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NexTurbo TECHNOLOGIES

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Beyond Variable Speed:

A Smarter Wastewater Aeration Strategy with Next Turbo Blowers

FILTRALITE®

Filter Media: Proven Technology for Higher Efficiency, Better Water Quality, and Lower Costs

Florian Adam

Member of the Board and Sales Director

Next Turbo Technologies

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Al Mousa Trading Delivers High-Performance Industrial Water Storage Solutions

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Innovative Solutions to Achieve Sustainability in Water and Energy

From The Editor

As we navigate the complexities of modern water management, one theme resonates across every sector: the transition from reactive maintenance to proactive, intelligent resilience. This issue explores the technological leaps, from aerodynamic precision to artificial intelligence, that are redefining how we value and manage our most precious resource.

We begin by challenging the status quo in aeration, the most energy-intensive process in wastewater treatment. Next Turbo makes a compelling case for aerodynamic control over variable speed, utilizing Dual-Point Control with inlet guide vanes to achieve stability and efficiency without the electrical complexity of VFDs. At the same time, Filtralite® shows how sophisticated expanded clay media can be used in place of conventional sand, doubling filtration rates & drastically reducing operating costs, as demonstrated in Vestfjorden and other plants.

The digital revolution is no longer a future concept but a present reality. We examine the transformative power of Digital Twins (DTs), which are creating virtual replicas of physical systems to predict performance and optimize assets. From NIRAS's hydraulic models in Denmark to DC Water's resilience strategies, these tools are bridging the gap between raw data and decisive action. Furthermore, the integration of Generative and Agentic AI is empowering utilities to move beyond simple automation, acting as digital copilots that optimize treatment and detect leaks in real-time.

Sustainability is also finding new champions in regional leadership & energy neutrality. We highlight Al Mousa Trading's strategic execution of industrial water storage in Saudi Arabia, and the groundbreaking work of VandCenter Syd in Denmark. In partnership with Jacobs, they have transformed the Ejby Mølle facility from a consumer into a net energy producer, generating 150% of its energy needs while reducing its carbon footprint.

Finally, we look at the circular economy through the lens of biogas. Innovations like Vogelsang's CC-Mix are enhancing the efficiency of converting agricultural and organic waste into renewable energy, turning potential pollutants into power.

Whether it is through the microscopic pores of filter media or the algorithmic foresight of AI, the water sector is building a future defined by efficiency, intelligence, and unwavering sustainability.

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Beyond Variable Speed: A Smarter Wastewater Aeration Strategy with Next Turbo Blowers

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By Florian Adam
Board Member and Sales Director
Next Turbo Technologies

Aeration remains the most energy-intensive process in wastewater treatment plants, often accounting for more than half of total plant power consumption. As utilities strive to reduce both CAPEX and operating expenditures while ensuring reliable biological performance, the choice of blower technology becomes a strategic decision rather than a purely technical one.

Rethinking Airflow Control for Wastewater Treatment Plants

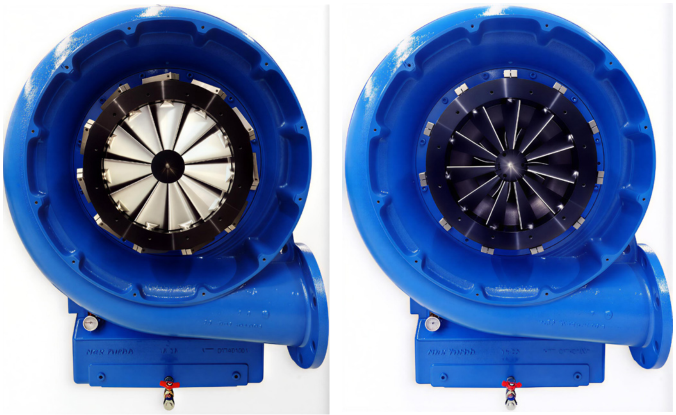
High-speed centrifugal blowers typically rely on variable frequency drives (VFDs) to regulate airflow. While flexible, this introduces electrical complexity, harmonic distortion, and sensitivity to environmental conditions. From a cost perspective, these requirements translate into higher CAPEX and increased maintenance risks over the blower's lifecycle.

Aerodynamic Control: The Proven Alternative

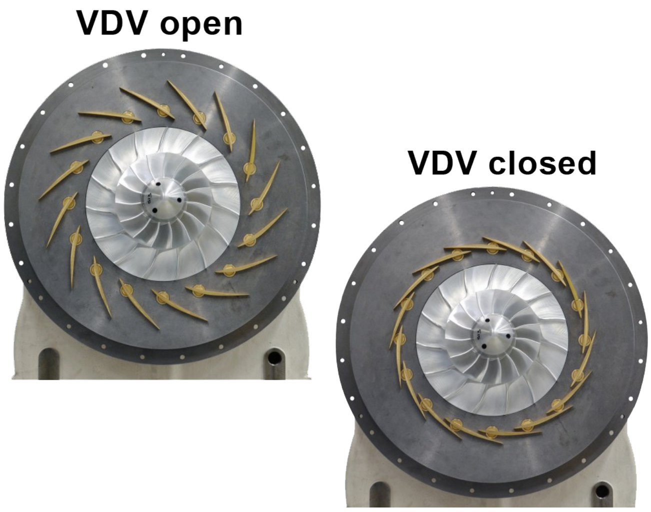
Alternative philosophy focuses on regulating airflow aerodynamically. In integrally geared centrifugal blowers, capacity control is achieved through Dual-Point Control: Inlet Guide Vanes (IGV) combined with Diffuser Vane (VDV) control.

These vanes allow precise airflow adjustment while maintaining operation at peak efficiency, avoiding the losses and auxiliary cooling systems associated with VFDs.

• Inlet Guide Vanes (IGVs) are located at the blower's intake and adjust the pre-rotation of air before it enters the impeller. By changing the angle of these vanes, the IGVs alter how the incoming air stream approaches the impeller blades, effectively modifying the airflow entering the machine.

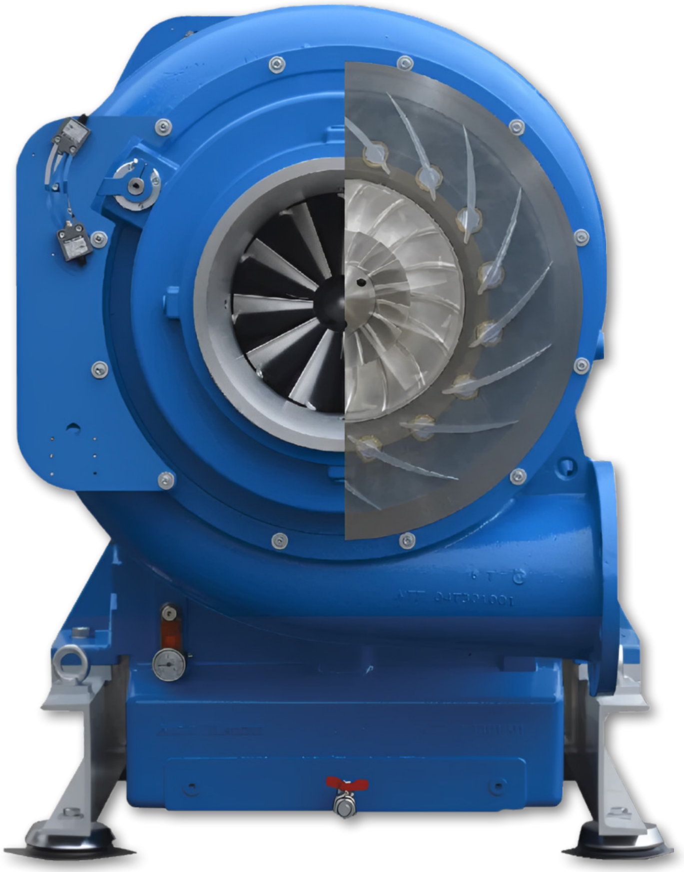


• Diffuser Vanes (VDVs) are positioned in the compressor's outlet diffusing section. Adjusting the outlet vane angles changes how the airflow decelerates and converts kinetic energy into static pressure after leaving the impeller. This allows the blower to match different operating points while maintaining high efficiency.



Together, in Dual Point Control, the IGVs pre-condition the incoming air to match operating conditions, while the VDVs fine-tune the airflow.

This coordinated adjustment enables the blower to vary airflow over a wide range without changing rotational speed, keeping operation efficient and stable.



The Next Turbo Approach: Modernizing a Classic Concept

Next Turbo has refined this aerodynamic philosophy to meet the demands of modern infrastructure.

While traditional geared designs often provide a turndown range of 45-100%, Next Turbo blowers are engineered to achieve a wider, more flexible range of 40% to 100% capacity.

> "Next Turbo blowers represent the next generation of aeration technology, combining efficiency, reliability, & simplified operations,"
>
> says Florian Adam, Board Member and Sales Director.

This modernization extends to superior mechanical integrity. Unlike older industry standards that may use Gray Iron (GG25), Next Turbo utilizes Ductile Iron (GJS-400) for all castings, offering a tensile strength of 400 MPa—double that of conventional models. This ensures the structural durability required for high-pressure, continuous-duty applications.

Efficiency and Reliability in Harsh Environments

Wastewater environments are unforgiving, with high ambient temperatures and corrosive gases.

Next Turbo blowers are designed to operate reliably in climates ranging from -30°C to +55°C. They feature a high tolerance for hydrogen sulfide (H_2S), withstanding up to 10 ppm (and up to 40 ppm with specialized anodization, or more than 40 ppm with a stainless steel impeller), whereas many high-speed VFD-based blowers require strictly controlled "clean room" environments.

A critical reliability feature is the Labyrinth-type Inlet Silencer. Many manufacturers utilize foam elements in the airpath which become brittle and deteriorate over time, eventually being sucked into the blower and blocking the fine-bubble diffusers in the aeration basins. Next Turbo's modern labyrinth design eliminates this risk, ensuring clean airflow and protecting the plant's downstream assets.

Advanced Stability with Tilting Pad Bearings

To ensure maximum operational stability, Next Turbo blowers are equipped with Tilting Pad Bearings as standard. This advanced bearing technology eliminates "oil whirl" vibrations and provides superior damping at high speeds. When combined with machined aluminium impellers, the result is a robust machine designed for a lifetime of over 25 years, significantly outlasting VFD-driven alternatives.

True sustainability extends beyond peak efficiency. By combining high-strength materials, simplified electrical architecture (no VFD or harmonic filters), and reduced maintenance complexity, Next Turbo delivers a significantly lower Total Cost of Ownership (TCO).

Conclusion

Variable-speed technology is not a one-size-fits-all solution.

In wastewater aeration, where reliability, wide turndown, and mechanical simplicity are critical, modern aerodynamic control offers a compelling advantage.

Next Turbo exemplifies this evolution, providing a balanced strategy that supports sustainable plant operation throughout the entire equipment lifecycle.

Next Turbo vs. Conventional VFD Based Blowers

Criteria	Next Turbo Blowers	Conventional VFD-Based Blowers
Control Concept	Aerodynamic Dual-Point Control (IGV + VDV)	Speed control via VFD (single-point)
VFD Requirement	No VFD – no harmonic losses	High-frequency VFD required
Airflow Turndown Range	40–100% wide and stable	Typically 70–100%
Efficiency Across Range	High & stable (≈84% → 82%)	Drops significantly at part load
Electrical Complexity	Simple electrical setup	Complex systems + filters + cooling
Harmonics (THD)	0% (no VFD)	High THD → filters & extra losses
Material & Strength	Ductile Iron (GJS-400) – high durability	Cast aluminum / lighter materials
Bearing Technology	Tilting Pad / Ceramic – industrial-grade	Magnetic or airfoil (limited capacity)
Surge Resistance	Can withstand surge events	One surge may damage the machine
Lifetime Expectancy	25+ years	Often < 10 years
Environmental Tolerance	Harsh climates & H_2S-resistant	Clean-room conditions required
Operating Climate	-30°C to +55°C	Narrow temperature window
Maintenance & TCO	Low maintenance, lower TCO	Higher maintenance & lifecycle cost

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FILTRALITE®

Filtralite® Filter Media: Proven Technology for Higher Efficiency, Better Water Quality, and Lower Costs

With the continuous increase in water demand and rising operational costs, water treatment, wastewater, and desalination plants are under growing pressure to achieve higher efficiency with lower expenditure. This is where Filtralite®, a high-performance expanded clay filter media developed by Saint-Gobain, stands out as one of the world's most advanced and reliable filtration solutions, delivering superior treatment efficiency, reduced energy consumption, and long-term operational savings.

The Real Challenge in Filtration Systems

Why Traditional Media Are No Longer Enough

Many plants still rely on conventional filtration media such as sand and anthracite, which face several operational challenges, including:

-High head loss
-Rapid filter clogging
-Media layer intermixing
-High operation and maintenance costs
-Limited performance with poor raw water quality

These issues directly impact plant efficiency and long-term sustainability.

Experts Driving Innovation

Filtralite® solutions are backed by deep industry expertise led by Eng. Mohamed Kastawy, Area Sales Manager for the Middle East, with more than 20 years of experience in pumps, desalination, and water treatment. This strong background ensures solutions that are practical, proven, and results-driven.

Saint-Gobain & LECA

A Global Industrial Foundation

Filtralite® is a product of the global Saint-Gobain Group, through LECA International, one of the leaders in advanced engineered materials. This affiliation reflects a strong commitment to quality, innovation, & sustainable performance.

What Is Filtralite®?

Advanced Filter Media Technology

Filtralite® is a filter media made from expanded clay, characterized by its lightweight structure and highly porous surface. These properties allow superior particle retention while maintaining high filtration rates. Filtralite® can also be used as a direct replacement for sand and anthracite, without complex system modifications.

One Solution, Multiple Applications

Where Is Filtralite® Used?

Filtralite® is a proven expanded clay filter media used in drinking water treatment plants, wastewater treatment plants, and pre-treatment systems for desalination plants. Its product portfolio includes:

- **Filtralite® Pure**

Designed for drinking water treatment and pre-treatment for desalination plants.

- **Filtralite® Clean**

Developed for municipal and industrial wastewater treatment applications.

- **Filtralite® Air**

Engineered for odour control and air/gas purification systems.

Filtralite® has been successfully installed in more than 500 water treatment plants worldwide, including drinking water & wastewater facilities across more than 60 countries, demonstrating its reliability, efficiency, and long-term operational performance.

Operational Performance That Makes the Difference

Numbers That Prove the Advantage

Filtralite® delivers clear operational benefits, including:

- 2 to 4 times fewer backwash cycles
- Filtration rates reaching up to 20 m/h
- Reduced energy and water consumption
- Improved water quality indicators such as SDI and TOC
- Reduced biofouling & extended RO membrane lifetime

The result is more than 50% savings in operational costs at the filtration stage.

Filtralite® Revolutionizes Wastewater Treatment at Vestfjorden Plant

At the Vestfjorden Wastewater Treatment Plant, Filtralite® has set a new benchmark in water treatment by enhancing quality & operational efficiency, ensuring long-term sustainability.

Challenges:

- Conventional filter media limited treatment efficiency.
- Frequent backwash cycles increased operational costs.
- Stricter environmental standards required improved water quality.

Solution:

- Transitioned to Filtralite® for superior filtration performance.
- Leveraged lightweight, high-porosity media to boost efficiency.

Results:

- Crystal-clear water like never before.
- Significant reduction in backwash cycles.
- Lowered energy and operating costs.
- Stable, sustainable, high-performance operation.

Smarter Investment for the Future

Lower CAPEX and Faster ROI

Beyond operational savings, Filtralite® offers strong investment advantages:

- Up to 50% reduction in the number of filtration cells
- Smaller pumps and reduced concrete and steel requirements
- Service life of up to 25 years
- Return on investment in less than 3 years

Conclusion

Filtralite® is not just filter media it is a complete filtration solution that redefines efficiency in water and desalination plants. For operators seeking higher performance, better water quality, and lower costs, Filtralite® is the smart choice for a more efficient and sustainable future.

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Contact Filtralite®

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Filtralite® Filter Media: Proven Technology for Higher Efficiency, Better Water Quality, and Lower Costs

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- **Innovative Technology:** Expanded clay filter media with high porosity and lightweight structure.
- **Superior Performance:** Reduces backwash cycles and energy consumption.
- **Cost Efficiency:** Lower operational costs and improved water quality.
- **Proven Success:** Successfully implemented at Vestfjorden Wastewater Treatment Plant with enhanced filtration and reduced costs.
- **Quick ROI:** Up to 50% fewer filtration cells and a service life of 25 years.

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Al Mousa Trading Delivers High-Performance Industrial Water Storage Solutions

In today's industrial landscape, reliable water infrastructure is no longer optional, it is a strategic necessity. Al Mousa Trading continues to set new benchmarks by delivering advanced industrial water storage solutions that combine engineering expertise, proven technologies, and precise execution to support long-term operational performance.

Al Mousa Trading: Engineering Expertise That Powers Reliable Water Infrastructure

Al Mousa Trading is a leading provider of integrated water and pumping solutions, specialising in high-performance systems for industrial and infrastructure projects across the region. With a strong focus on engineering accuracy, technical compliance, and professional execution, the company delivers dependable solutions that enhance efficiency, reliability, and sustainability.

Why Industrial Water Storage Is a Game-Changer for Modern Facilities

Industrial water storage plays a vital role in maintaining operational continuity, managing peak demand, & ensuring process stability.

Well-designed storage systems support safety standards, protect production cycles, and reduce operational risks—making the choice of technology and execution partner a critical strategic decision.

Project Spotlight: Siniora Factory – Jeddah

Al Mousa Trading successfully completed the supply and installation of three Glass-Fused-to-Steel (GLS) tanks for the Siniora Factory project in Jeddah.

Delivered in collaboration with Al-Mira Contracting Company, the project met all technical specifications, quality standards, and agreed timelines, providing a robust & reliable water storage solution.

From Design to Delivery: Integrated Engineering & Seamless Execution

The project scope covered full coordination, technical compliance, and on-site execution. Al Mousa Trading's engineering and site teams managed every phase with precision, ensuring seamless integration within the factory's infrastructure while minimising risks and optimising installation efficiency.

Why GLS Tanks? A Smart Choice for Long-Term Performance

GLS tank technology is widely recognised for its corrosion resistance, durability, and extended service life. These characteristics make it ideal for demanding industrial environments, delivering consistent performance, reduced maintenance requirements, & long-term protection of water quality.

Built on Quality, Safety, and Full Technical Compliance

Quality and safety were prioritised throughout all project stages. Al Mousa Trading ensured that materials, installation procedures, and site activities complied with all applicable technical and regulatory standards, guaranteeing safe operation, system reliability, and long-term asset integrity.

More Than Installation: Delivering Long-Term Operational Value

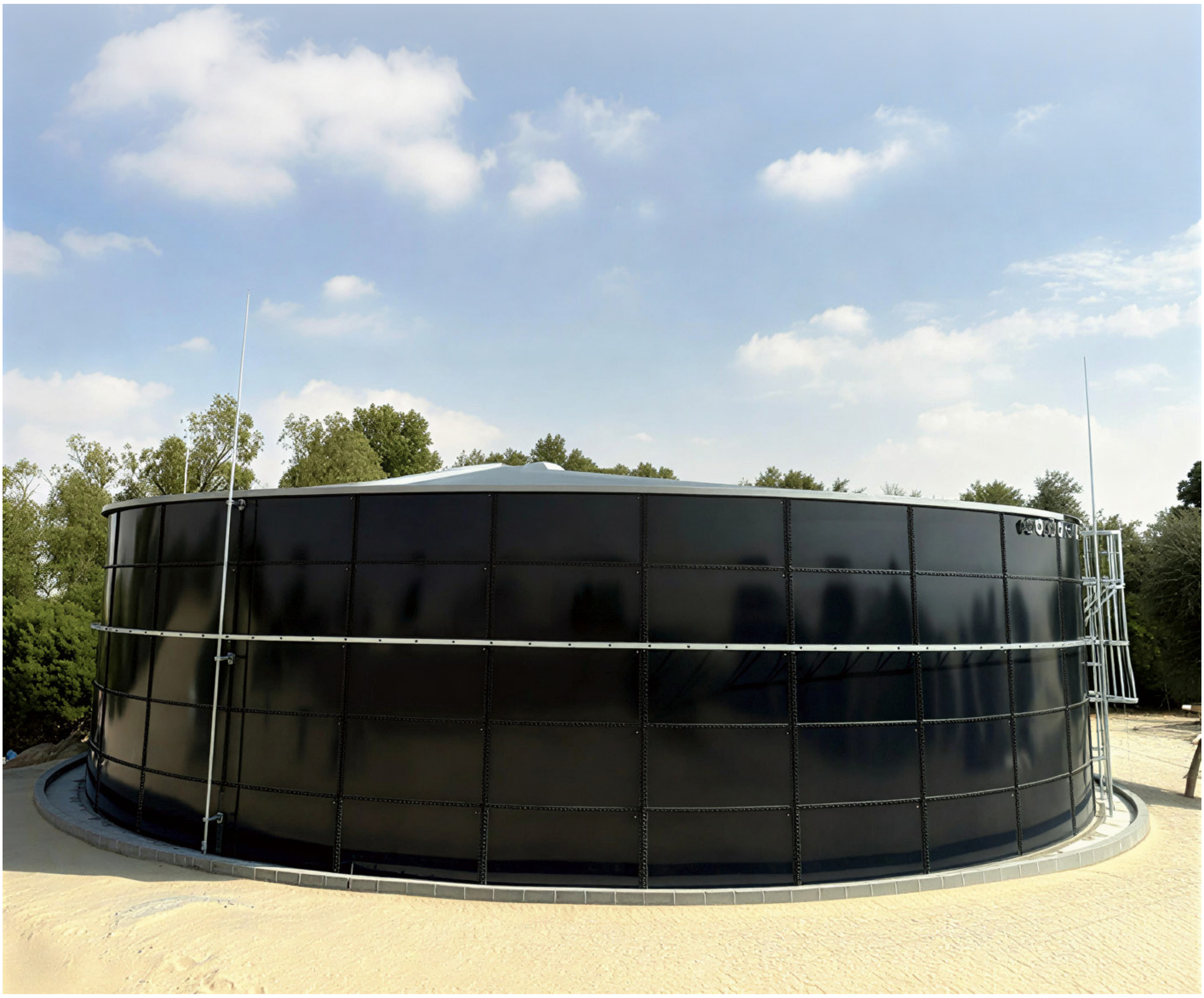
Beyond installation, the project reflects Al Mousa Trading's value-driven approach to industrial infrastructure. Through professional project management and engineering expertise, the company delivers solutions that reduce lifecycle costs, optimise operational efficiency, and minimise long-term risks.

Reinforcing Leadership in Industrial Water Infrastructure

The successful completion of the Siniora Factory project strengthens Al Mousa Trading's position as a trusted partner in industrial water infrastructure. Consistent delivery, technical excellence, and commitment to best practices continue to reinforce the company's leadership across the regional market.

The Future Starts Now: Powering Sustainable Industrial Growth

As industries increasingly prioritise resilience, efficiency, and sustainability, Al Mousa Trading remains committed to advancing industrial water storage solutions. By combining proven technologies with expert execution, the company continues to support future-ready infrastructure and sustainable industrial growth.



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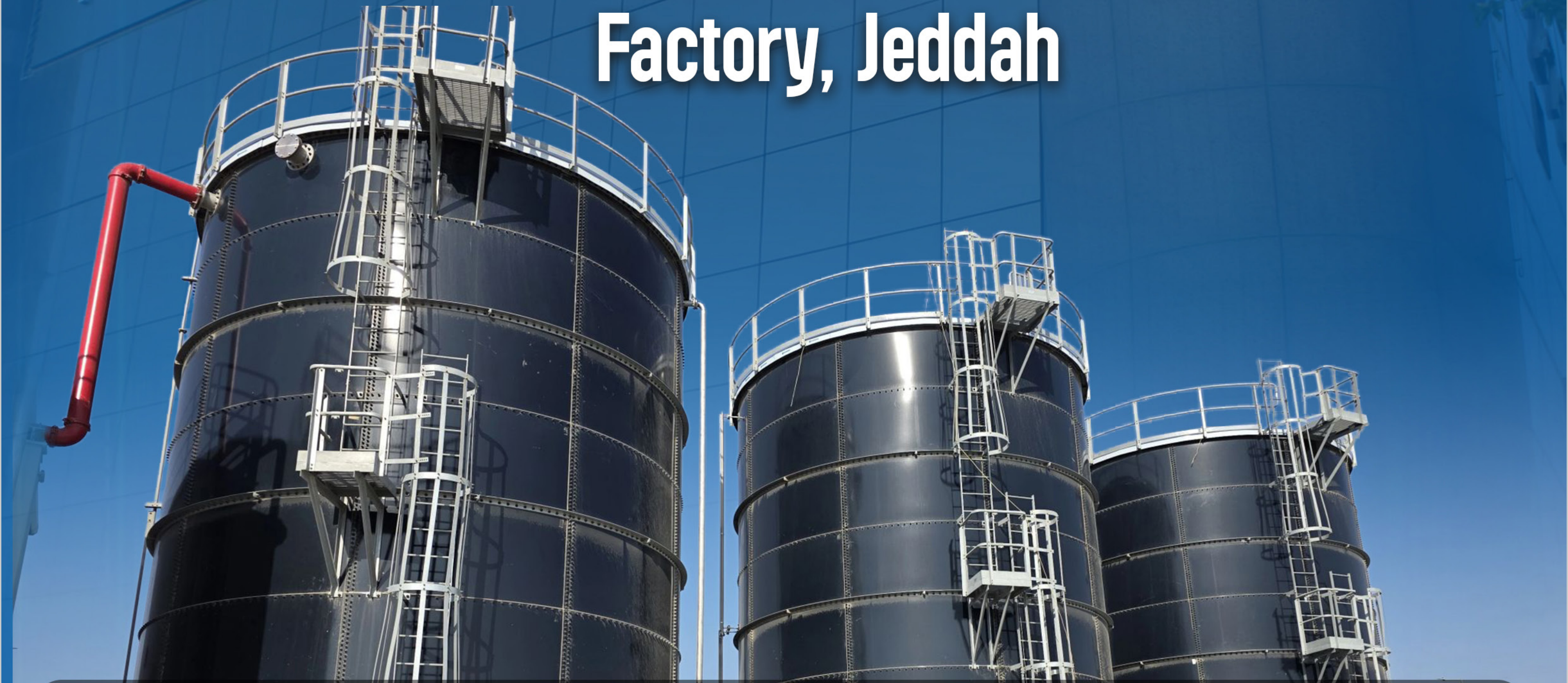
Al Mousa Trading Delivers High-Performance Industrial Water Storage Solutions – Siniora Factory, Jeddah



- **Engineering Expertise:** Reliable, integrated water solutions.
- **Industrial Impact:** Optimised storage for continuity & safety.
- **Project Excellence:** GLS tanks successfully installed at Siniora Factory.
- **Smart & Durable:** Long-term performance with low maintenance.
- **Quality & Safety:** Fully compliant materials and execution.
- **Sustainable Growth:** Future-ready water solutions for resilient industries.

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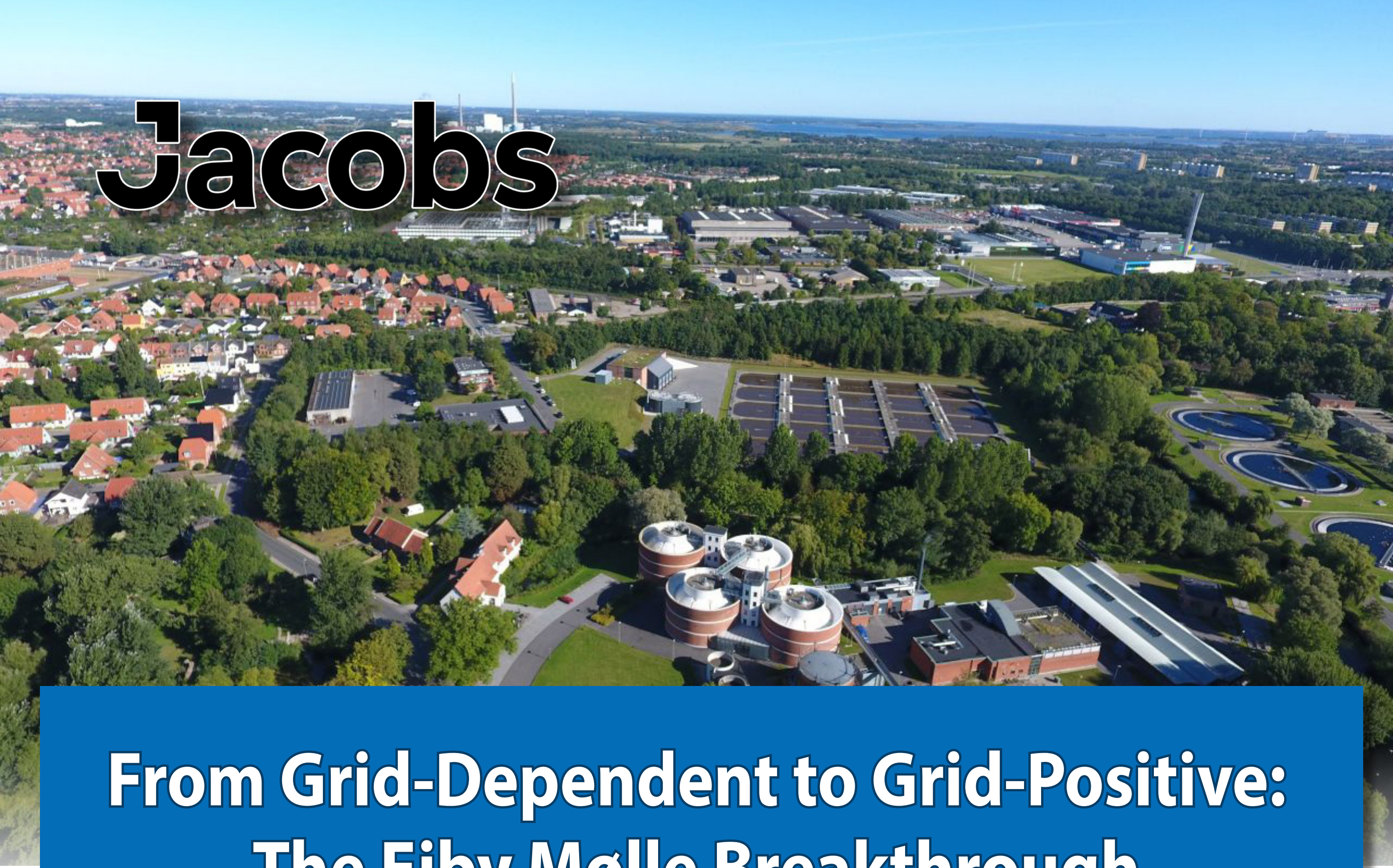

From Grid-Dependent to Grid-Positive: The Ejby Mølle Breakthrough

Municipal wastewater treatment in the United States is a significant energy consumer, accounting for approximately 2-3% of the nation's total electricity usage. Energy costs are second only to labor expenses in the overall operational costs of wastewater reclamation, making it a critical area for optimization. Reducing energy consumption in water resource recovery facilities not only lowers operational expenses but also has substantial environmental benefits. By decreasing reliance on energy from fossil-fuel-based power grids, utilities can significantly reduce greenhouse gas emissions, contributing to a cleaner environment and mitigating climate change.

These dual benefits—financial savings and positive environmental impact—highlight the importance of adopting energy-efficient technologies and practices in water reclamation. But what if we showed you how VandCenter Syd (VCS) Denmark transformed Odense, Denmark's largest water resource recovery facility (WRRF), from a large electrical power consumer into a net producer of electricity and heat energy?

Forming an Ambitious Goal and Innovative Partnership

VCS is a Danish water and used water company with more than 150 years of operational experience and a strong tradition of innovation, with a focus on implementing triple-bottom-line sustainability practices and innovative technologies to manage the water-energy nexus.

In 2009, the company implemented the Beyond Energy Neutrality program, aimed at improving resiliency and sustainability through turning the Ejby Mølle WRRF from a large electrical power consumer to a net producer of electricity and heat energy used within the City of Odense in Denmark. The plant has a 410,000-population equivalent capacity in Denmark's third-largest city, is the company's largest facility and is required to meet very stringent nutrient limits in its discharge into a small, local river.

Through its own efforts, VCS was able to implement changes in the facilities and operations of the plant and achieve a very impressive level of 77% energy self-sufficiency before engaging Jacobs to identify additional energy optimization opportunities (EOOs) in 2012. The next step was surpassing 100%.

Developing a Programmatic Approach for a Solution

After seeking advice from traditional Nordic engineering firms, VCS Denmark discovered a Jacobs paper on energy optimization. The chance discovery led to a cold email, a competitive tender, and a 13-year collaboration.

Jacobs began by hosting energy optimization workshops in Odense focused on developing and leveraging a whole-plant model using historical data. The model covered both liquid and solids processing treatment trains, energy generation & regulatory compliance. All solutions ensured effluent quality met regulatory standards and were measured against pre-established metrics for energy demand and energy generation.

The workshops led to the swift implementation of energy optimization opportunities (EOO). One significant breakthrough came in side stream treatment: Jacobs introduced a granular-based deammonification process, first applied to digested sludge side streams, then later to the mainstream treatment. This was one of the world's first uses of this process and a first in the Nordics.

> "VCS Denmark strives to be a model for incorporating sustainability principles in its operations. Very few treatment facilities can consider themselves energy self-sufficient, let alone net energy positive, and this project is a model advancing sustainable water resource recovery."
>
> Dr. Julian Sandino,
> Jacobs Vice President, Wastewater Solutions
> Global Director Emeritus

Going Program-wide, rather than Standalone Solutions

Jacobs's approach aimed to develop a comprehensive electrical energy consumption profile and identify EOOs that relied primarily on relatively quick-to-implement process modifications, which would significantly reduce electrical power consumption and/or increase power generation from cogeneration. The approach also identified (but did not fully develop) more complex improvements that could be considered for future implementation.

Jacobs developed a plant-wide process model to identify, prioritize and develop the selected EOOs and used historical flows, solids loads and operational data (including electrical energy consumption and production) to calibrate and run the process model.

We quickly & thoroughly evaluated multiple process re-configuration scenarios as well as the impact of implementing operational modifications to existing systems – making sure that the stringent effluent requirements were always met, while also measuring improvements against pre-established metrics for energy demand, energy generation and carbon footprint.

The following alternatives have been developed as part of the program:

- An ammonia-based aeration control for biological nutrient removal.
- A nitrous oxide (N_2O) probe for continuous measurement of emissions from liquid processes.
- First full-scale granular sidestream deammonification process controlled to minimize N_2O emissions while maximizing ammonia removal.
- First full-scale application in Scandinavia of induced granulation processes to improve biomass settleability in activated sludge bioreactors.
- First full-scale application in Scandinavia of facilities to leverage mainstream deammonification as part of a biological nutrient removal system.

> “Our work with VCS Denmark goes far beyond traditional collaboration. It empowers our joint team to innovate through leadership, ambition and continuous testing and iteration. It’s the foundation that challenges the status quo and drives the industry forward.”
>
> Dr. Julian Sandino,
> Jacobs Vice President, Wastewater Solutions Global Director Emeritus

Achieving Self-sufficiency through Energy Optimization

When VCS set its goal of achieving carbon neutrality and energy independence in five years, it was optimistic. Many utilities have set similar energy self-sufficiency goals, often allowing themselves a 20- or 30- year period to study alternatives, implement solutions and then undertake significant and costly capital improvement programs. The goal of five was incredibly ambitious, yet, with help from Jacobs, VCS did it (and more) in only three, and with just a little more than $2 million in capital expenditures.

The Ejby Mølle WRRF achieved energy neutrality in 2013, primarily by leveraging carbon redirection to reduce process energy consumption while increasing energy generation from a biogas-driven combined heat power system. And with the innovative solutions developed by the Jacobs team, the plant now generates more than 150% of its energy (electrical and heat) demand by adopting sidestream and mainstream assisted deammonification capabilities. Surplus electrical energy is fed back into the power grid and hot water is used in a district heating system that serves locations up to 12 miles away. This is achieved while still maintaining full effluent compliance with total nitrogen and total phosphorus concentrations averaging less than 6.0 and 0.5 mg/L respectively, without having to rely on external carbon addition.

In 2018, the International Water Association recognized the Beyond Energy Neutrality Program as an outstanding example of innovation in the water sector. The project nabbed the silver award in the Performance Improvement and Operational Solutions category of the association's 2018 Project Innovation Awards.

Continuing support of VCS' next steps toward sustainable water resource recovery at the Ejby Mølle WRRF, Jacobs helped develop a two-year industry-first demonstration program focused on how an emerging technology called membrane aerated biofilm reactor might deliver further energy savings, while reducing greenhouse gas emissions and requiring a much smaller facility footprint.

> "When we were facing the challenge of achieving energy positivity at Ejby Mølle, Jacobs provided the expertise and programmatic approach we needed. They didn't just offer theoretical solutions; they worked alongside our team, using data-driven analysis and customized modeling to identify and implement practical, impactful improvements. The results speak for themselves: we achieved energy neutrality ahead of schedule without compromising the effluent quality. Jacobs has been instrumental in turning our ambitious goals into reality."
>
> Mads Leth
> Chief Executive Officer of VCS Denmark

• 8 + Industry innovations created through this 13-year collaboration
• 150 % of the Ejby Mølle WRRF's energy is now self-generated
• 400 K people served by an energy-efficient advance nutrient removal facility with a biogas-powered combined heat and power system
• $ 2 M USD capital expenditure needed to achieve energy-positivity within three years
• 12 Miles the heat generated from the plant travels through a district heating system

Leading the Industry through Innovation and Collaboration

These early wins evolved into the Beyond Energy Neutrality program – a long-term initiative aimed at making the entire utility, not just the Ejby Mølle facility, net energy positive, with the clear additional goal of becoming carbon-neutral in the future. This award-winning program has transformed VCS Denmark into a global leader in energy-positive water utilities.

The relationship continued to produce a long list of innovations, including:

- Demonstrating an industry-first membrane aerated biofilm reactor (MABR), reducing greenhouse gas emissions & facility footprint. This demonstration led to full-scale implementation at another VCS Denmark facility.
- Implementing Jacobs' proprietary Microbial Hydrolysis Process (MHP) to enhance anaerobic digestion. This breakthrough method boosts volatile solids reduction from 60% to over 75%, increasing biogas production by 25% and reducing biosolids output. A full-scale facility using this technology is expected to be operational by 2026.

Laying the Foundation for Future Success

Ejby Mølle achieved energy neutrality in 2013—two years early and under budget—primarily by redirecting carbon to maximize energy generation. By 2024, the plant generated 150% of its electrical and heat energy needs, feeding surplus electricity to the grid and supplying hot water to a district heating system reaching 12 miles. All of this was achieved while maintaining strict effluent compliance – averaging under 6.0mg/L for nitrogen and 0.5 mg/L for phosphorus – without needing external carbon.

The plant also recovers thermal energy from treated effluent, owned and operated by sister utility Fjernvarme Fyn. In 2024, this additional recovery method allowed the plant to reach 330% net energy self-sufficiency.

It's anticipated that the upgrade with MHP will increase volatile solids reduction from 60% percent to over 75% with a corresponding 25% increase in biogas production and a corresponding reduction in biosolids production. This first-of-its-kind facility is expected to be operational by the end of 2026.

The VCS Denmark and Jacobs relationship proves that incremental innovations can lead to groundbreaking results. By leveraging advanced technology, industry collaboration, and forward-thinking leadership, the future of sustainable water utilities is here.

Conclusion

The transformation of the Ejby Mølle WRRF demonstrates that energy-positive, carbon-conscious wastewater treatment is not a distant aspiration but an achievable reality. Through ambitious goal-setting, data-driven decision-making, and a long-term collaborative partnership, VCS Denmark and Jacobs redefined what a modern water resource recovery facility can deliver—environmental stewardship, financial efficiency, and regulatory excellence simultaneously.

By prioritizing system-wide optimization over isolated upgrades, the program unlocked scalable innovations that continue to push performance boundaries. Ejby Mølle now stands as a global model, proving that with vision, innovation, and collaboration, wastewater utilities can become net contributors to a sustainable energy future.

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WEBINARS

Meet our Experts at Aqua Energy Expo Weekly Webinars

Eng. Ahmed Khairy

"1-Steps for Designing a Desalination Plant
2-Fundamentals of Membrane Selection
3-LG Q+ Software Projection"

Friday, February 6th

8:00 to 10:00 PM
(Saudi Arabia Time)

Dr. El-Sawy Mabrouk El-Sawy

"Industrial Wastewater: From Analysis Sheet to Treatment Decision"

Saturday, February 7th

8:00 to 10:00 PM
(Saudi Arabia Time)

Dr. Ibrahim Mokhtar Ibrahim

" Applying Artificial Intelligence and Geographic Information Systems (GIS) for Spatial Prediction of Potential Risks and Failures in Drinking Water Networks"

Sunday, February 1st

09:00 - 11:00 PM
(Saudi Arabia Time)

Dr.-Ing. Ehsan M. Pajooh

Mr. Hans-Christian von Consbruch

"Optimizing Biological Treatment Performance in WWTPs with High-Efficiency Diffusers and ShearCon® IFAS Technology"

Friday, February 13

5:00 – 7:00 PM (KSA)
4:00 – 6:00 PM (Egypt)

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WATER NEWS BRIEF

February| 2026

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DuPont Introduces DuPont™ AmberLite™ FPA57 Resin to Boost Efficiency in Organic Acid Purification

DuPont has launched the DuPont™ AmberLite™ FPA57 resin, a weak base anion resin aimed at supporting organic acid manufacturers. Organic acids are vital in various industries, including food and beverage, personal care, and pharmaceuticals. The new resin enhances organic acid purification, offering larger capacity and higher stability, which helps reduce regenerant chemical consumption and wastewater generation. It provides five to ten percent longer cycle times, improving productivity and resin life. Designed as an upgrade to AmberLite™ FPA55, it maintains the same characteristics for seamless integration, ensuring consistent quality in acid processing.

Ecolab and CDP Partner on New Benchmarks to Help Companies Improve Operational Water Performance

Ecolab Inc. and CDP have launched the Water Use Efficiency Index, a benchmark aimed at helping companies assess and enhance their water performance. Announced at the World Economic Forum, the Index will initially focus on the Beverage and Brew segment of the Food, Beverage, and Agriculture industry. With global freshwater demand projected to exceed supply by 56% by 2030, improving water efficiency is crucial. The Index leverages data from over 10,000 corporate disclosures and Ecolab's extensive insights to establish best-in-class benchmarks, enabling companies to optimize their water use and reduce operational costs effectively.

SUEZ Awarded a Sludge Dewatering Contract in Hong Kong, Setting a New Benchmark for Asia's Largest Sewage Treatment Plant in Caverns

SUEZ has secured a contract to provide a sludge dewatering solution for the Relocation of Sha Tin Sewage Treatment Works to Caverns, a project by Hong Kong's Drainage Services Department. Scheduled for completion in 2030, the facility will be one of Asia's largest sewage treatment plants in an artificial cave, optimizing land use and enhancing sustainability. SUEZ will utilize 16 units of the Dehydris™ Twist sludge dewatering system, which has proven reliable in various countries. The project aims to produce about 120,000 tonnes of dewatered sludge annually, supporting Hong Kong's circular economy and carbon reduction goals.

Major Milestone as Thames Water Opens £5.7bn Tender Notice for Nationally Critical Reservoir

Thames Water has announced a £5.7 billion tender for the construction of the White Horse Reservoir in Oxfordshire, a key project among nine new reservoirs in the UK aimed at enhancing water resilience. This reservoir will supply water to 15 million people across the Southeast and create approximately 1,800 jobs during construction. It will also serve as a new leisure and tourism destination, featuring recreational lakes and visitor facilities. The project supports the government's agenda for 1.5 million new homes and aims to ensure long-term water security amid climate change challenges.

Flocean Selected as Winner of World Economic Forum Water Resilience Challenge

Flocean has won the World Economic Forum's Water Resilience Challenge, recognizing its innovative approach to enhancing water resilience. Selected from a record number of applications, Flocean aims to address the global freshwater crisis, which is exacerbated by rising water use, aging infrastructure, and inefficient practices. The company focuses on making coastal desalination more efficient, using 50% less energy and 90% less land without producing toxic brine. Partnering with Xylem and supported by various investors, Flocean will work alongside nine other startups to tackle different aspects of water challenges globally.

Veolia Strengthens Water Security in Northern Jordan

Jordan's Ministry of Water and Irrigation has signed a four-year, performance-based contract appointing Veolia to manage Yarmouk Water Company, with implementation starting in early April. The renewable agreement covers water and wastewater services across northern Jordan and aims to improve service reliability, operational efficiency, and institutional performance. It also supports national priorities, aligning with Jordan's National Water Strategy 2023–2040 and the Economic Modernization Vision. Veolia will handle operations, maintenance, and internal systems across a service area of nearly 30,000 km², serving roughly three million people in the region.

Global Water Events

WateReuse Symposium 2026

Date: From 8 to 11 March 2026
Location: Los Angeles, California

Annual WateReuse Symposium is the premier conference on water recycling, attracting water professionals & water reuse practitioners globally for knowledge-sharing, networking, and collaboration.

The Symposium is the most comprehensive water recycling learning opportunity available, covering policy, technology, operations, and communications for applications that range from irrigation and potable reuse to onsite and industrial systems.

Website: watereuse.org

The Pump Industry Awards 2026

Date: 19th March 2026
Location: The Hilton at St. George's Park, Burton upon Trent

The Pump Industry Awards is now recognised as one of the leading award ceremonies within the industrial arena.

Founded by the BPMA in 2000, the awards programme celebrates the achievements of pump companies and individuals who strive to go the extra mile.

Website: pumpindustryawards.com

Smart Water Systems

Date: 13 & 14 April 2026
Location: London, United Kingdom

The Annual Smart Water Systems conference is designed as a high-level forum to facilitate strategic dialogue and collaboration among water utility companies, solution providers, government authorities, & investment professionals.

The primary goal is to examine cutting-edge technologies, explore the latest industry trends, and share best practices to advance the UK and European smart water market.

Website: smgconferences.com

Global Water Summit

Date: From 18 to 20 May 2026

Location: Madrid, Spain

Climate extremes, rising energy demands, and pressures on capital mean the systems we rely on must adapt quickly. New technologies and AI will tackle such challenges, even as they place new demands on water. How do we strike a balance? This year's Global Water Summit is about turning that question into action.

Website: watermeetsmoney.com

GLOBAL WATER SUMMIT 2026

WATERTECH CHINA

Date: From 9 to 11 June 2026

Location: Shanghai National Exhibition & Convention Center

WATERTECH CHINA 2026 is a premier water industry event, recognized as a significant "industry benchmark." Building on the achievements of its previous edition, the event will take place from June 9 to June 11, 2026, at the renowned National Exhibition and Convention Center (NECC) in Shanghai.

Website: watertechsh.com

8th Annual International Conference and Exhibition Desalination Latin America

Date: 17 & 18 June 2026

Location: Santiago, Chile

The international investment conference and exhibition "Desalination Latin America" is the only business platform for developing effective strategies, sharing experiences, presenting new investment projects & innovations, and consolidating efforts of governments and businesses to implement desalination projects & to increase water supplies all over Latin America.

Website: desalinationlatinamerica.com

DESALINATION LATIN AMERICA

Indo Water 2026 Expo & Forum

Date: From 11 to 13 August 2026

Location: JIExpo Kemayoran, Jakarta, Indonesia

Join at Indo Water 2026 Expo & Forum, the Indonesia's No. 1 International Water and Wastewater Technology Event. Through exhibitions, conferences, seminars, and workshops, connect industry leaders, innovators, and professionals to showcase the latest technologies & solutions in water resource management, sewerage, industrial wastewater, purification, and irrigation.

Website: indowater.com

Aquatech Mexico

Date: From 1 to 3 September 2026

Location: Centro Banamex ,Av. del Conscripto 311, Mexico City

On 1st to 3rd September 2026, Aquatech Mexico will take place. You're invited to join other professionals, experts and investors interested in doing business in the water technology industries in the Americas. Join 3 action-packed days that provide the ideal platform to make profitable business relationships, exchange ideas and learn all about opportunities in this specific region for the water technology.

Website: aquatechtrade.com/mexico

WEFTEC 2026

Date: From 28 to 30 September 2026

Location: Ernest N. Morial Convention Center | New Orleans, La. USA

Solving water challenges takes more than great ideas, it takes connection, collaboration, and action. At WEFTEC 2026, you'll find all three through cutting edge solutions, hands on learning experiences, and a global network of water professionals.

Website: weftec.org

FiltXPO 2026

Date: 28 & 29 October 2026

Location: Minneapolis Convention Center, Minneapolis , Minnesota

Grow your business by connecting with decision-makers across diverse industries who are actively sourcing advanced filtration and separation solutions.

Engage with 1,200+ filtration professionals from around the world. Expand your North American market reach.

Generate leads across high impact sectors, including: Water and Wastewater Treatment, Power Generation, Oil & Gas.

Website: filtxpo.com

Aquatech China

Date: From 28 to 30 October 2026

Location: 2345 Long Yang Road Pudong New Area 201204, China

China is making monumental investments in this sector, recognizing the critical need to address water shortages in its cities. With a mandate for cities to reclaim 25% of used water, the commitment is clear. This drive is further evidenced by the planned construction of 100 new sewage treatment plants.

Website: aquatechtrade.com/shanghai

Aquatech Asia

Date: From 25 to 27 November 2026

Location: Queen Sirikit National Convention Center, Bangkok

The most recent addition to the well-known Aquatech portfolio is Aquatech Asia, which will be present at flagship trade shows in China, Mexico, and Amsterdam. Southeast Asian water experts, innovators, and decision-makers will come together at Aquatech Asia.

Website: aquatechtrade.com/asia

Water as the Cornerstone of Our Future: The Vital Role of Water Quality in Shaping Tomorrow

In the summer of 2025, the TEDxFolsom stage offered an opportunity to reflect on the future and the forces shaping it. What may appear to be a personal speaking engagement ultimately became a platform to address a much broader issue: the future of humanity and the critical role of water quality.

Although the TEDx stage may seem far removed from the daily operations of the water treatment industry, the message delivered there is closely connected. The future of communities, public health, and sustainability is directly influenced by the work carried out every day across the water sector.

From Inspiration to Impact

The journey toward the TEDx stage began years earlier with inspiration drawn from a TEDxNaperville event. That experience highlighted the power of ideas and their ability to drive real-world change. After multiple applications and years of preparation, participation in TEDxFolsom became a reality. Acceptance into TEDx events is highly competitive.

National and international TED events typically accept less than 1 percent of applicants, while local TEDx events accept approximately 5 percent. This rigorous process underscores the importance of perseverance and clarity of message. However, the core of this story is not individual achievement. It is about the ideas shared on that stage and why they matter to the water treatment industry.

Expanding Perspectives

TEDxFolsom brought together community leaders, professionals, and innovators from across Folsom and Sacramento. As the program began, each speaker contributed a uniqueperspective on the challenges shaping the future. The experience highlighted how interconnected global issues, such as technology, consumption, health, and sustainability, have a direct impact on water resources and water quality.

The Hidden Cost of Convenience

One presentation revealed that the world currently has enough clothing to dress the next six generations. Massive piles of discarded garments are visible from space in Chile's Atacama Desert. The fashion industry alone extracts the equivalent of 2 percent of Lake Michigan's total water volume every year and releases microplastics into waterways at a scale comparable to twice the weight of Chicago's Willis Tower.

This is not solely an environmental concern. It is a water quality issue. Industries that prioritize speed and convenience often overlook long-term consequences.

Water treatment professionals play a critical role in mitigating this damage by providing filtration, purification, & remediation solutions

Automation and Human Factor

Another TEDxFolsom speaker referenced a 2025 study by Microsoft and Carnegie Mellon, which found that heavy reliance on artificial intelligence can reduce critical thinking skills over time. While AI improves efficiency, overdependence can lead to complacency.

This finding has direct implications for the water treatment industry. Automation and AI are increasingly integrated into monitoring, diagnostics, & system management. However, human expertise remains essential.

Judgment, experience, and accountability cannot be replaced by algorithms. The industry's future depends on continuous learning, critical thinking, and maintaining the high standards that have defined professional water treatment for decades.

Smart Technology in Everyday Life

Technology is rapidly transforming daily life. Predictive healthcare, smart homes, and automated systems are becoming standard. Water systems are no exception. Smart water treatment solutions now allow real-time monitoring of water quality and system performance.

These technologies enable proactive responses rather than reactive fixes. For water professionals, this represents an opportunity to lead

offering solutions that enhance public health and empower households to take control of their water quality.

A National Call to Action

The White House released the Make America Healthy Again report, outlining more than 120 strategies to reduce chronic disease in children. Among the primary concerns identified were poor diet and chemical exposure, including contaminants in drinking water.

At the same time, the Centers for Disease Control and Prevention (CDC) is updating guidance on children's exposure to PFAS and microplastics. These developments represent a pivotal moment for the water industry and reinforce a long-standing truth: safe, high-quality water is foundational to public health.

Organizations such as the Water Quality Association (WQA) continue to emphasize the importance of proactive water treatment solutions that protect families and communities.

The Data Center Dilemma

Rapid growth in data centers presents another emerging challenge. Many U.S. states, including those in the Great Lakes region, have passed tax incentives to attract these facilities without fully accounting for local water availability.

Data centers are projected to increase global water usage elevenfold by 2028. AI-related water consumption now rivals that of the entire state of California surpassing Illinois and growing faster than any sector outside agriculture. This trend underscores the urgent need for localized, efficient water treatment and management strategies.

As demand increases, expertise within the water industry becomes even more critical.

Funding Challenges & Industry Opportunities

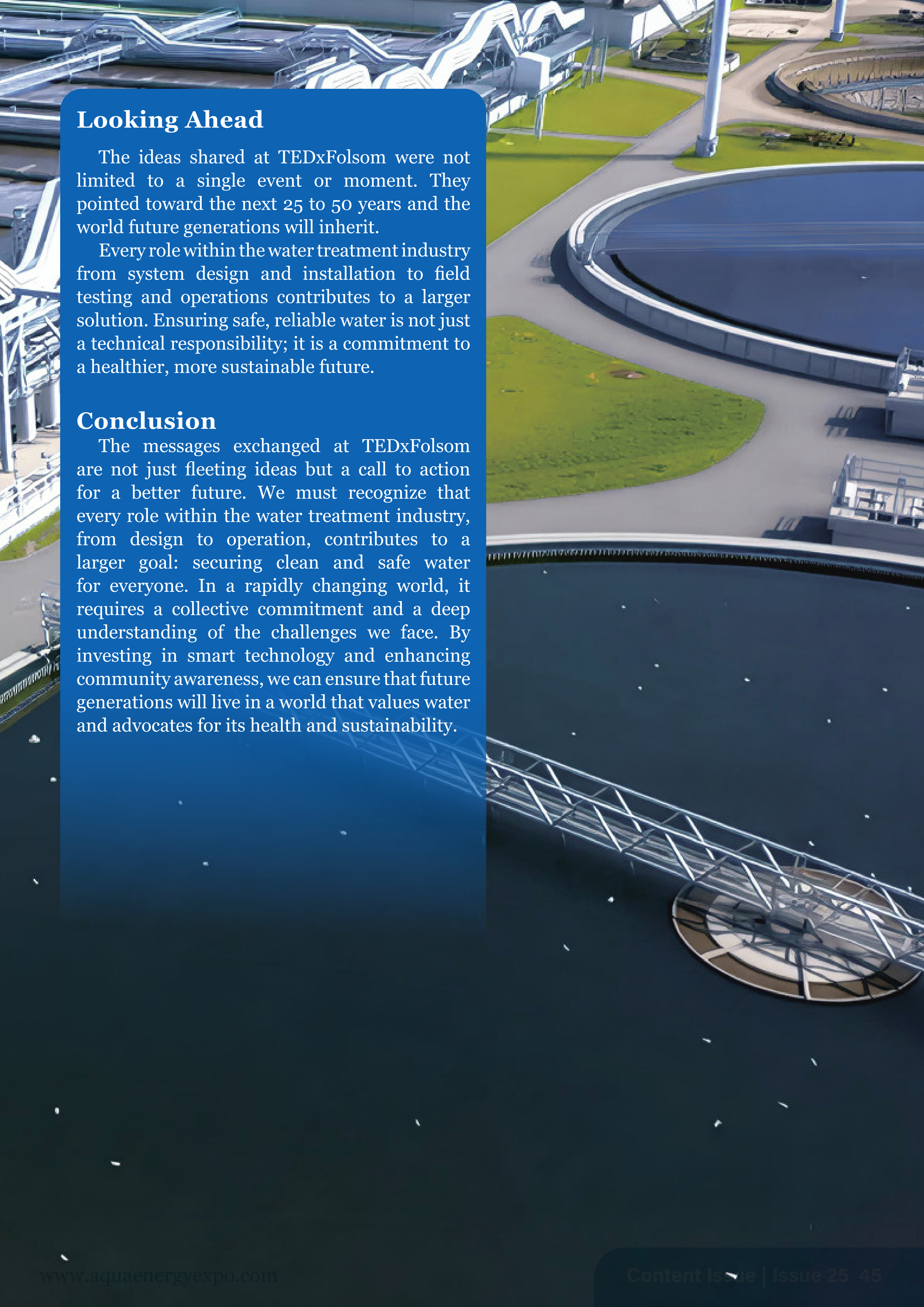
Federal funding for water infrastructure is approaching a projected "funding cliff." However, new opportunities are emerging. Several legislative proposals are being consolidated under the ROAD to Housing Act, aimed at stimulating housing development with bipartisan support.

These policy developments have significant implications for water treatment professionals. The Water Quality Association continues to monitor legislative activity and advocate for policies that support sustainable water infrastructure. Efforts are also underway to strengthen government affairs engagement to ensure the industry's voice is represented.

Key Takeaways for the Water Industry

The current landscape presents both challenges and opportunities:

- Staying informed is essential as technology and regulations evolve rapidly.
- Educating customers about water quality risks builds trust and awareness.
- Investing in smart water technologies supports proactive system management.
- Industry engagement at local, state, and national levels strengthens advocacy efforts.
- Professional pride remains vital water treatment work directly supports public health and sustainability.



Looking Ahead

The ideas shared at TEDxFolsom were not limited to a single event or moment. They pointed toward the next 25 to 50 years and the world future generations will inherit.

Every role within the water treatment industry from system design and installation to field testing and operations contributes to a larger solution. Ensuring safe, reliable water is not just a technical responsibility; it is a commitment to a healthier, more sustainable future.

Conclusion

The messages exchanged at TEDxFolsom are not just fleeting ideas but a call to action for a better future. We must recognize that every role within the water treatment industry, from design to operation, contributes to a larger goal: securing clean and safe water for everyone. In a rapidly changing world, it requires a collective commitment and a deep understanding of the challenges we face. By investing in smart technology and enhancing community awareness, we can ensure that future generations will live in a world that values water and advocates for its health and sustainability.

Next-Generation Water Utilities: How GenAI and AgenticAI Are Driving Smarter, Resilient, and Sustainable Operations

The global water sector is under growing pressure from ageing infrastructure, climate change, rapid urbanisation, and rising customer expectations. Traditional operating models are no longer sufficient. Utilities must adopt intelligent, data-driven approaches to ensure reliability, efficiency, and long-term sustainability in an increasingly complex operating environment.

The Rise of a New Intelligence in Water

Generative AI (GenAI) & AgenticAI represent a new generation of digital intelligence for water utilities. GenAI transforms vast volumes of operational data into clear insights, summaries, and recommendations. AgenticAI goes further by enabling systems to act autonomously, optimising processes and supporting faster, smarter decision-making across operations.

Turning Complex Data into Clear Decisions

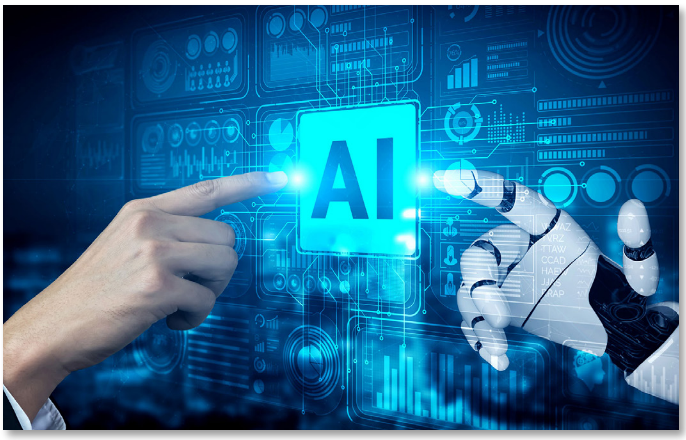
Water utilities manage data from SCADA systems, sensors, customer platforms, and asset databases. Yet much of this data remains underused. GenAI interprets and connects these data streams, while AgenticAI translates insights into actions. Together, they help utilities move from information overload to focused, confident, and timely decisions.

Redefining Efficiency and Daily Operations

Routine tasks such as reporting, compliance documentation, and internal communication consume significant staff time. GenAI automates these processes, allowing teams to focus on higher-value work. Meanwhile, AgenticAI adjusts operational parameters, schedules maintenance, and responds to events in real time, improving efficiency and reducing operational strain.

A Digital Copilot for the Workforce

Rather than replacing people, AI enhances human capabilities. GenAI captures institutional knowledge, accelerates training, and supports staff with instant guidance. AgenticAI helps coordinate workflows and prioritise actions. Together, they act as digital copilots, empowering operators, engineers, planners, and executives to work more effectively and confidently.



Creating Smarter and More Proactive Customer Services

Customer expectations for transparency and responsiveness continue to rise. GenAI enables personalised, conversational customer engagement, while AgenticAI proactively detects anomalies, issues alerts, and manages service requests. This reduces pressure on call centres, improves customer satisfaction, and supports water conservation through faster issue resolution.

From Reactive Maintenance to Strategic Asset Planning

Managing ageing infrastructure requires smarter investment decisions. GenAI synthesises asset condition data, inspection reports, and spatial information to create planning scenarios. AgenticAI evaluates risks, prioritises interventions, and optimises capital allocation. This shift enables utilities to move from reactive maintenance to long-term, risk-based asset strategies.

Optimising Water Quality and Treatment Performance

Maintaining water quality demands constant monitoring and rapid response. GenAI generates insights, compliance reports, and performance summaries, while AgenticAI dynamically adjusts treatment processes. This leads to improved water quality, reduced chemical and energy use, and stronger regulatory compliance, all while lowering operational costs.

Tackling Non-Revenue Water with Intelligence

Non-Revenue Water remains a major challenge for utilities worldwide. GenAI analyses consumption patterns and leak indicators, while AgenticAI automates pressure management and fault isolation. This integrated approach accelerates leak detection, reduces water losses, improves network performance, and supports sustainability and cost-efficiency goals.

Empowering Leadership with Strategic Foresight

Utility leaders must make decisions under uncertainty. GenAI condenses complex data into executive-level insights, while AgenticAI runs simulations and tests strategic scenarios. This provides early warnings, clearer trade-offs, and stronger confidence in decision-making, enabling leadership teams to plan proactively rather than reactively.

Building an Integrated Digital Water Ecosystem

The full value of GenAI and AgenticAI emerges when combined with Digital Twins and IT/OT systems such as SCADA, GIS, and ERP. Digital Twins visualise assets, GenAI interprets system behavior, and AgenticAI executes optimisation. Together, they create a continuous sense, analyse, decide, and act cycle across the utility.

Responsible Adoption for Long-Term Value

Successful AI adoption requires more than technology. Utilities must implement clear governance, transparency, and human oversight.

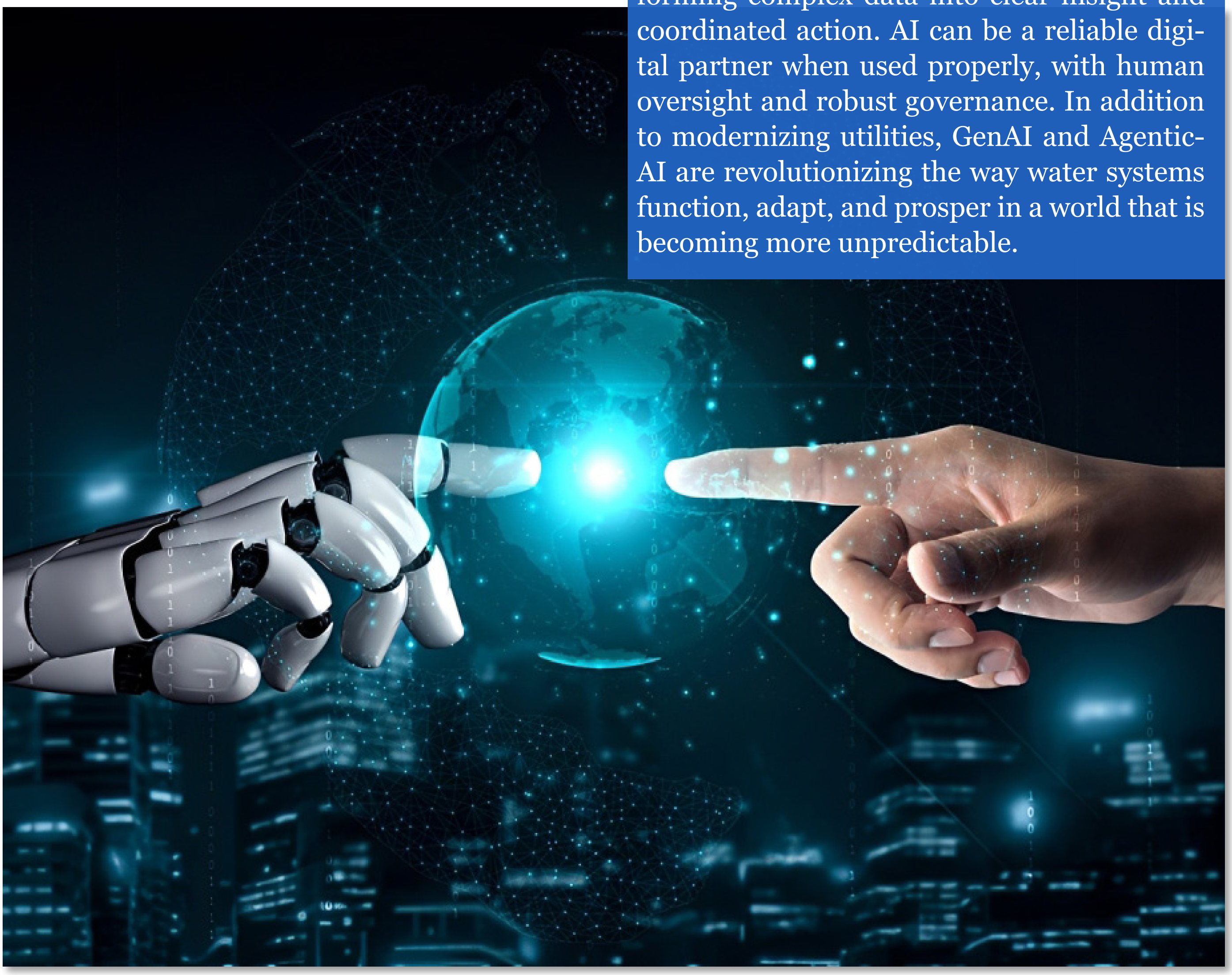
Pilot programmes, targeted training, and human-in-the-loop controls ensure AI enhances expertise rather than replacing it. Responsible adoption builds trust, delivers measurable value, and supports long-term environmental stewardship.

Shaping the Future of Digital Water

The next era of digital water is already unfolding. By embracing GenAI and AgenticAI, utilities can improve efficiency, empower their workforce, enhance customer trust, and strengthen resilience. These technologies are not just tools; they are strategic enablers, shaping a smarter, more sustainable future for water utilities worldwide.

Conclusion

Water utilities must transform; it is no longer an option. GenAI and AgenticAI offer the intelligence required to transition from reactive operations to proactive, resilient management as infrastructure ages and environmental stresses increase. These technologies boost asset performance, increase customer engagement, promote sustainable resource use, & increase efficiency by transforming complex data into clear insight and coordinated action. AI can be a reliable digital partner when used properly, with human oversight and robust governance. In addition to modernizing utilities, GenAI and AgenticAI are revolutionizing the way water systems function, adapt, and prosper in a world that is becoming more unpredictable.



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Transforming Water Management: The Power of Digital Models in the Water Sector

Digitalization can affect practically every process that a utility uses. Planning, monitoring, and management tasks, especially, are often already partly or fully digitalized. There is a range of opportunities, as diverse as the technologies on the market. Today, it is relatively simple to connect fire hydrants to the utility's cloud or to minimize leakage loss by using AI models. Given the challenges awaiting the water sector in the coming decades, the speed and effectiveness of digital transformation are important topics.

The Limitations and Possibilities of Digitalization

Not all processes can be fully digitalized, of course. However, with advanced technologies such as digital twins, water utilities can get very close to achieving this goal. A key requirement for this progress is the availability of accurate and up-to-date data.

IoT-enabled smart water supply networks play a crucial role in this context. Modern, connected sensors are fundamental to digitalization in the water sector, as they deliver more precise and timely data than older sensor generations, not to mention manual meter reading.

The continuous flow of remote data enables utilities to streamline many routine management tasks and business processes, and in some cases, to automate them entirely.

Enhancing Water Management with Smart Meters

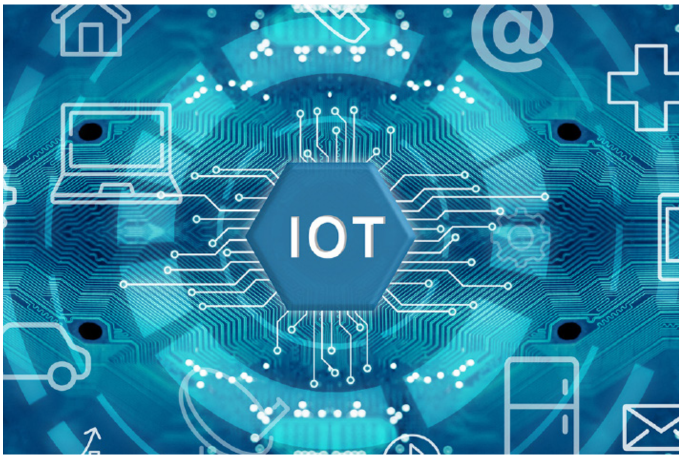
Smart water meters, for example, can detect even minimal water flows, reduce the risk of tampering, and eliminate the need for manual meter reading. As a result, suppliers gain a clearer understanding of how much water is consumed in specific areas and at particular times.

This information supports more informed decision-making and enables accurate and transparent billing.

In addition, utilities can allow customers to monitor their water consumption almost in real time. Another important benefit is early warning: if water usage suddenly increases, providers can alert customers immediately, so they do not discover the issue only through high bills or potential damage to their homes.

The Role of IoT and Communication Technologies

What enables this progress is not only the advancement of modern sensor technology, but more importantly, the rapid development of IoT. This evolution has led to highly efficient devices that can collect data for many years on a single battery charge while transmitting it through mobile networks. Another key factor accelerating this transformation is the expansion of 5G and energy-efficient communication standards such as NB-IoT and LoRaWAN. The smart city movement also plays a significant role in supporting these developments.



Leveraging Data for Predictive Analytics and AI

Predictive analytics, digital twins, and AI are central to this transformation. Digitalization relies heavily on data and produces vast volumes of information. With the help of machine learning and artificial intelligence, utilities are able to analyze and utilize this data effectively.

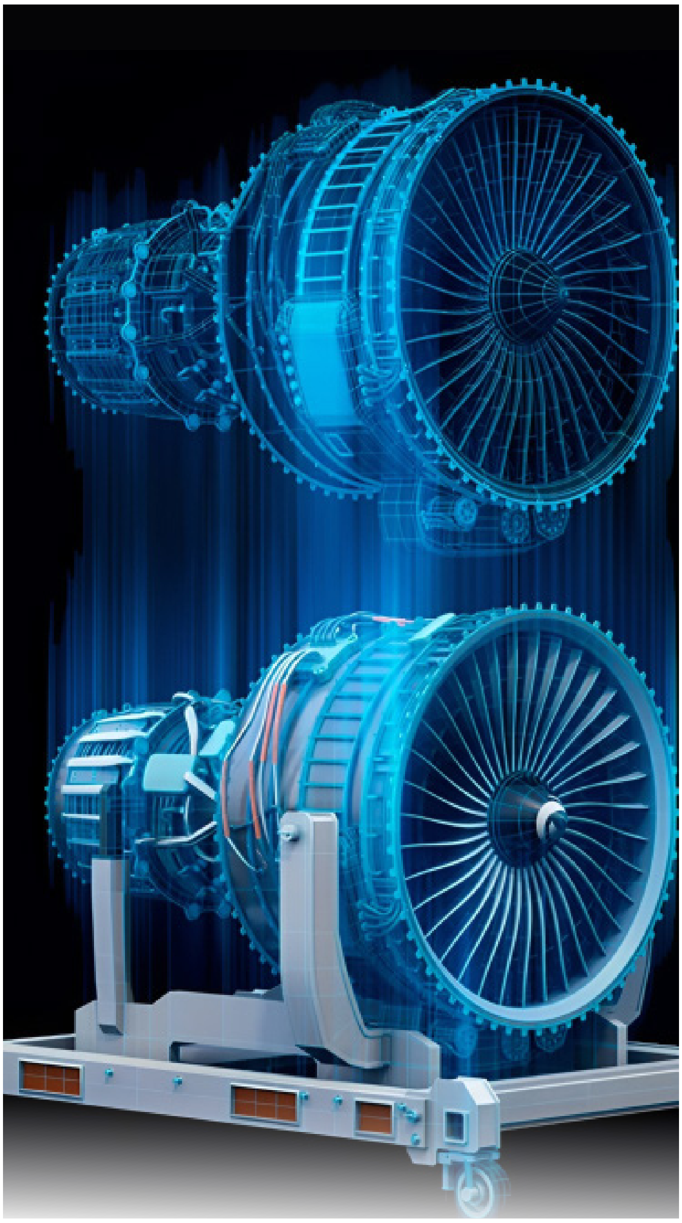
The Value of Digital Twins in Water Management

By continuously supplying machine learning models with increasing amounts of data, operators can generate more accurate and realistic simulations of systems and processes, ultimately leading to the creation of digital twins. This technology is especially valuable for managing complex and critical facilities such as water treatment plants.

Developed and trained using real-world data, digital twins closely replicate their physical counterparts, ranging from digital representations of water flows to realistic sensor behavior and simulated control systems. One of the main advantages of digital twins is their ability to produce highly reliable predictions. Moreover, they enable operators to conduct experiments that would be impossible or risky to perform in real operational environments.

Enhancing Maintenance Strategies with Digital Twins

Digital twins are also highly effective tools for staff training. Simpler versions of these models can be used to assess and predict the condition of different components within a water supply network. This capability enables operators to move beyond fixed maintenance schedules and adopt more efficient predictive maintenance strategies. The main objective is to identify potential problems before they become visible or critical. At the same time, this approach helps avoid unnecessary maintenance or expensive replacements when they are not required. For instance, such models can forecast which sections of a pipeline network are most likely to fail, as well as identify older pipes that may remain operational without replacement for many years.



New Trends in The Digitalization of Water Utilities

The water sector is currently undergoing a significant digital transformation. Digital processes & tools have become firmly integrated, whether they are used to enhance customer experience, enable highly precise maintenance, or simplify facility planning.

The adoption of IoT sensor technologies, GIS applications, mobile apps, and AI models is steadily increasing, as water utilities prepare for the future with an expanding range of smart solutions. With rapid technological progress, the next major trend in digitalization may already be emerging.

Case Studies

A Smart Water Network provides a comprehensive view of utility operations, equipping tools for rapid anomaly detection & prioritizing improvement initiatives. The concept involves integrating all components of the water distribution network into a digital model, thereby creating a digital twin.

This includes instrumentation and monitoring measures such as the implementation of an online hydraulic model, a management information system for reporting key performance indicators (KPIs), and the use of intelligent valves and pumps.

NIRAS: Advancing Water Utilities Through Smart Digital Solutions

NIRAS boasts over 20 years of proven experience in delivering digital solutions for utility companies globally. Some of the key services include:

- Hydraulically optimized network design
- Ensuring a stable water supply with an emphasis on water quality
- Efficient planning for rehabilitation and emergency management
- Energy optimization through pressure management
- Reduced leakage through enhanced water loss control
- Timely warning and notification systems
- Automated calculations and reporting of IWA Water Balance

Aquis Operation: Online Hydraulic Network Model

Aquis provides online (real-time) hydraulic and operational information on the status of the water supply network. This includes flow, pressure, water quality, & leakage-related data.

Our technical consultancy services cover the following scope of works: System architecture and design; Interface development to existing operational systems; Configuration of an online hydraulic model; Capacity building; System maintenance; System development.

HOMIS: A Comprehensive Management Information System for Enhancing Utility Network Performance

HOMIS is a Holistic Management Information System developed by NIRAS. The system is capable of collecting and analysing data from all data sources in a utility network: Aquis, GIS, CIS, SCADA, Asset Management, Finance, etc.

The collected data is translated into valuable performance indicators and key figures by HOMIS, which enables utility companies to strategically target their daily maintenance work and improvement initiatives.

By collecting data from sources such as GIS, SCADA, noise loggers, hydraulic models, and water samples, it is possible to monitor the condition of the utility's distribution network to identify and prioritise areas with potential for improvement.

REHAB-IT: Strategy Tool for Sustainable Pipe Rehabilitation

REHAB-IT is a tool that helps to maintain an optimized strategy for pipe rehabilitation so that it is streamlined and uniform year after year.

REHAB-IT optimizes and specifies the most profitable and economically optimal time period for replacement of pipelines, given the specific conditions as defined by the water utility. The tool is used for both water and wastewater networks.

It helps prioritize and compare pipelines, and based on a scoring system, the tool proposes a renovation plan for your pipelines with a duration of 5, 10, or 20 years. It also specifies the best year for timely rehabilitation for every unique pipeline on the basis of your strategy. REHAB-IT is assisting in determining renovation plans by combining data input from existing knowledge about the pipeline network. This can be, for example, operational or condition reports, the strategic renovation plan chosen by the utility company, and other data about the pipeline network.

Conclusion

Digital models are significantly impacting the water sector by providing advanced network management tools. These models, including digital twins, enable utilities to create accurate simulations of their systems, enhancing performance monitoring and predictive maintenance. By leveraging real-time data from IoT-enabled sensors, utilities can streamline operations, reduce leaks, and improve decision-making. Digital models support effective maintenance strategies and enable rapid response to deviations, leading to improved service quality and customer satisfaction.

Innovative Water Management: Transforming Challenges into Opportunities

Water management is a critical issue facing modern cities, as communities heavily rely on effective water systems to ensure the supply of clean water, treat wastewater, and manage stormwater. However, many of these systems suffer from aging infrastructure that urgently needs upgrading. In this context, the importance of utilizing advanced technologies such as artificial intelligence and data analytics emerges to enhance water asset management.

By providing innovative solutions, cities can improve the efficiency of their water systems, reduce losses, and ensure the sustainability of water resources for future generations.

Water Asset Management: Costly, Complex and Critical

Cities across the country rely on three critical water systems to function properly:

• Stormwater networks that control runoff to manage flooding and reduce pollution in waterways

• Wastewater systems that collect, transport, and treat sewage

• Drinking water infrastructure that purifies and distributes clean water to homes, businesses, and industries

Aging Infrastructure: Smarter Solutions are Needed

As aging infrastructure continues to fail at an increasing rate, cities require smarter solutions. A significant portion of the water system in the U.S. was built shortly after World War II, with an anticipated lifespan of approximately 75 years, meaning that much of the system is now well beyond its intended life. This raises questions about the widespread failures occurring within it. The nature of water loss encourages a reactive approach among both city officials and citizens.

Local government representatives generally agree that asset management, defined as the comprehensive process of creating, maintaining, and updating a community infrastructure, presents a challenging task.

CivilSense™: Making The Invisible Visible

Formidable obstacles stand in the way of solving the problem of aging infrastructure. To begin with, it's underground, hidden from easy observation and repair. When a bridge gets knocked down by a container ship or a cathedral burns out of control, the problem is readily seen and the solution obvious. But water loss is often impossible to see until the extensive damage is exposed by flooding in the streets, or the water is shut off throughout entire neighborhoods.

A small puddle on the surface may be hundreds of feet from the actual source of the underground leak. What's more, the size of the puddle tells you nothing about the size of the break. Until recently, the primary response has been with a shovel or backhoe and hours of digging.

Transforming Water Asset Management: The Role of CivilSense™ in Sustainable Solutions

However, CivilSense™ makes sustainable water asset management efficient and effective by making the invisible visible. Using a data-driven approach to sustainable water asset management that leverages cutting-edge technologies backed by more than 60 years of expertise & experience, city managers and water utility leaders now have a choice that pushes asset management far beyond the options that existed even as recently as last year. New tools are available to diagnose and prioritize repair and maintenance budgets, which are only getting tighter.

Real-time success stories illustrate that trusted expertise from Oldcastle Infrastructure's team results in a near-immediate return on investment. Investing in smarter water management today isn't just necessary; it's an economic imperative. With $625 billion needed over the next 20 years, solutions like CivilSense offer a way forward, delivering cost-effective, proactive asset management before crises strike.

Embracing AI and Quantum Technology: Revolutionizing Water Management in 2025

The year 2025 has been designated the International Year of Quantum Science and Technology, highlighting the expanding role of computing and artificial intelligence (AI) in addressing some of the world's most pressing challenges. One of the most urgent issues? Water. According to the World Economic Forum, 50% of the world's freshwater resources are already significantly degraded due to factors such as population growth, inadequate planning and land use, and climate-related challenges. In response to this global threat, the water sector is adopting cutting-edge technologies. Increasingly, water operators are utilizing digital platforms that integrate AI and operational intelligence systems to enhance the management of water systems.

These advanced solutions analyze vast amounts of data from IoT sensors, SCADA, and GIS systems to detect leaks, anticipate problems, and improve overall performance and reliability. The outcomes are transformative. AI-driven tools are generating significant savings in water, energy, and costs while facilitating real-time, data driven decision-making that enhances resilience and ensures water security for all.

Key AI Trends for the Water Sector

In a recently published report, Water Technology Trends 2025 Revolutionizing Water Management with the Power of Digital Technology, Xylem Vue identifies five areas where AI can be applied to transform water management worldwide. 2025 AI trends for water include:

• Dynamic treatment plant operations AI will continue to revolutionize treatment plants through systems that adjust processes in real time, including reagent dosing and treatment train control. This will improve operational resilience to extreme events and streamline energy resource use.

• Demand forecasting Advanced AI algorithms will play a key role in accurately anticipating consumption peaks. By integrating resource management platforms, operators can accurately predict and respond to user behaviors and weather events. Utilities who can make automatic adjustments in water distribution and storage can reduce waste.

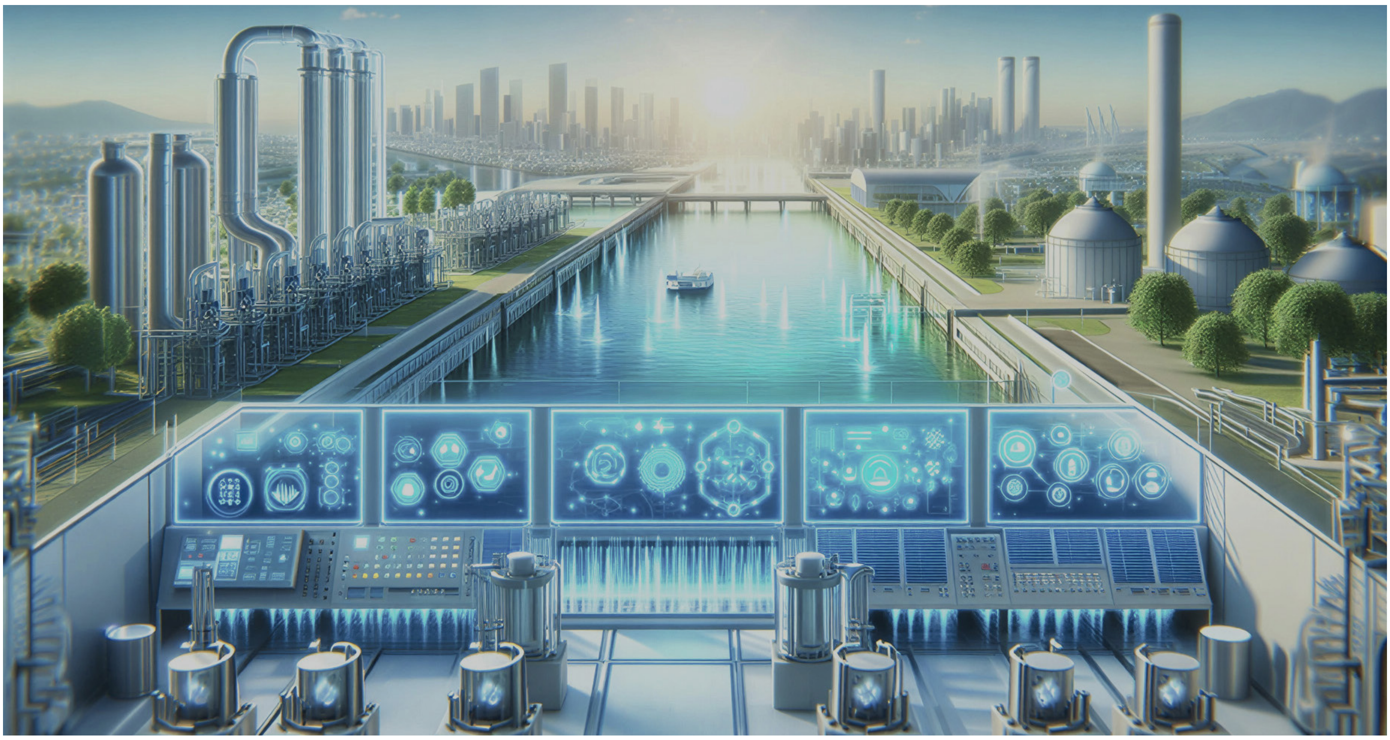
• Energy optimization AI can optimize energy consumption in pumping stations and treatment plants through predictive models that adjust operations according to demand.

These solutions, which have already cut energy consumption by 25%, will become even more efficient with the integration of real-time climate and consumption data.

• Early problem detection As AI systems become more advanced, they'll be able to spot leaks, fraud, and operational issues earlier. This means lower maintenance costs and greater resilience for operators and for consumers, it opens the door to real-time alerts about water challenges in their communities, helping everyone stay informed and conserve more effectively.

• Wastewater treatment optimization AI will continue to transform wastewater treatment. Digital twins will become more sophisticated, simulating complex scenarios to anticipate problems before they occur.

Predictive systems will help operators adapt to evolving environmental standards. These advancements will allow operators to simulate variations in water quality and identify new solutions to water challenges.



Case Study

• AI in Action: Yorkshire Water Services Cut Visible Leaks by 57%

Yorkshire Water Services was looking to cut water leakage and improve operations at its Sheffield, UK, site. As part of its trailblazing Hadfield Smart Water Network project, the utility partnered with Xylem to implement the Xylem Vue integrated software and analytics platform. The platform integrates data from multiple smart sensors and systems regardless of manufacturer and presents it in a single solution.

By harnessing the power of machine learning and artificial intelligence, the innovative solution optimized water network management across multiple fronts, from monitoring water losses to community engagement and customer service.

The project cut visible leaks by 57% and reduced leakage in high-priority district metered areas by 32%. Additionally, the utility has reduced main repairs by 30% on an annual basis from what was previously required. The Sheffield pilot program won the 2023 Smart Water Networks Award at the Water Industry Awards.

• AI in Action: SADM Realizes Water Savings up to 37% in Key Pipeline Sections

In Mexico, the state of Nuevo León has grappled with severe drought conditions in recent years. Servicios de Agua y Drenaje de Monterrey, I.P.D. (SADM), a water utility serving an urban area of more than five million people, was looking for proven technology to help it address water scarcity challenges.

SADM implemented Xylem Vue with Leak Detection and Unified Network Management. The solution enables SADM to conduct smart monitoring and management of water pressure, flow and consumption, and integrates data to help identify potential anomalies that point to visible and hidden leaks.

As a result of this project, SADM has realized overall water savings of 17% – and up to 37% in certain key sections of pipeline.

Conclusion

Given the increasing challenges related to water, investing in modern technology is not just an option but a necessity. Solutions like CivilSense™ allow for the use of data and analytics to improve visibility of hidden assets, leading to informed decision-making in water management. Moreover, integrating artificial intelligence into water management operations offers opportunities to enhance efficiency and reduce costs. With an urgent need for $625 billion in investment over the next two decades, cities must embrace these innovations to ensure the sustainability and reliability of water systems, ultimately contributing to water security & improving the quality of life for citizens.

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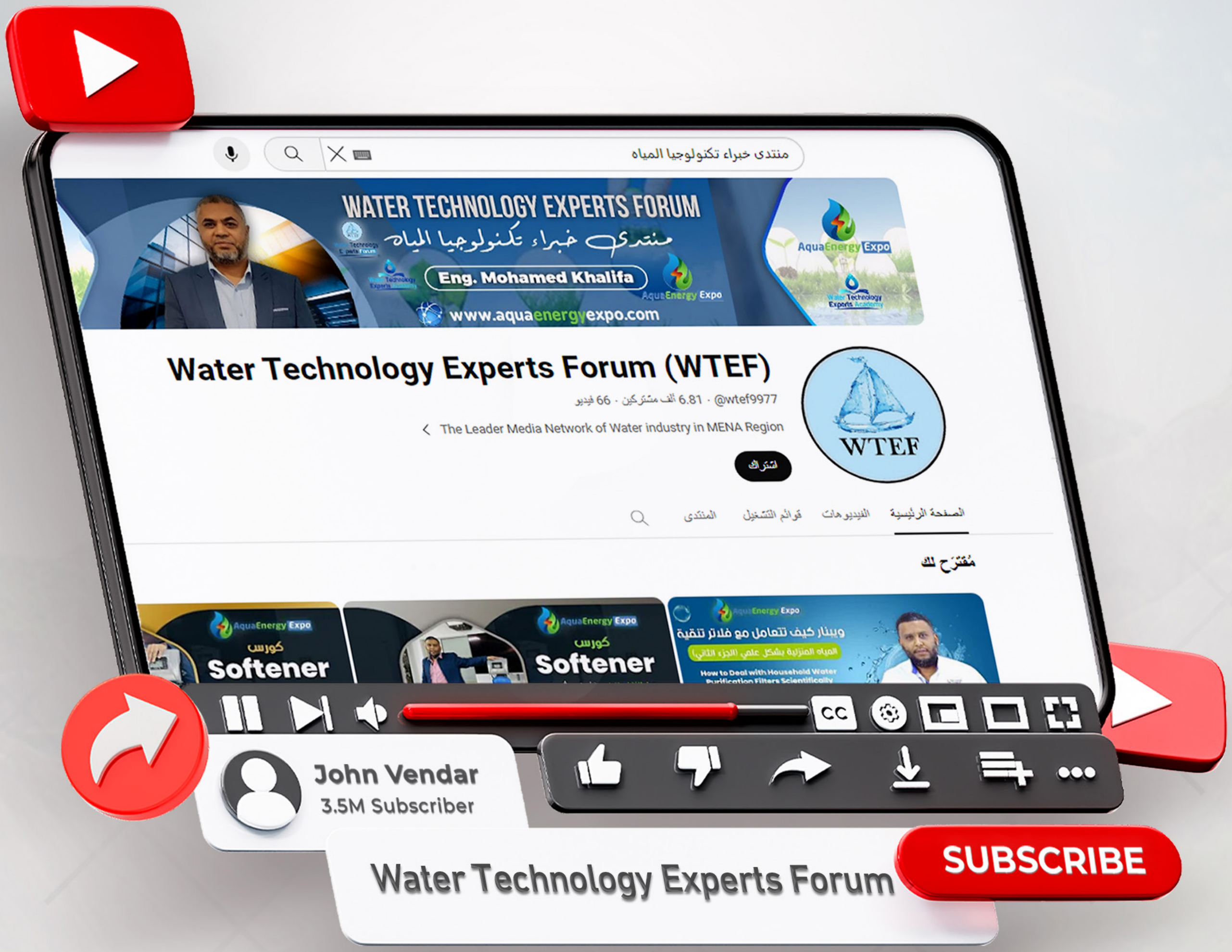

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How Digital Twins Are Shaping the Digital Transformation of the Water Sector

The global water sector is facing increasing pressure due to aging infrastructure, workforce shortages, and rising demand for safe and affordable water. Traditional management approaches are no longer sufficient to handle this complexity. Digital transformation has become a strategic necessity, enabling utilities to enhance efficiency, improve resilience, and deliver higher-quality services in an increasingly challenging environment.

Challenges Facing Water Utilities Today

Operational, Environmental, and Regulatory Pressures

Water utilities face a wide range of challenges, including reducing nonrevenue water, lowering energy consumption, complying with strict regulations, and preparing for climate-driven extreme events. At the same time, data is often scattered across multiple disconnected systems, making it difficult for utilities to gain a clear, real-time understanding of network performance.

The Data-to-Decision Gap

Why Traditional Systems Are No Longer Enough

With the rapid growth of IIoT, sensors, and SCADA systems, utilities generate massive volumes of operational data. However, this data is often siloed, requiring significant time and effort to extract meaningful insights. Without an integrated view of assets and operations, utilities struggle to transform raw data into actionable intelligence that supports timely and informed decision-making.

Digital Twins: The Smart Solution for Transformation

What Is a Digital Twin in the Water Sector?

A digital twin is a dynamic virtual representation of a water system that mirrors real-world conditions in real time. It integrates hydraulic models with asset data and operational technologies such as SCADA, GIS, and IIoT.

This unified model enables utilities to monitor performance, analyze historical trends, and accurately predict future scenarios.

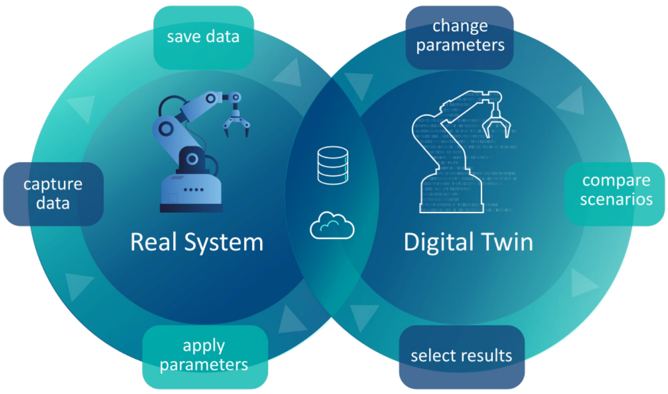
A Connected Digital Environment for Smarter Water Management

Digital twins unify engineering and operational data within a single, connected environment. This approach allows utilities to detect leaks and failures earlier, reduce response times, and optimize day-to-day operations. By leveraging advanced analytics and artificial intelligence, teams can move beyond reactive management and adopt a more proactive, data-driven operating model.

The Operational Value of Digital Twins

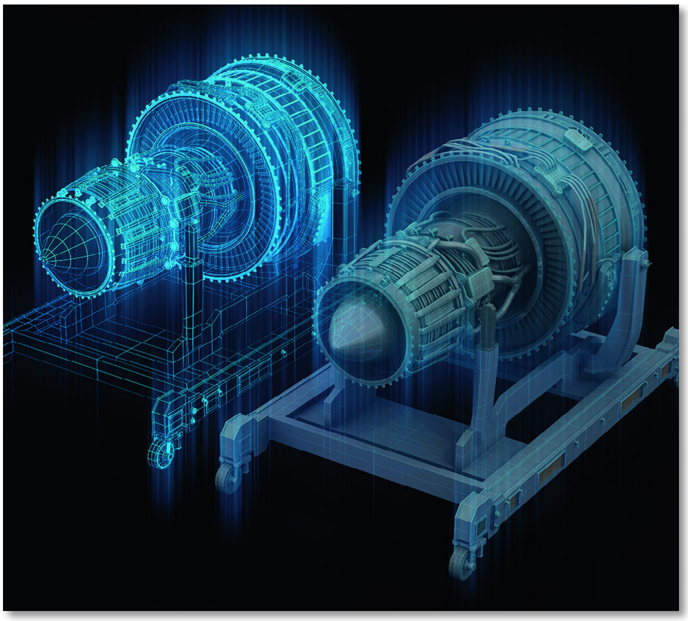
Improving Performance and Reducing Costs

Digital twins deliver immediate operational value by helping utilities reduce water losses, optimize energy use, and improve asset performance. Real-time visibility enables faster intervention and fewer unplanned outages, while predictive insights support smarter maintenance strategies. Together, these benefits contribute to lower operational and capital expenditures.



Digital Twins Across the Asset Lifecycle

The value of digital twins extends across the entire asset lifecycle. From strategic planning and capital investment to operations and maintenance, utilities can simulate "what-if" scenarios, assess risks, and evaluate the impact of decisions before implementation.



This capability minimizes investment risk and supports long-term infrastructure sustainability.

Why Utilities Must Invest in Digital Twins Now

Infrastructure decisions made today will affect communities for decades. Investing in digital twins enables utilities to build more resilient networks, improve financial performance, and respond effectively to operational disruptions. Digital transformation is no longer a future ambition it is a critical step toward sustainable and reliable water services.

Key Requirements for Successful Digital Transformation

• A Clear Strategic Vision

Defining short & long-term objectives ensures that digital initiatives focus on high-impact use cases aligned with business priorities.

• Understanding Internal and External Resources

Assessing internal capabilities & determining when to leverage cloud-based solutions or external expertise is essential for long-term success.

• Flexible Digital Solutions

Effective platforms must allow customizable dashboards, new performance indicators, and advanced analytics to adapt to evolving operational needs.

• Scalability

Successful digital solutions enable utilities to start small, validate results, and scale seamlessly without technical limitations.

• Alignment with Utility-Specific Strategies

Every utility follows a unique digital journey. Scalable and adaptable solutions ensure alignment with organizational goals and digital maturity levels.

Success Stories

• DC Water
- Strengthening Operational and Financial Resilience

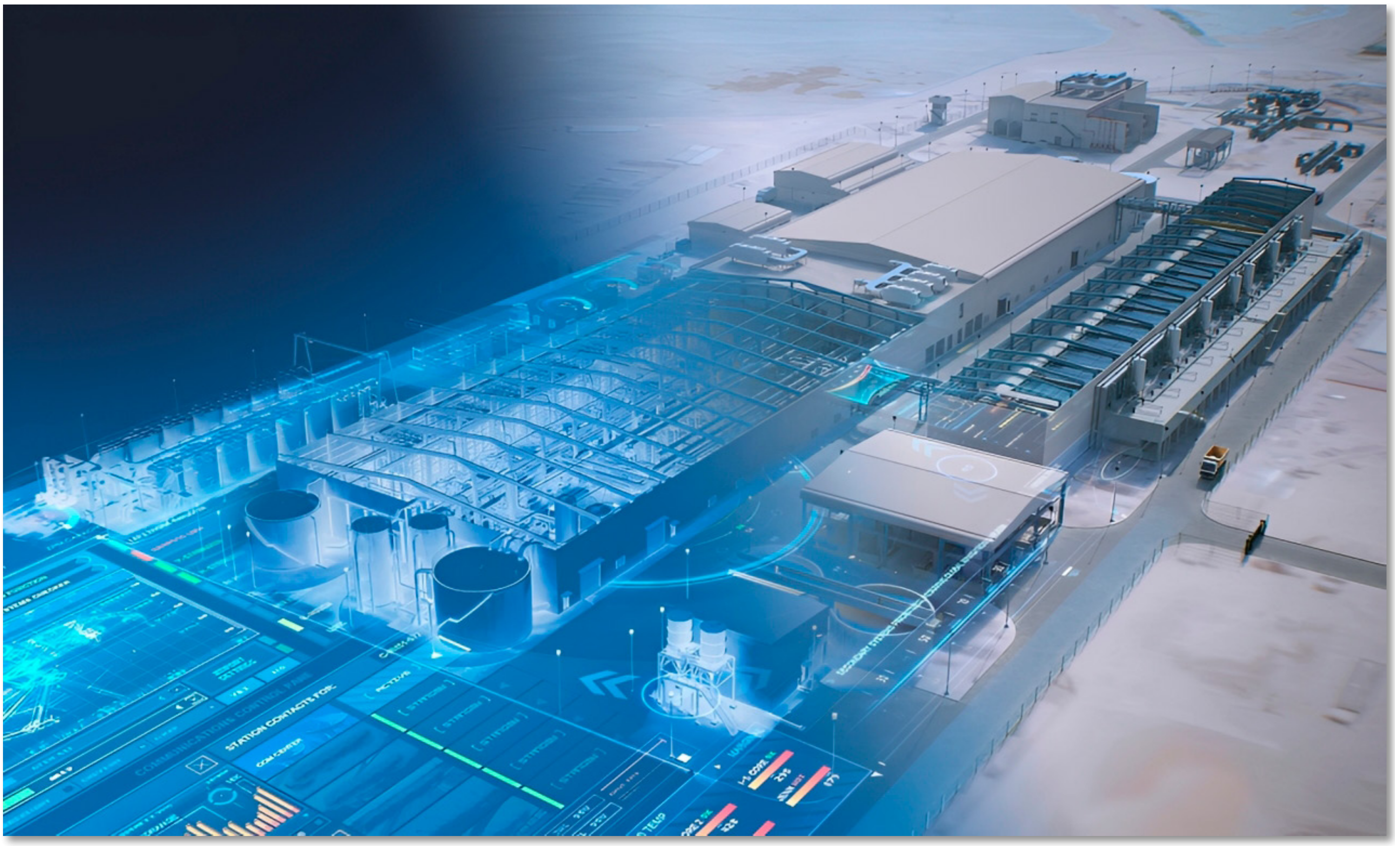
DC Water implemented a water infrastructure digital twin to gain real-time visibility into system performance, simulate network events, and reduce nonrevenue water and operating costs. This approach improved emergency response, optimized investments, and enhanced overall service reliability for customers.

• AEGEA – Brazil
- Smart Network Management in Complex Environments

In Manaus, AEGEA deployed digital twin technology to address geographic challenges and improve leak detection. By integrating operational and engineering data into a single platform, teams enhanced predictive maintenance, optimized daily workflows, and significantly reduced response times to network events.

Conclusion
Digital Twins as the Engine of the Water Sector's Future

Digital twins represent a transformative shift in how water utilities manage infrastructure and services. By combining real-time visibility, predictive intelligence, and strategic planning capabilities, they empower utilities to operate more efficiently, resiliently, and sustainably. Investing digital twins today is an investment in the future of water.



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From Waste to Energy: The Future of Biogas in Achieving Sustainability and Self-Sufficiency

A sustainable, eco-friendly way to manage trash and generate renewable energy is to produce biogas from agricultural waste. The agricultural industry can help lower greenhouse gas emissions, improve waste management, and increase energy self-sufficiency by using agricultural waste as fuel for biogas digesters. Biogas can be produced with suitable feedstock selection, optimum digesting architecture, and advantageous regulations and incentives.

The Global Energy Crisis: Driving the Shift to Renewables

The need for renewable energy has increased due to the global energy crisis brought on by climate change and the depletion of fossil fuel supplies. The continued widespread use of fossil fuels exacerbates the effects on the climate by releasing greenhouse gases like CO_2.

A transition to renewable energy is encouraged by international accords such as Agenda 21 and the Kyoto Protocol. The most common renewable energy sources have been solar, wind, and marine algae, although biogas from biomass has gained traction. After solar and wind power, biogas digesters are the third most efficient method of converting biomass into chemical fuels and energy. This shift lowers greenhouse gas emissions and promotes energy sustainability.

Composition and Energy Content of Biogas

Biogas is methane produced through the controlled anaerobic digestion of organic materials such as cellulose, hemicellulose, proteins, lipids, etc., depending on the digestion method and substrate utilized. According to current estimates, biogas generate about 7000 MW of electricity annually.

The procedure and substrate type have an impact on the methane composition, which determines the energy content of biogas. However, a number of variables, including composition and proportion, affect the biogas' calorific value. The heating value of biogas typically falls between 21 and 23.5 MJ/m³. The value of 1 m³ of biogas is more or less equivalent to 0.5–0.6 liters of diesel and about 6 kWh of electricity.

Feedstocks and Sustainability of Biogas Production

Biogas is produced using a variety of substrates, such as bovine manure, wastewater, and agricultural products. However, the controlled anaerobic digestion process is used to process biogas formation. The biogas digestion process produces biomethane, which may then be used as a sustainable energy source. As an alternative to chemical fertilizers, the digestate that is produced is utilized as biofertilizers. While a variety of substrates have been utilized to create biogas, it has been determined that using waste products as a substrate is more sustainable and effective for the circular economy. Additionally, managing trash sustainably and limiting the release of greenhouse gases and CO_2 emissions into the environment, it helps mitigate environmental toxins.

Economic and Environmental Importance of Biogas

The growing demand for fossil fuels and their escalating costs in the late 1980s seemed to pose a serious threat to developing nations' economies. because purchasing fossil fuels accounts for a significant portion of their GDP.

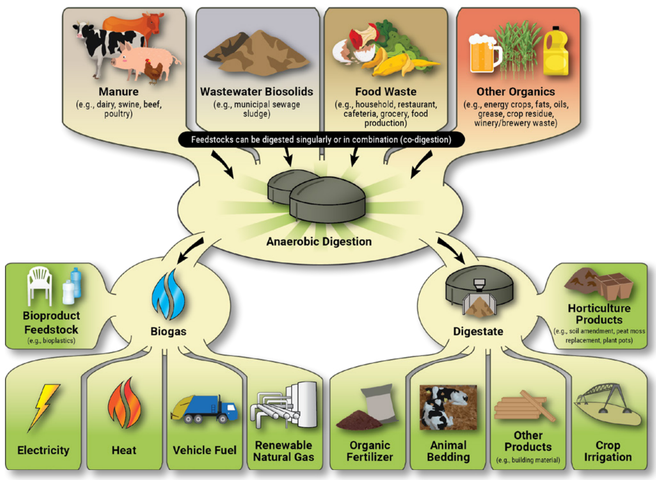
This made it necessary to look for a different fossil fuel or energy source. In this context, the production of biogas from a variety of sources, such as wastewater and agricultural waste, emerges as a substitute source that is safe for the environment, economical, and eco-friendly.

Waste Management Challenges and Rural Energy Self Reliance

There are currently enormous amounts of household trash, wastewater, and agricultural waste dumped into the environment, which not only pollutes the environment but also seriously harms human health. In this regard, the production of biogas from wastewater and waste products will be a futuristic feature for developing nations in terms of energy production self-resilience. Since over 70% of people in low-income nations still reside in rural regions and depend on agriculture for their livelihood, this sector has the potential to solve the energy problem.

Biogas Digesters: Benefits, Design, and Components

Waste treatment, resource recovery, greenhouse gas reduction, and the generation of renewable energy are just a few advantages of biogas digesters. The type of waste, the size of the operation, the resources that are accessible, and the amount of biogas used all influence their design and configuration. Each of the various essential parts of a biogas digester has a distinct purpose. The digester tank, which is composed of sturdy materials like steel or concrete, contains organic waste and keeps the digestion environment anaerobic.



Waste is introduced into the digester by the input system, which frequently uses pipelines or pumps for constant flow. Through pipelines, valves, or pumps, the exit system extracts digested material (digestate or effluent) for storage or additional treatment. These elements guarantee effective waste management and biogas production.

Biogas Collection and Monitoring Systems

The biogas generated during the digestion process are collected by the gas collection system. It usually has a flexible membrane or gas storage tank that enables biogas to build up and be stored under pressure. To extract the biogas while keeping air out, the digester is connected to the gas collection system. To maximize the digestion process and guarantee operational efficiency, biogas digesters frequently include control and monitoring systems.

These systems could have gas flow meters, temperature sensors, pH sensors, and heating or mixing controllers. There are several uses for the biogas that the digester produces. It can be used as fuel for cars or for heating, cooking, and producing power.

Types of Biogas Digesters and Wastewater Applications

Biogas digesters convert organic waste into biogas (a mix of CO_2 and CH_4) through anaerobic digestion. They come in various types tailored to feedstocks, scales, and needs. Key designs include:

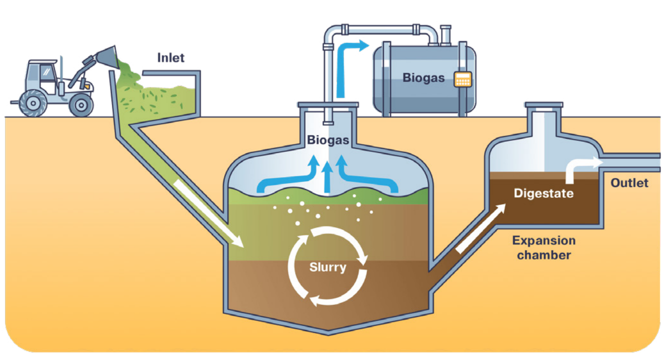
• CSTRs (Continuous Stirred-Tank Reactors): Used in centralized wastewater treatment, industry, and agriculture for efficient digestion.

• Horizontal Digesters: Multi-compartment tanks where waste moves sequentially, ideal for large-scale industrial or wastewater applications.

• Anaerobic Lagoons: Shallow outdoor pits relying on microbial activity to treat wastewater, suited for low-cost, large-volume waste.

These systems enable renewable energy production while managing organic waste sustainably.

Anaerobic digestion



Wastewater Treatment and Biogas Digesters

Wastewater management, which includes the appropriate treatment and disposal of wastewater produced by various human activities, industrial effluents, or the release of pollutants, is a crucial component of sustainable development. Conventional methods of treating wastewater take a lot of energy and frequently emit dangerous greenhouse gases. Nonetheless, a viable remedy is provided by the incorporation of biogas digesters into wastewater treatment systems.

Example of Efficient Biomass Handling Technology in Biogas Plants

Vogelsang USA, a manufacturer based in Ravenna, Ohio, has launched the CC-Mix, a new technology designed to enhance biogas production. The CC-Mix is marketed as an efficient and versatile solution aimed at simplifying the processing of diverse feedstocks in biogas plants. According to the company, the CC-Mix is adept at converting a variety of organic materials into a homogeneous suspension ideal for fermentation. It can process renewable resources, flowable solid matter such as maize silage and grain waste, as well as slightly pasty materials like fruit and vegetable waste, sugar beet pulp, and dry chicken manure. This broadens the range of feedstocks that can be utilised in biogas plants. With power requirements of 11-15 kW, the CC-Mix is positioned as an energy efficient choice, featuring robust mixing capabilities that create optimal conditions for bacterial activity in digesters.

Optimizing Efficiency and Streamlining Operations

To maximise efficiency and reduce operational disruptions, the CC-Mix includes an integrated foreign matter separator that ensures heavy materials like stones and metal parts are removed before reaching the pump, preventing damage. Its compact design and simplified controls enable easy integration into biogas plants, with the capability to feed multiple digesters from a single unit.

The QuickService concept reduces downtime during service and maintenance, with key components like the rotor and stator designed to swivel out as a unit for quick removal. Optional control technology, including a wide-screen touch display and two stage geometry, enhances overall operation.

Conclusion

Because there are a large supply of inexpensive feedstocks and a variety of biogas applications in heating, power generation, fuel, and raw materials for additional processing and production of sustainable chemicals like hydrogen, carbon dioxide, and biofuels, biogas is competitive, viable, and generally a sustainable energy resource. Additionally, biogas can be directly converted to electricity in fuel cells and utilized as a raw material to produce hydrogen and transportation fuel, which is an important step toward the development of sustainable energy. For use as renewable natural gas, enriched biogas or biomethane can be put into gas supply mains or containerized. Integrated waste management systems that integrate resource recovery, energy production, and waste treatment are made possible by biogas digesters.

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ENERGY NEWS BRIEF

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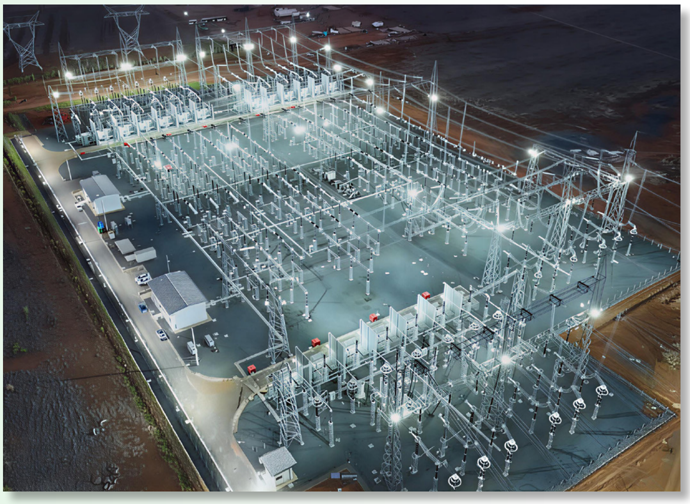
Iberdrola Energizes Alto Paranaíba, the Company's Largest Transmission Line in Brazil

Neoenergia, a subsidiary of Iberdrola in Brazil, has completed the energization of the final section of the Alto Paranaíba Project, one of Brazil's largest electricity transmission initiatives. Spanning 1,600 kilometers with 3,250 towers and six substations, the project enhances power transmission between Minas Gerais and São Paulo. Awarded during the 001/2022 auction by ANEEL, it was finished over 15 months ahead of schedule, with an investment of approximately 4.2 billion reais. Neoenergia's achievement underscores its commitment to Brazil's electricity sector development and excellence.



LONGi supplies 162 MW of Hi-MO 7 modules for Cotoperí Solar, the largest photovoltaic complex in Central America and the Caribbean

LONGi, a leader in solar technology, supplied modules for Cotoperí Solar, the largest photovoltaic complex in Central America and the Caribbean, inaugurated in Guaymate (La Romana). Developed by ACCIONA Energía and Cotosolar Holding, the project has an installed capacity of 162.6 MWp using LONGi's high-performance Hi-MO 7 modules. It will generate approximately 286 GWh of clean energy annually, preventing over 210,000 tons of CO_2 emissions. The project created over 600 jobs and includes social initiatives benefiting more than 4,500 people, enhancing skills and local entrepreneurship in the region.

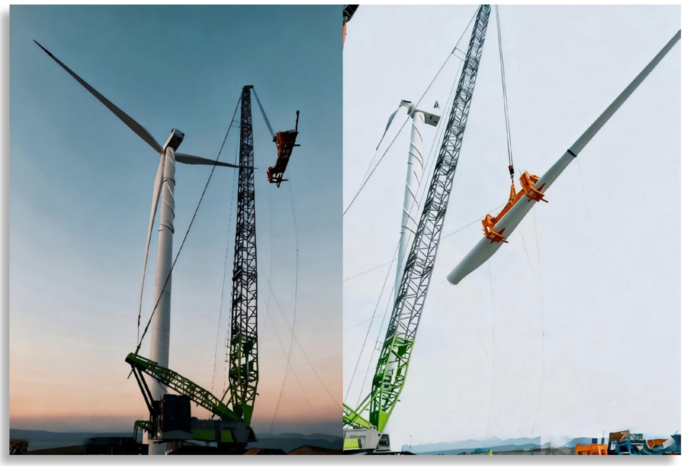
First SunPower Monolith Panel Installation

SunPower Inc. has successfully completed its first installation of Monolith panels, developed in collaboration with Renewable Energy Corporation (REC), the top seller of residential solar panels in the U.S. The installation was carried out by Cobalt Power Systems for a premium customer in Santa Cruz, California. Cobalt Power Systems CEO John Paul Bergh noted that demand for high-quality, power-dense modules has been exceptional, leading to immediate sales of the initial shipment. A second order has already been placed, with rapid deployment of Monolith technology underway to meet the needs of tech-savvy homeowners.

Bahrain: TotalEnergies and Bapco Energies Launch BxT Trading, a New Player in the Trading of Petroleum Products in the Middle East

TotalEnergies and Bapco Energies have launched BxT Trading, a new joint venture aimed at enhancing Bahrain's oil industry. The signing ceremony was attended by His Highness Shaikh Nasser bin Hamad Al Khalifa and Patrick Pouyanné, Chairman and CEO of TotalEnergies. BxT Trading will leverage Bapco Energies' refinery flows and TotalEnergies' global trading expertise to improve trading, pricing, analysis, and risk management capabilities. This initiative strengthens TotalEnergies' trading position in the Middle East and reinforces Bahrain's competitive presence in international energy markets, reflecting the Kingdom's commitment to strategic partnerships.

Forging a Benchmark in Energy Autonomy: Goldwind Completes First Turbine Installation at Georgia's Ruisi Wind Project



H.E. Zhou Qian, the Chinese Ambassador to Georgia, highlighted the evolving cooperation between Chinese and Georgian enterprises, exemplified by Goldwind's involvement in the 206 MW Ruisi Wind Power Project in Gori. The project, featuring 33 GW171-6.25 MW turbines, recently marked a milestone with the installation of its first turbine in just seven days. Once operational, it will generate approximately 600 million kWh of clean energy annually, serving over 200,000 households and reducing CO_2 emissions by over 400,000 tons. This initiative supports Georgia's energy security and green economy goals.

Vestas announces a new order in South Korea

Vestas Asia Pacific has secured a new onshore wind order in South Korea for the Uljin Giseong Wind Power Project from Kolon Global Corporation, with a total capacity of 31 MW. The contract includes the supply of five V162-6.2 MW wind turbines, along with a 20-year Active Output Management 5000 (AOM5000) service agreement to ensure long-term performance and reliability. Turbine delivery is scheduled for 2026, while commissioning and commercial operations are expected to begin in 2027. The project reinforces Vestas' continued expansion in the Asia-Pacific renewable energy market.

Global Energy Events

WateReuse Symposium 2026

Date: 24 & 25 February 2026

Location: InterContinental London - The O_2

This is no longer a story about pilots, price curves, or proof points. Storage has become the backbone of energy security, industrial competitiveness, and the digital economy. It now sits at the centre of national strategies, capital allocation, and geopolitical power. A requisite, not a nice-to-have.

Website: storagesummit.solarenergyevents.com

Energy Storage USA 2026

Date: 24 & 25 March 2026

Location: Renaissance Dallas Addison Hotel

As the U.S. energy storage market scales rapidly in the wake of policy shifts and technological breakthroughs, the Energy Storage Summit USA 2026 returns to connect the entire value chain from storage developers and utilities to investors, grid operators, and innovators.

Website: storageusa.solarenergyevents.com

SolarLUS USA

Date: 24 & 25 March 2026

Location: Renaissance Dallas Addison Hotel

For five editions, Large Scale Solar USA has convened the people driving utility scale solar development across the US. From 2026, the Summit becomes SolarPLUS USA, a rebrand that mirrors where the market is heading. Developers, investors and utilities are now managing hybrid assets, multi-state pipelines, storage co-location and complex grid challenges.

Website: lssusa.solarenergyevents.com

SolarPlus by informa USA

Renewables Procurement & Revenue Summit

Date: 20 & 21 May 2026

Location: Hilton London Tower Bridge

The Renewable Procurement & Revenue Summit 2026 brings together the UK and Ireland's renewable energy ecosystem to address these realities head on. Over two days, featuring dedicated Buyer and Seller streams, the Summit blends plenary discussions, expert panels, case studies, executive interviews, and peer to peer roundtables to deliver actionable insights on market trends, risk mitigation, and innovative contracting solutions.

Website: renewablerevenue.co.uk

The Battery Show Europe

Date: From 9 to 11 June 2026

Location: Messe Stuttgart, Germany

Join Peers at the Leading Meeting Place for the Advanced Battery and H/EV Technology Community. Meet battery manufacturers, suppliers, engineers, thought leaders, and decision makers for a conference and battery tech expo focused on the latest developments in the advanced battery and automotive industries.

Website: thebatteryshow.eu

PV ModuleTech USA

Date: 16 &17 June 2026

Location: Napa, USA

The event will gather the key stakeholders from solar developers, solar asset owners and investors, PV manufacturing, policy making and all interested downstream channels and third-party entities

Website: pvtechconferences.com/pv-moduletech-usa

Intersolar Europe

Date: From 23 to 25 June 2026

Location: At Messe München

As the world's leading exhibition for the solar industry, Intersolar Europe demonstrates the enormous vitality of the solar market. For more than 30 years, it has been providing a networking opportunity for the key players from manufacturers, suppliers and distributors to installers, service providers, project developers, planners and start-ups all under the motto "Connecting Solar Business".

Website: intersolar.de

International Energy Storage & Battery Conference & Exhibition

Date: From 9 to 11 October 2026

Location: Shanghai World Expo Exhibition and Convention Center

Council (Preparatory), New Energy Industry Association for Asia and the Pacific, European Association of Energy Storage Trade, China Electric Power Construction Association, Shanghai Federation of Industrial Economics, Shanghai New Energy Industry Association, and the SNEC PV, Storage & Hydrogen Energy Alliance, the SNEC ES+ 13th (2026) International Energy Storage & Battery Conference & Exhibition (abbreviated as "2026 SNEC ES+ Exhibition") will be grandly held.

Website: energystorageexpo.org

Battery Asset Management Summit Europe 2026

Date: 2 & 3 December 2026

Location: Hotel nhow Roma, Italy

Europe saw unprecedented growth in energy storage last year, with a record-breaking 12GW installed, and Battery Energy Storage Systems (BESS) continued to dominate this expansion. What continued to set this summit apart was the strength of its community. Through technical workshops and structured networking, stakeholders came together not only to learn but also to work through the real operational challenges shaping Europe's storage landscape.

Website: batteryeurope.solarenergyevents.com