



eVOQUA

WATER TECHNOLOGIES

Why Waste Water?

**A Guide to Recovering Resources at
Wastewater Treatment Plants**



TRANSFORMING WATER. ENRICHING LIFE.

THE PROBLEM WITH WASTING WATER

When water is wasted, money is wasted. Even energy is wasted. The world's precious—and dwindling—freshwater supply trickles away before it can deliver its full value.

Unfortunately, wastewater has an inherently misleading name—one that leads people to believe that industrial wastewater is intended to be wasted, destined to go down the drain, draining bank accounts at the same time.

Luckily, that simply isn't the case. There are plenty of innovative technologies that can help industries worldwide become more environmentally-friendly and more cost-efficient.

Experts predict that by 2030 the demand of global freshwater will exceed the supply by 40%*.

**Source: www.thebalance.com*



MAKE BETTER USE OF ON-SITE RESOURCES

*How can industrial processors combat waste—
both wasted natural resources and unnecessary expenses?*

Responsible wastewater treatment is directly tied to both economic and environmental sustainability. But in the rush to keep pace, too many processors miss the opportunity to do more with less.

Green energy, clean water, and nutrients can all be harnessed from wastewater. Moreover, the right treatment system uses less water and energy than inefficient technologies, resulting in further economic return.

AN INVESTMENT THAT PAYS OFF

In order to benefit from modern, innovative resource recovery technologies, processors should consider investing in on-site wastewater treatment. This proactive measure helps optimize the use of natural resources and gives processors more direct control over their sustainability efforts.

Instead of considering wastewater a problem, progressive companies are redefining wastewater as a resource in its own right. The industry is seeing a shift from wastewater treatment to resource recovery.



BIOGAS FROM ANAEROBIC DIGESTION

Anaerobic digestion produces valuable biogas, creating an incredible opportunity to convert waste into energy to further reduce operational costs.

On-site energy production is one of the most practical ways industrial producers can become more sustainable. Biogas can be used in boilers to produce heat, burned in cogeneration engines to produce both electricity and heat, or, in some cases, sold back to the energy network for utility credits. These smart strategies help displace fossil fuels.



The image shows a complex industrial system for biogas utilization. It features large, polished stainless steel pipes that curve and connect to various components. A prominent green electric motor is mounted on a metal frame, connected to a yellow control box. Below this, there are several large valves with red handwheels and blue actuators. The background consists of a stone wall and a clear blue sky. A large blue text box is overlaid on the right side of the image.

BIOGAS UTILIZATION

Biogas utilization helps industrial processors protect the environment—and their bottom line.

- Reduce your plant's energy costs
- Replace conventional non-renewable energy sources
- Improve your company's carbon footprint
- Produce heat and/or electricity on-site
- Sell excess electrical power to the local grid for profit
- Create a reputation of being environmentally responsible
- Potential to receive financial incentives

WATER REUSE



Wastewater can be a vast resource if reclaimed properly. The right on-site treatment system can transform treated wastewater into a reliable alternative water source, helping plants get more mileage out of process water.

Aerobic technologies such as membrane bioreactors (MBRs) are a good starting point for water reuse projects because they produce a very high-quality effluent.

Treated wastewater can be used in a number of applications, including:

- Makeup water in cooling towers and boilers
- Equipment cleaning
- Vehicle washing
- Agricultural irrigation
- Landscaping and lawn maintenance
- Urban reuse
- Fire protection



NUTRIENT RECOVERY

Nutrient-rich waste anaerobic sludge (WANS) from the anaerobic digestion can be recycled as a fertilizer.

The WANS contains high-levels of macro- and micronutrients, which presents an environmentally-sound alternative to commercial fertilizers. The production of WANS for use or sale can contribute to the economics of a biogas system.

Making better use of sludge places essential nutrients and water back into the soil, while reducing hauling costs and the associated emissions. Nutrients in WANS, including nitrogen and phosphorus, are plant-accessible, increasing nutrient absorption. When applied on land, these nutrients re-enter the food chain via uptake by plants and crops, creating a closed-loop nutrient cycle

RETHINK YOUR WASTEWATER STRATEGY

Industrial processors that have made the shift to treating wastewater as a resource rather than treating it like waste are minimizing costs and realizing the first-hand benefits of rethinking their perspective on wastewater.

Evoqua's ADI Systems' sustainable technologies are helping industrial processors worldwide recover naturally-occurring on-site resources to become more environmentally responsible. Our money-saving, planet-saving technologies can assist industrial processors in water reuse, waste reduction, and energy generating initiatives.

We can offer a customized solution to meet your plant's unique needs—today and tomorrow.

ADI[®] Systems

an eVOQUA brand

ADI Systems, an Evoqua brand, is a world-leading wastewater treatment and waste-to-energy technology solution provider with over 35 years of experience treating industrial processing wastewater and organic waste. We understand the complex challenges and strive to engineer unique solutions for the industry. Sustainability is the foundation of our design and construction processes, and innovative clean tech research and development is the building block of our many successful projects around the world.

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