



**evoqua**  
WATER TECHNOLOGIES



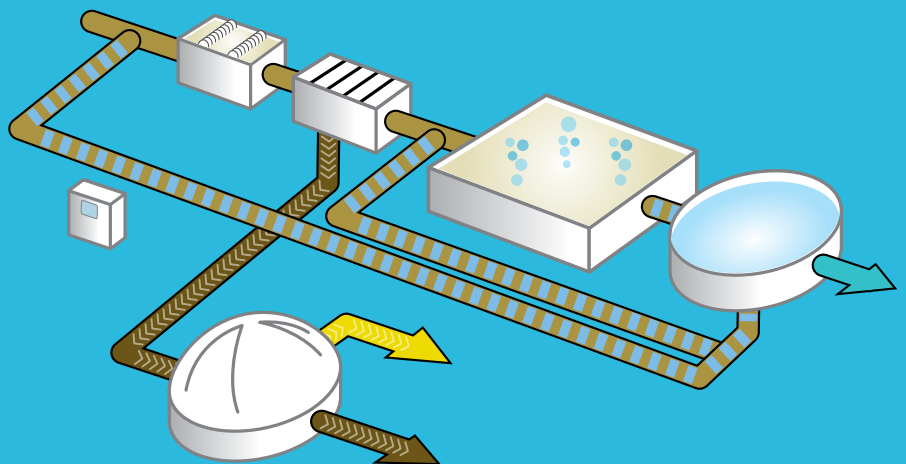
## **THE CAPTIVATOR™ SYSTEM**

**AN IMPORTANT STEP TOWARD A NET-ZERO ENERGY CONSUMING  
WASTEWATER TREATMENT PLANT**



## THE CAPTIVATOR™ SYSTEM CAPTURES BOD AND SENDS IT TO THE DIGESTER.

The Captivator™ System utilizes a VLR® Contact Tank (pictured here) from Evoqua to help biomass maximize the absorption of soluble BOD. A Folded Flow® DAF from Evoqua applied to the liquid stream (cover photo) removes and thickens the majority of biomass and incoming SS at high overflow rates.



# PRODUCE MORE BIOGAS. CONSUME LESS ENERGY AND SPACE.

Introducing the Captivator™ System from Evoqua Water Technologies. It improves a conventional anaerobic process by capturing and converting BOD to biogas that otherwise requires aeration energy.

The system can be applied to both new and existing plants, and can tilt new plant economics to favor anaerobic digestion. It can:

- Generate up to 40% more biogas
- Reduce aeration energy up to 40%
- Lower capital costs by up to 20%
- Shift a plant's energy balance toward net-zero energy usage

In the Captivator System, primary clarification and separate sludge thickening is replaced with a modified contact stabilization process in front of a DAF. The contact stabilization process is an aerated contact tank that is fed both raw influent and waste activated sludge.

## A CAPTIVATOR™ SYSTEM IS COMPRISED OF THREE TECHNOLOGIES

### VLR® Aerated Contact Tank

Helps biomass absorb BOD. Low energy disc aeration is incorporated into a space efficient design.

### Folded Flow® DAF

Efficiently removes and thickens the majority of the biomass and incoming SS. The DAF eliminates considerable footprint and capital costs associated with primary clarifiers and sludge thickeners. It also reduces grit sent to the digester and related maintenance costs.

### Integrated Control System

Fine tunes performance of the system, provides seamless controls across technologies and eliminates unnecessary PLC's.

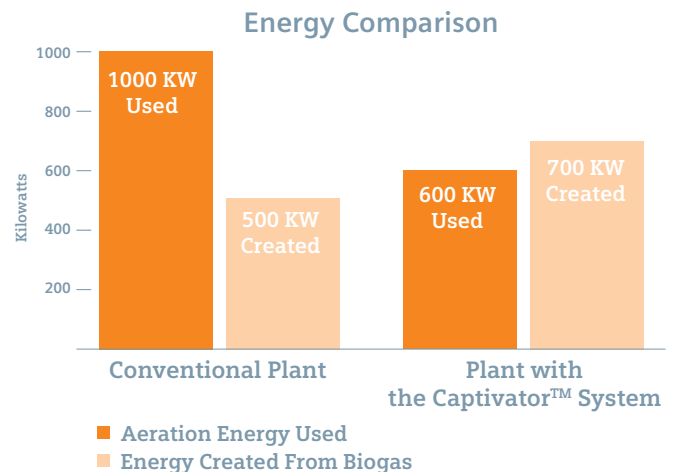
## THE CAPTIVATOR™ SYSTEM KEY ADVANTAGES:

- Provides a cost effective alternative to primary clarifiers and separate sludge thickeners
- Reduces the footprint of an anaerobic plant
- Increases biogas production and reduces energy consumption
- Improves the economics of converting biogas to electricity

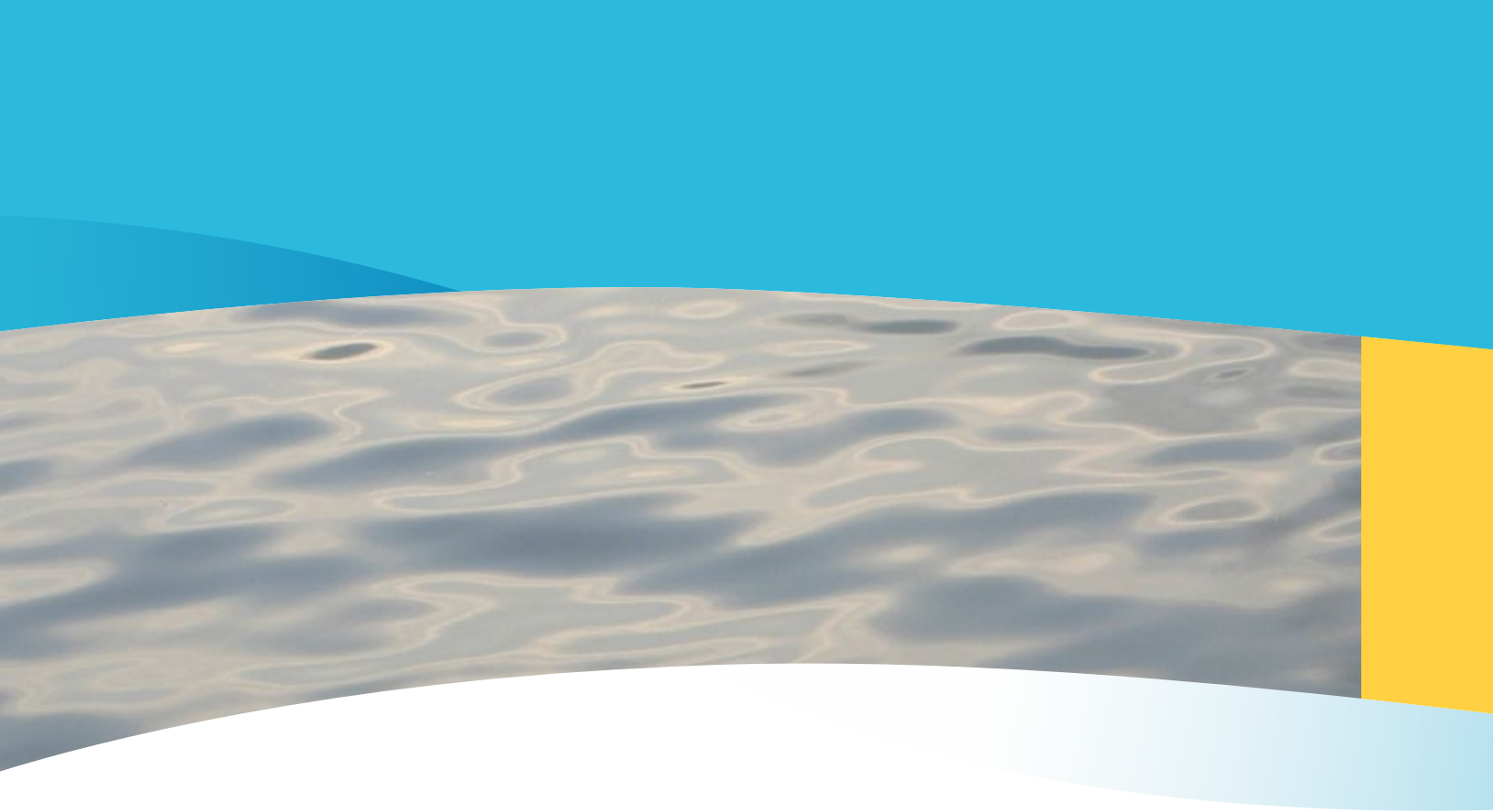
To speak with a technical expert or learn more about the Captivator System visit [www.evoqua.com/captivator](http://www.evoqua.com/captivator).

## Toward Net-Zero Energy Use

Whereas a 30 MGD conventional plant might use 1000 KW of electricity in aeration, and only produce 500 KW from biogas, a plant with a Captivator System would only need 600 KW for aeration and could generate 700 KW from biogas. The additional biogas is generated by digesting captured BOD instead of treating it in a biological reactor. This frees up a portion of the tank volume required by a conventional process for biological treatment.



THE CAPTIVATOR™ SYSTEM CHANGES AN ANAEROBIC PLANT'S ENERGY BALANCE.



## FLWSHEET SOLUTIONS: TECHNOLOGY COMBINATIONS CREATE GREATER VALUE

The Captivator™ System can be combined with other technologies to create even greater process and project efficiency. For example, a Dystor® Gas Holder with JetMix™ Hydraulic Digester Mixing can be combined into a solution to increase gas storage, operational flexibility and digestion efficiency. Waste or direct heat generated from biogas can provide energy for a low temperature Sludge Belt Dryer. FlowSheet Solutions projects are strongly supported with cross technology experts and a dedicated point of contact.



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