

# anaerobic membrane bioreactor (AnMBR)

## for high strength industrial wastewater

### background

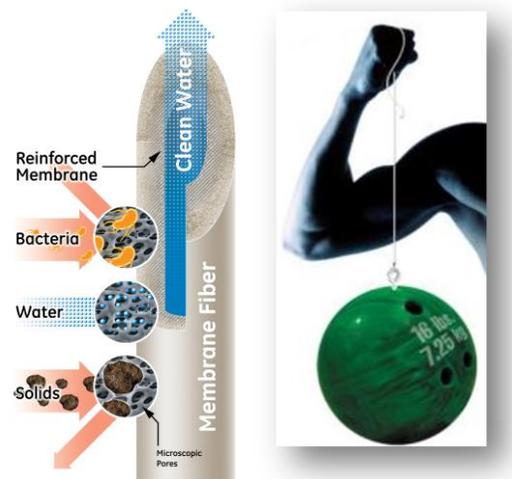
In many industrial wastewater treatment applications aerobic biological processes are applied for the removal of organics. However as the cost of energy continues to increase around the world, the energy cost associated with aerobic biological processes becomes a significant operational expense. In addition byproducts of aerobic wastewater treatment including carbon dioxide and bio-solids contribute to the customer's environmental footprint. As the amount of organics in the wastewater increase the operating cost and greenhouse gas emissions increase proportionally.

Organic material in wastewater can be a source of energy when treated anaerobically. The methane rich biogas produced can be used as a renewable, storable source of supplemental energy for the production of heat or power.

### improving effluent with AnMBR

Anaerobic digestion has been applied widely throughout the world for highly concentrated organic wastewater treatment. In some cases, where the process can be sensitive to upsets, the quality of the final effluent is often inconsistent. Conventional anaerobic digestion technologies have limitations in their ability to provide better quality, reliability, and efficiency.

SUEZ's Anaerobic Membrane Bioreactor technology provides the opportunity to improve effluent quality, reliability, and efficiency utilizing SUEZ's proven ZeeWeed\* 500 reinforced hollow fiber membrane (Figure 1).



**Figure 1: ZeeWeed Hollow Fiber Membrane (left) and Fiber Strength Demonstration (right)**

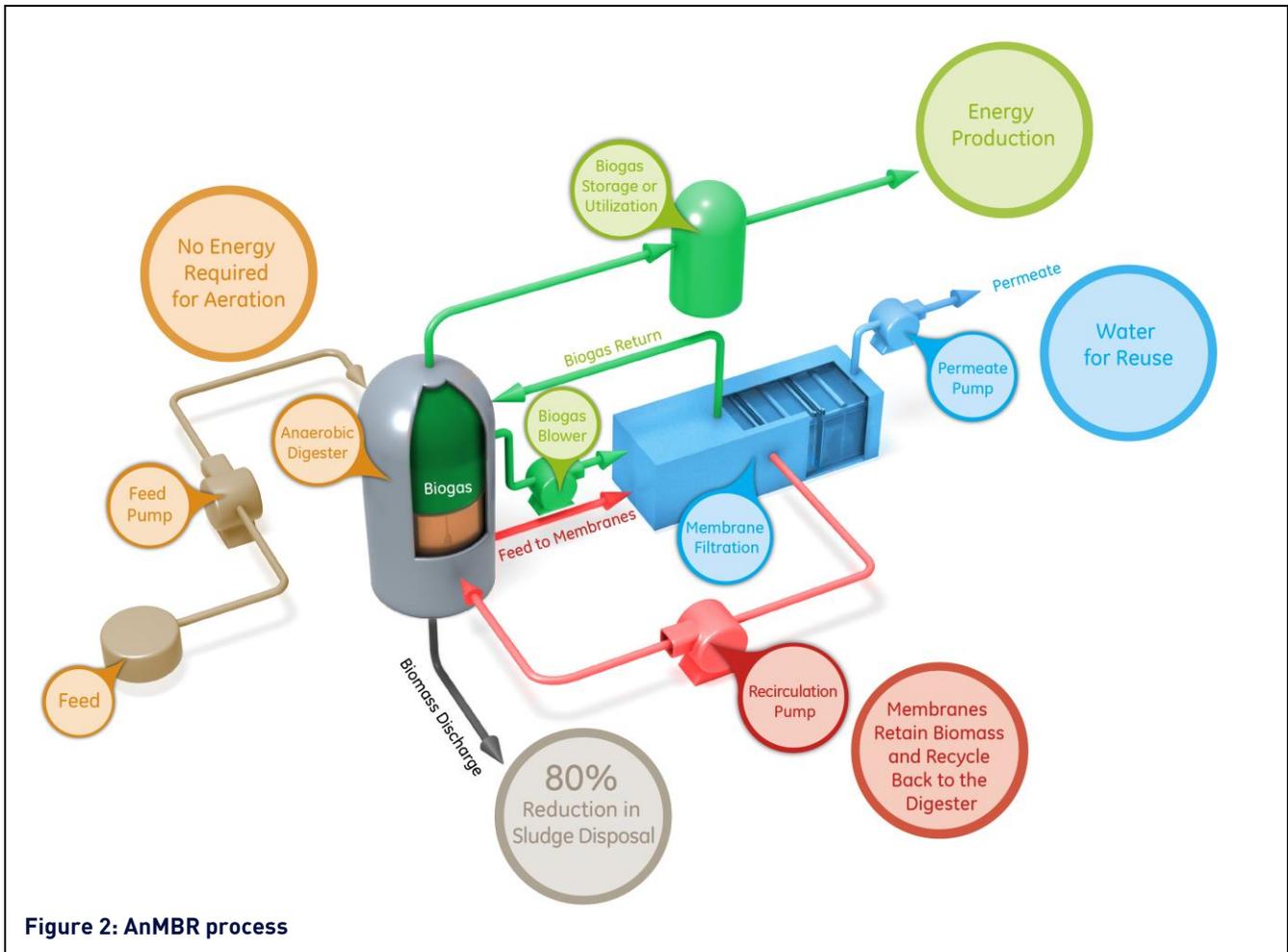
Integrating membrane quality filtration improves the reliability and robustness of anaerobic treatment of industrial wastewater by:

- Absolute retention of biomass for process stability and maximum biogas production.
- Separation of the solids retention time from the hydraulic retention time optimizing biological performance.
- No suspended solids carry over to final effluents significantly improving quality and reliability.
- Effluent suitable for post treatment for reuse applications.

Find a contact near you by visiting [www.suezwatertechnologies.com](http://www.suezwatertechnologies.com) and clicking on "Contact Us."

\*Trademark of SUEZ; may be registered in one or more countries.

©2017 SUEZ. All rights reserved.



## benefits

The benefits of the process include:

- Methane rich biogas produced can be used as a renewable, storable, source of supplemental energy for the production of heat or power
- Superior effluent quality and reliability using SUEZ's ZeeWeed 500 membranes
- Modular scalable system design, minimizes onsite construction and is ideal for future expansion
- Retrofit upgrade for existing conventional anaerobic digestion systems
- No biological oxygen required reducing energy costs for operation
- 80% Reduction in the amount of waste biological sludge that will require disposal compared to aerobic solutions
- Higher organic loading rates reduce footprint
- Process is sealed to the external environment so odor, VOC, and greenhouse gas emission control is much more efficient
- Leverages SUEZ's experience and industry leadership in MBR plant design