWRF. Loudoun Water is currently planning an expansion of the facility to accommodate new/expanded data centers. As stated by Loudoun Water, the facility has set a “standard for environmental protection and water reclamation.”



## Your Trusted Partner

Veolia is assisting data center customers around the world deploy cost-effective and sustainable solutions to many of the water and environmental challenges the industry is facing. We look forward to learning about your challenges and partnering to chart a path towards a sustainable future.



Resourcing the world

**Veolia Water Technologies**

Please contact us via:

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