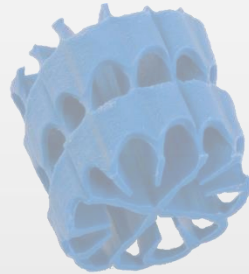
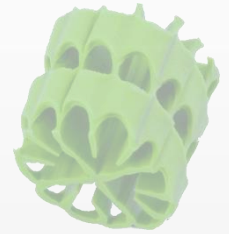
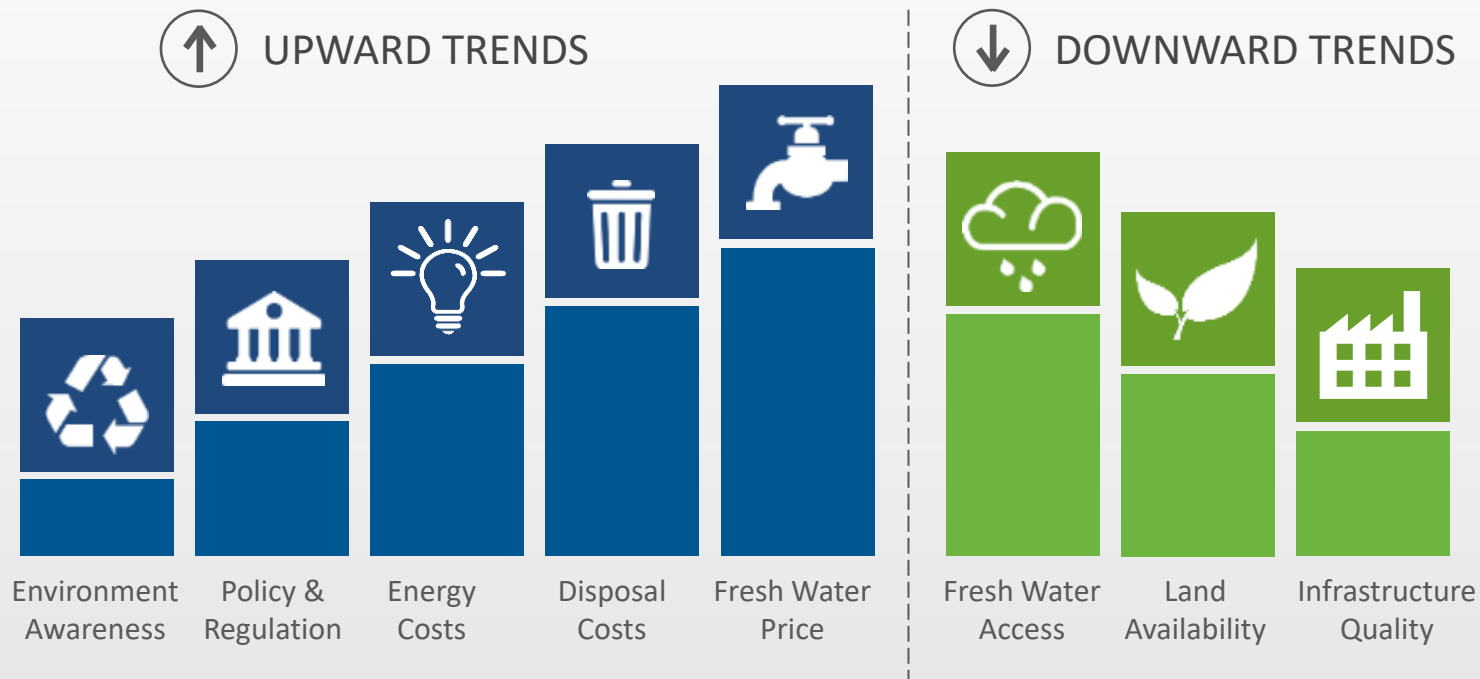




Advanced Water and Wastewater Treatment Solutions



Global Water Market Trends





Company Highlights

About Aqwise

Aqwise is an industry leader in advanced water and wastewater treatment technologies



- **Expertise**
 - Strong biological process know-how
 - Multidisciplinary expert staff
- **Global Reach, Local Presence**
 - Over 500 installations in 50 countries
 - Worldwide regional offices and sales representatives

Global Solution Provider

Aqwise is a trusted solution provider for municipal and industrial customers



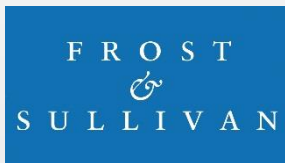
Market Recognition

Aqwise has received widespread recognition from industry experts and analysts



Dun's 100 by Dun and Bradstreet

- Received the Dun's 100 mark of excellence: 2017, 2018



Frost & Sullivan: Performance Value Award

- Aqwise received the 2017 F&S Global Performance Value Leadership Award for the water sector



Deloitte, Technology FAST 50

- Fast 50, Israel: 8 consecutive years (2008-2015)
- Fast 50, Israel: Winner 2009
- Fast 500, EMEA: 1st in Cleantech 2009 (2008-2011)

Global Impact



sraeli para cultivar hasta to



Diverse Solutions



Municipal WWTPs
Upgrades and
Retrofits

Aerobic and
Anaerobic
Industrial WWTPs



Decentralized
Wastewater
Treatment & Reuse

Surface Water and
Groundwater
Treatment





Aqwise Technology

Technology Highlights

Aqwise technology is the result of over a decade of multidisciplinary research and development



- Innovative biofilm-based technology
- Strong IP portfolio
- Unique proprietary know-how
- Cost efficient, scalable, and eco-friendly
- Field-proven in diverse applications

Innovation That Works

Aqwise Biomass Carriers protect biofilm against abrasion and ensure mass transfer efficiency

Recycled, high-density
polyethylene

Optimal oxygen and
nutrients transfer

Highly open
external design

Applicable for various
biological processes

High Effective surface area

Customer Benefits



SMALL FOOTPRINT

Suitable for both new applications and existing plant upgrades.



COST EFFICIENT

Requires minimal civil works, short project life cycle and lower Capex/Opex.



SCALABLE & FLEXIBLE

Smooth upgrade or gradual expansion based on just-in-time investment.



DURBLE & STABLE

Highly resistant to hydraulic shock loads with short recovery time after toxic loads.



LOW MAINTENANCE

Simple maintenance and low operational costs.



ECO FRIENDLY

Recycled materials, less land usage, no scenery obstruction and less sludge.

Aqwise: Eco-Friendly Approach

Aqwise solutions enable retrofit, reuse and recycling of existing equipment, materials and resources

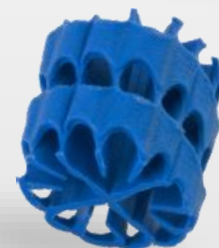


RETROFIT

REUSE

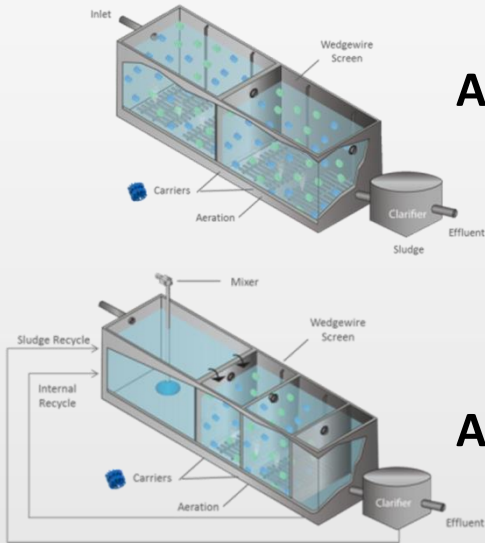
RECYCLE

Cost-effective and
environmentally-friendly solutions



Diverse Biological Processes

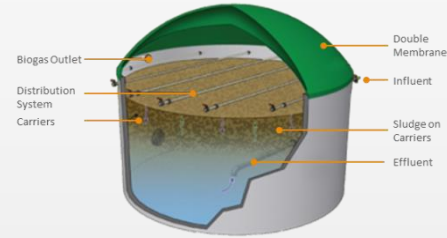
AGAR® Aerobic Processes



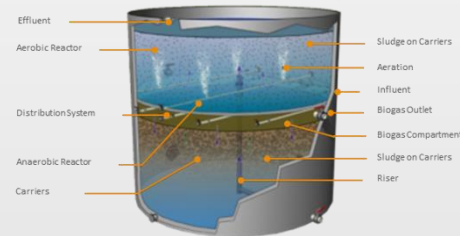
AGAR® MBBR

AGAR® IFAS

DACS® Anaerobic Processes

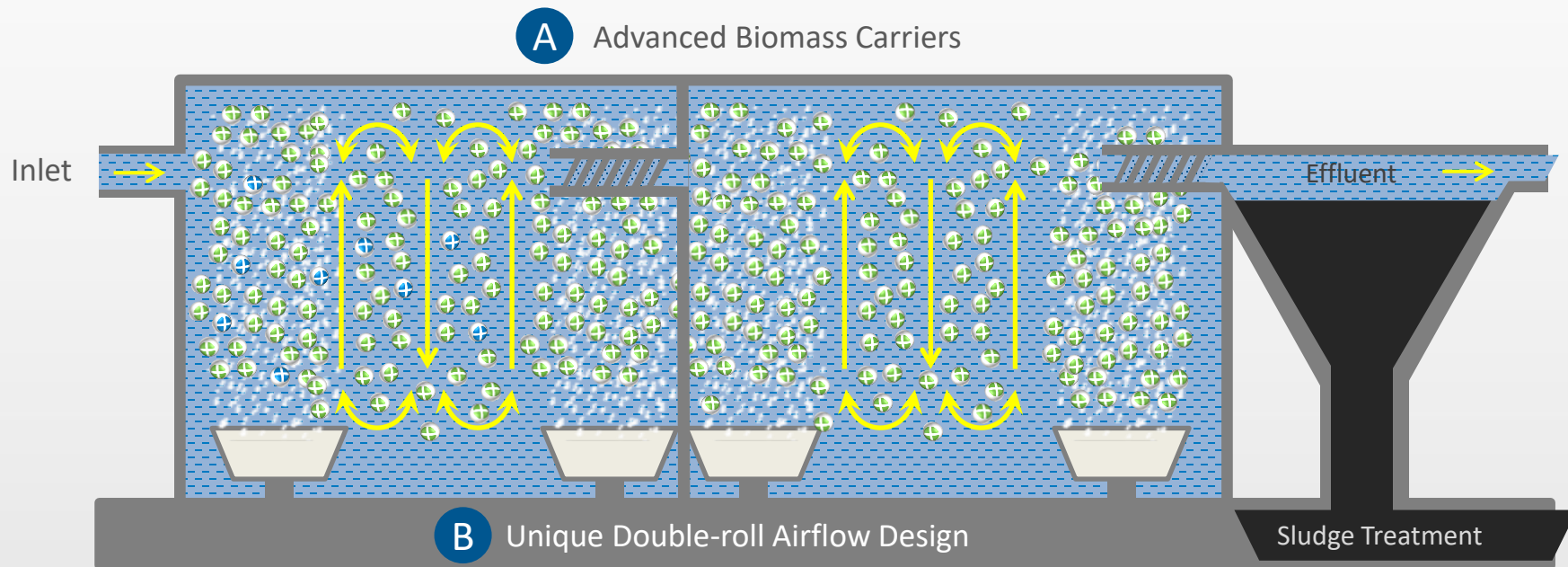


DACS®



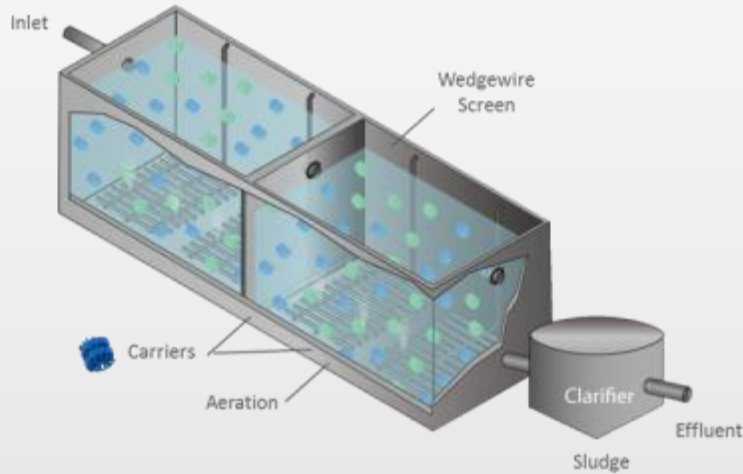
DACS® DANA

AGAR[®] Technology Overview



Aerobic Technology

Moving Bed Biological Reactor

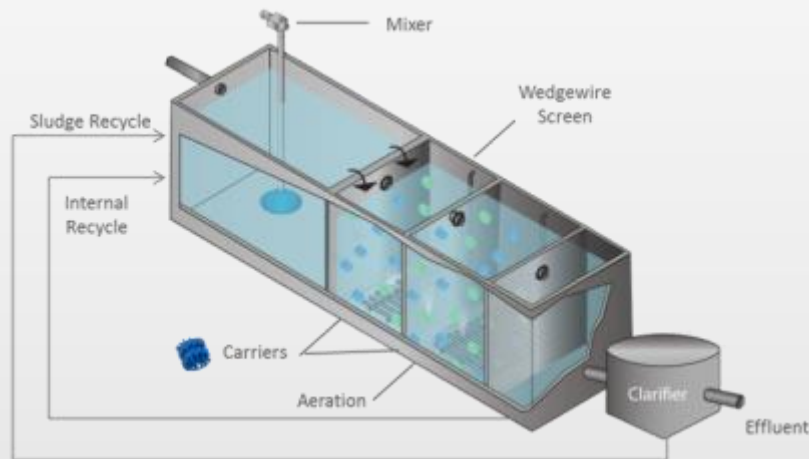


AGAR® MBBR Solutions

- Simple, single-through process
- Reduces soluble pollutants with minimal process complexity
- Requires a significantly smaller footprint

Aerobic Technology

Integrated Fixed Film Activated Sludge

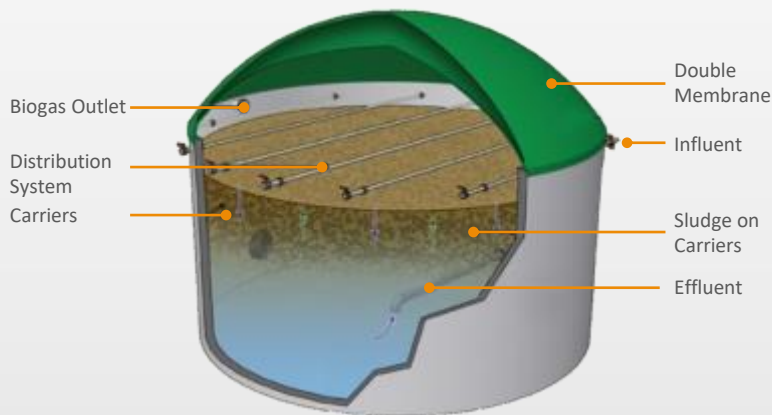


AGAR[®] IFAS Solutions

- Combines activated sludge and biofilm systems
- Enhances nutrient removal
- Typically used to upgrade existing plants

Anaerobic Technology

Downflow Anaerobic Carrier System



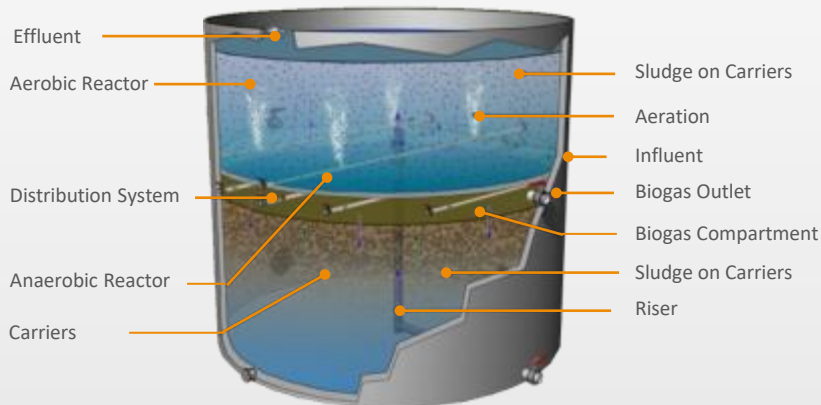
DACS[®] Solutions

- Suitable for heavily loaded industrial applications
- Downflow distribution method of wastewater on biomass carriers
- Very fast Return on Investment through energy generation



Anaerobic Technology

Dynamic Anaerobic Aerobic System



DACS® DANA Solutions

- Hybrid system:
“One-Stop-Shop” approach
- Complete solution for high load industrial applications meeting stringent discharge requirements
- Enables reuse of both water & energy



Packaged Plants

Pre-fabricated wastewater treatment facilities

- Tailor-made & modular solutions
- Small footprint
- Short project life cycle
- Minimize on-site local works
- High-level quality assurance



AGAR[®]-PnP

AGAR[®]-PnP (Plug & Play) - The next generation of containerized WWTP



- Fully automated remote monitored units
- Flow: 50-400 m³/day
- Especially designed for rural areas and small communities
- AGAR[®] MBBR-BNR configuration followed by Aqwise MC for solids removal
- High treatment capacity for cold climate
- High effluent quality including TN & TP removal

Research & Development

Aqwise is actively involved in the development of new and innovative biological solutions



Aqwise Laboratories



Field Test Facilities

- **Research Facilities**

- Advanced Research & Development center located in Israel
- Biological process excellence center

- **Wastewater Treatment**

- Development of new biological processes for treatment and compliance to new standards

- **Drinking Water**

- Focus on efficient treatment of new pollutants

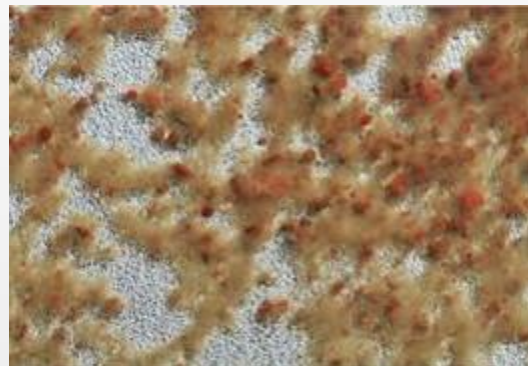
Combining Circular Economy & Innovation

Developing the next generation sustainable technologies



Creating new
water sources

Enhanced biogas
quality



Positive Energy WWTP
Carbon recovery



Solution Portfolio

Aqwise Solution Portfolio

Aqwise supplies adaptable technology and tailor-made solutions for the global markets



MUNICIPAL

- New and upgrade installations
- Large or small scale facilities
- Full water reuse or discharge to the environment



INDUSTRIAL

- High strength wastewater treatment
- Wide range of industries
- Water reuse & energy recovery



DRINKING WATER

- Surface water treatment
- Ground water treatment
- Environmental approach for treating a variety of pollutants

Project Management

Aqwise implements recognized industry standard project management methodologies



Municipal Solutions

Aqwise offers the widest range of solutions to meet municipal customer needs



Ability

- New facilities
- Efficient upgrades

Plant Scale

- Large Scale
- Small to medium scale



Effluent

- Full reuse of water
- Complete discharge

Industrial Solutions

Aqwise has a proven track record in a wide range of industrial sectors



Pharmaceuticals and Chemicals



Pulp and Paper



Oil and Gas



Food and Beverage



Aquaculture

Aqwise
Clear and Simple



Municipal Solutions

Large Scale Municipal Solutions

Aqwise solutions include implementation of new plants and upgrade of existing facilities



- Small Physical Footprint
- Minimal Civil Works
- Retrofit of Existing Facilities
- Simple Operation & Maintenance
- Expansion of flow capacity

Compact Municipal Solutions

Full “all-in-one” containerized solutions suitable for a wide range of purposes



Wide Range of Applications



Remote
Communities



Industrial
Parks



Hotels
& Resorts



Gas Stations
& Rest Areas



Marine,
Oil & Gas



Mining &
Construction

Case Study: Municipal Plant Upgrade



HIGHLIGHTS

- Customer: Monclova Municipality
- Location: Mexico
- Capacity: 58,000 m³/d



REQUIREMENTS

- Upgrade of existing plant from 30,000 m³/d to 58,000 m³/d



SOLUTION

- AGAR® IFAS configuration
- No reactor expansion
- Industry reuse water quality



Monclova, Mexico

Case Study: Greenfield Municipal Plant



Meitzar, Israel



HIGHLIGHTS

- Customer: Meitzar Municipality
- Location: Israel
- Capacity: 5,000 m³/d



REQUIREMENTS

- New wastewater treatment plant for a growing area



SOLUTION

- AGAR® IFAS configuration
- Intensive nutrient removal
- Scalability for future upgrades

Case Study: Package Plant



HIGHLIGHTS

- Customer: Small, remote municipality
- Location: Israel
- Capacity: 100 m³/d



REQUIREMENTS

- Wastewater reuse for irrigation



SOLUTION

- AGAR® MBBR configuration
- Containerized Plug & Play solution
- Proprietary Aqwise Media Clarifier



Package Plant, Israel



Industrial Solutions

Industrial Applications



Food & Beverage

Soft beverages and breweries, food processing and production, bakeries and all types of dairy products



Pulp & Paper

Pulp and all types of Paper Mills including combined and reusable ZLD production plants



Pharma & Chemicals

Active Pharmaceutical ingredients (API) facilities and pill manufacturing plants



Oil & Gas

Wide range of upstream and downstream applications for oil refineries and gas stations.

Case Study: Pulp & Paper



HIGHLIGHTS

- Customer: Europaper
- Location: Italy
- Capacity: 2,000 m³/d



REQUIREMENTS

- Changes in the paper production led to a capacity increase and high BOD loads



SOLUTION

- DAF-AGAR® MBBR configuration for industrial use



Paper Factory, Italy

Case Study: Food & Beverage



Dairy Factory, The Netherlands



HIGHLIGHTS

- Customer: Friesland Campina
- Location: The Netherlands
- Capacity: 1,440 m³/d



REQUIREMENTS

- Fluctuation in wastewater composition
- Very limited footprint



SOLUTION

- AGAR[®] MBBR-DAF configuration for production of dairy products

Case Study: Food & Beverage



HIGHLIGHTS

- Customer: TAB Koncentraty
- Location: Poland
- Capacity: 1,000 m³/d



REQUIREMENTS

- Treatment of high COD levels – from apple concentrate factory



SOLUTION

- Two DACS[®] reactors followed by a two-stage AGAR[®] MBBR
- Treating variable loads in minimal footprint



Case Study: Pharmaceuticals



TEVA Pharmaceutical Plant, Israel



HIGHLIGHTS

- Customer: TEVA Pharmaceuticals
- Location: Israel
- Capacity: 300 m³/d



REQUIREMENTS

- Retrofit of an existing oxidation process plant in a very limited footprint



SOLUTION

- AGAR® MBBR – DAF configuration for industrial use
- Meeting requirements in variable influent conditions



Drinking Water Solutions

Drinking Water Solutions

Aqwise technology leads the way in biological potable water treatment



- Biological treatment for surface and ground water sources
- No brine for disposal
- Low energy costs
- Scalable design
- Eco-friendly technology

Case Study: Surface Water Treatment



HIGHLIGHTS

- Customer: Municipality of Agra
- Location: Yamuna River, Agra, India
- Capacity: 163,000 m³/d



REQUIREMENTS

- Need to provide safe drinking water for population of 2 million people



SOLUTION

- Cost-efficient surface water treatment
- AGAR® MBBR and UF membrane polishing
- Adaptive to variable loads



River Water Treatment - Agra, India

Case Study: Ground Water Treatment



Ground Water Treatment - Sdot Yam, Israel



HIGHLIGHTS

- Customer: : Kibbutz Sdot Yam
- Location: Israel
- Capacity: 1,300 m³/d



REQUIREMENTS

- Meeting drinking water nitrate health regulations for well water treatment



SOLUTION

- Denitrification AGAR® MBBR , UF polishing
- Minimal footprint
- No residual brine



Scope of Services

Business Models

Aqwise offers a wide range of business models to fit customer needs



Turn-Key Project

Full project management and implementation.



Package Plant

Compact containerized and pre-fabricated solutions.



Process Package

Technological process design services and equipment.



Financing

Tailor-made financial models to meet customer budget requirements.



Professional Services

Pilot Services, process supervision up to full Operation & Maintenance.



Summary

Aqwise – Clear and Simple



- Technology Leadership
- Global Reach, Local Presence
- Proven Track Record
- Measurable Return on Investment
 - Wastewater reuse
 - Energy recovery
 - Retrofit capabilities



Thank You