



Making clean water  
truly affordable.



TRIGEN™ R16  
ADVANCED MATERIALS & PROCESS  
TRULY AFFORDABLE SOLUTIONS



# Aquavive

## Making clean water truly affordable.

Aquavive stands for the celebration of water around which life revolves. Our focus is to develop truly affordable solutions for meeting critical, clean and high purity water shortfalls worldwide.

We manufacture advanced materials which dramatically upgrade the capabilities of simple water treatment processes. With the use of our advanced materials the costs for sewage treatment, water reuse and desalination can be 35–65% lower than current benchmarks.

We design integrated solutions for sustainable communities and small cities, which provide water and energy security at nominal cost in addition to a means of livelihood.

We were acknowledged as one of the top 50 innovators in global water technology on Earth Day 2009 by the Artemis Project, a boutique consulting practice dedicated to helping companies thrive in a world of increasing water scarcity.

# Advanced Materials

With the use of our advanced materials in simple, high efficiency processes, we help communities and small cities to achieve clean water sufficiency in a sustainable and truly affordable way.

Our range of advanced materials is developed from a unique adsorption kinetic technology platform. They are non-toxic, high process efficiency encapsulants, which capture for removal, suspended and dissolved solids including bacteria and viruses found in contaminated water or seawater. These materials are used for multiple treatment applications, from storm water to industrial effluent and from sewage to desalination. PolyWeb® P30 is used in wastewater applications to remove suspended solid (>0.1 micron) pollutants 5 times more effectively than competitive products from major global producers. The flocs or clumps of pollutants captured and removed using PolyWeb® P30 are much larger and denser than those from conventional flocculants.

Our range of natural adsorbents processed from botanical extracts, are used for storm water, dairy and food grade applications. They are significantly more cost effective and potent than chitosan biopolymer flocculants that dominate the market.

Naps 135 are regenerable nanoscale encapsulants which have the unique ability to encapsulate dissolved solids, including radioactive material, bacteria, viruses, oils and heavy metals which are >15 angstroms in size. It can desalinate seawater and replace energy intensive and low throughput membrane filtration processes, such as reverse osmosis.

# Process

## Wastewater

Aquavive's advanced materials supercharge existing biological wastewater treatment processes. In addition, our engineers have designed similar systems, which optimize the performance of our advanced materials for maximum process efficiency.

MicroWeb™ Solutions are closed loop wastewater process solutions designed to meet and exceed the strictest discharge standards in treating high strength organic effluent as well as a wide spectrum of industrial effluent, including mining, pharmaceutical, electronics, oil and gas. Bioreactor flow down attachments vary according to effluent characteristics relating to suspended solids (SS) and chemical oxygen demand (COD).

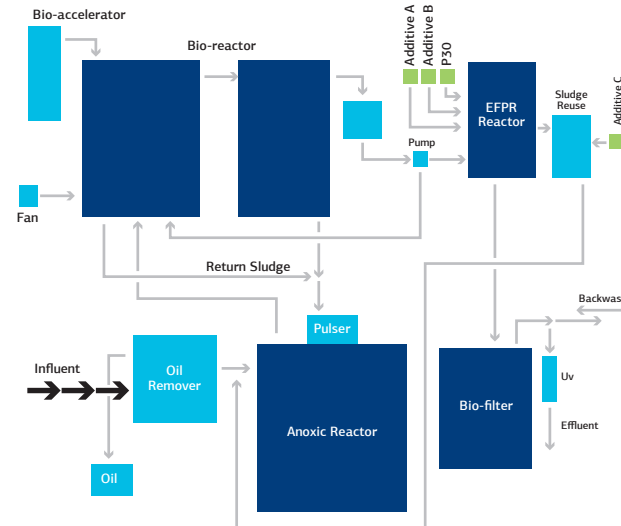
## Desalination and High Purity Water

A 0.75 mgd desalination prototype using Naps 135 advanced material as the performance driver is being developed. When completed, it will set landmark cost and performance indicators for the multi-billion dollar desalination and high purity water market.

## Water Reuse and Zero Liquid Discharge Solutions

MicroWeb™ BMR Solutions recycle wastewater for reuse including zero liquid discharge (ZLD) applications without the need for membrane filtration. The treatment undergoes aerobic and anoxic phases during which nitrification and denitrification takes place prior to polishing via a biofilter packed with encapsulants and adsorbents including activated carbon. Final UV disinfection enables the quality of clean water discharged to approximate potable grade.

### Water Reuse and Zero Liquid Discharge



Aquavive provides solutions for small cities and communities to achieve water and energy sufficiency at nominal cost.

More importantly, economically challenged communities such as those in semi-arid zones will benefit through job creation and income generated from valuable byproducts derived from waste.

## Trigen™ Sustainable Living Community Solutions

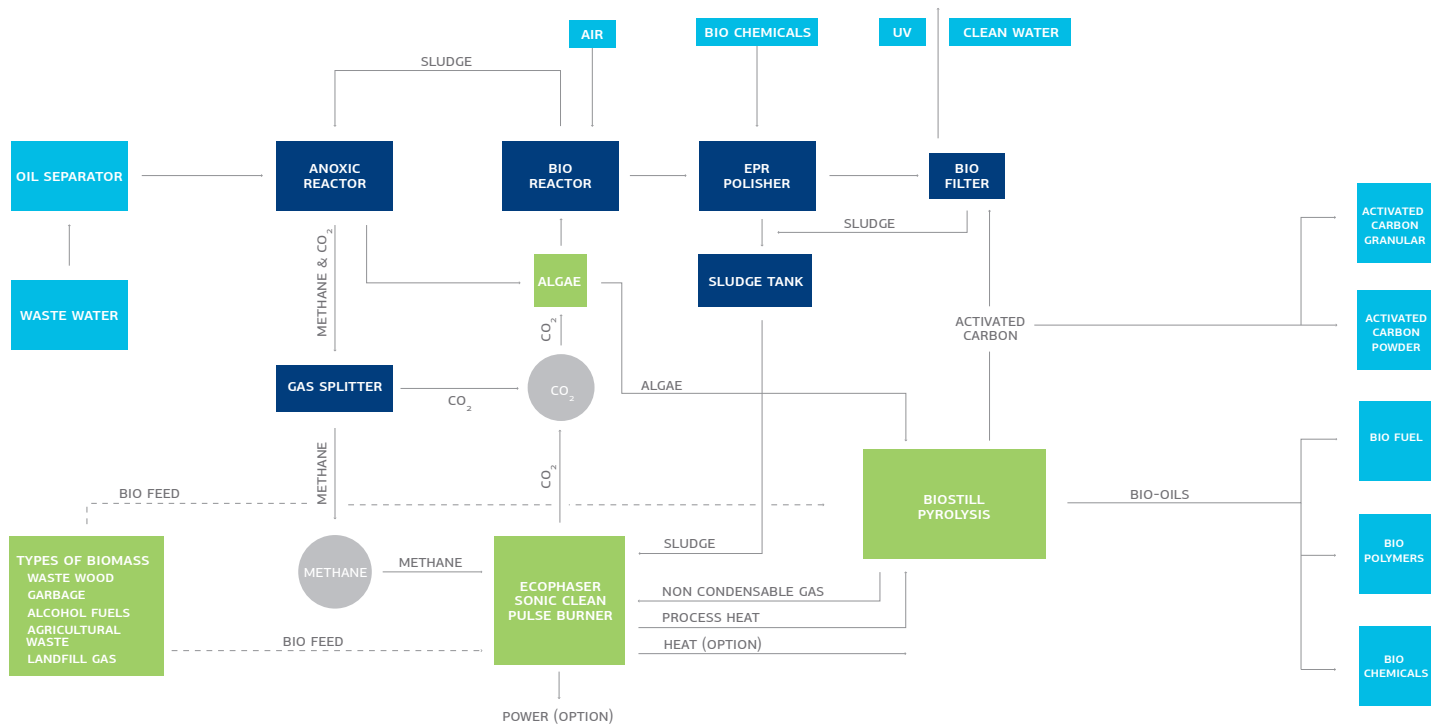
Communities, especially in challenged environments such as semi-arid locations, cannot afford the higher cost of clean water for decentralized systems. Aquavive is a solutions provider for water and energy at nominal cost to the communities. Starting from wastewater, we establish a high efficiency, self-contained waste-to-value conversion facility that provides healthy returns from the sales of valuable byproducts, including biomaterials for water treatment and disinfection. Aquavive's strategic partners for the Trigen™ program are ecoPhaser Energy Corp with a proprietary sonic pulse burner and Biostill Chemicals with a unique biorefinery for extracting high value byproducts from wood and agricultural wastes.

**Target communities and small cities (5,000 to 180,000 in population) can be found in peri-urban zones with wood and agricultural waste.**

### Typical Trigen™ R16 Project Financial Summary

Community Population:	20,000 adults
Investment:	US\$7.85 million
Footprint:	4,300m <sup>2</sup> plus yard storage
Service Life:	25 years
Revenue Generated (5 years):	US\$53 million
Capital Cost Recovery:	< 3 years
ROI (5 Years cash/cash):	124%
NPV (20% - 10 Years):	US\$4.5 million
IRR:	32%

# Trigen™ R16 Process Diagram



## TRIGEN™ R16

A Waste-to-Value Three Phase Conversion Facility Starting from Wastewater.  
A Blueprint for Profit in Sustainable Community Development.

### Value Proposition

- 2 Year Capital Cost Recovery
- High ROI For Traditional Cost Center
- All Emissions Treated
- Dual Carbon Capture

### Waste Processing Sludge

- Wood Waste
- Agricultural Waste
- Screened Garbage
- Manure

### Revenue Streams

- Clean, Reusable Water
- Saleable Biofuels
- High Value Powdered and Granulated Activated Carbons, Biopolymers and Biomaterials.

**Trigen™ R16 is an integration of best-of-breed processes from key strategic partners:**

- Aquavive Technologies Inc. : MicroWeb™ BMR Water Reuse Process
- ecoPhaser Energy Corp: Mark VII Sonic Clean Pulse Burner
- Biostill Chemicals Ltd: Biostill™ Biorefinery

## Market Positioning

We have sold products and installed systems in China, India, Brazil and have secured projects in Canada and Mexico.

Our target markets are the communities and industries requiring truly affordable, clean water and energy solutions without the cost and performance barriers from the competition. Our solutions are unique, simple and technology enabled.

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