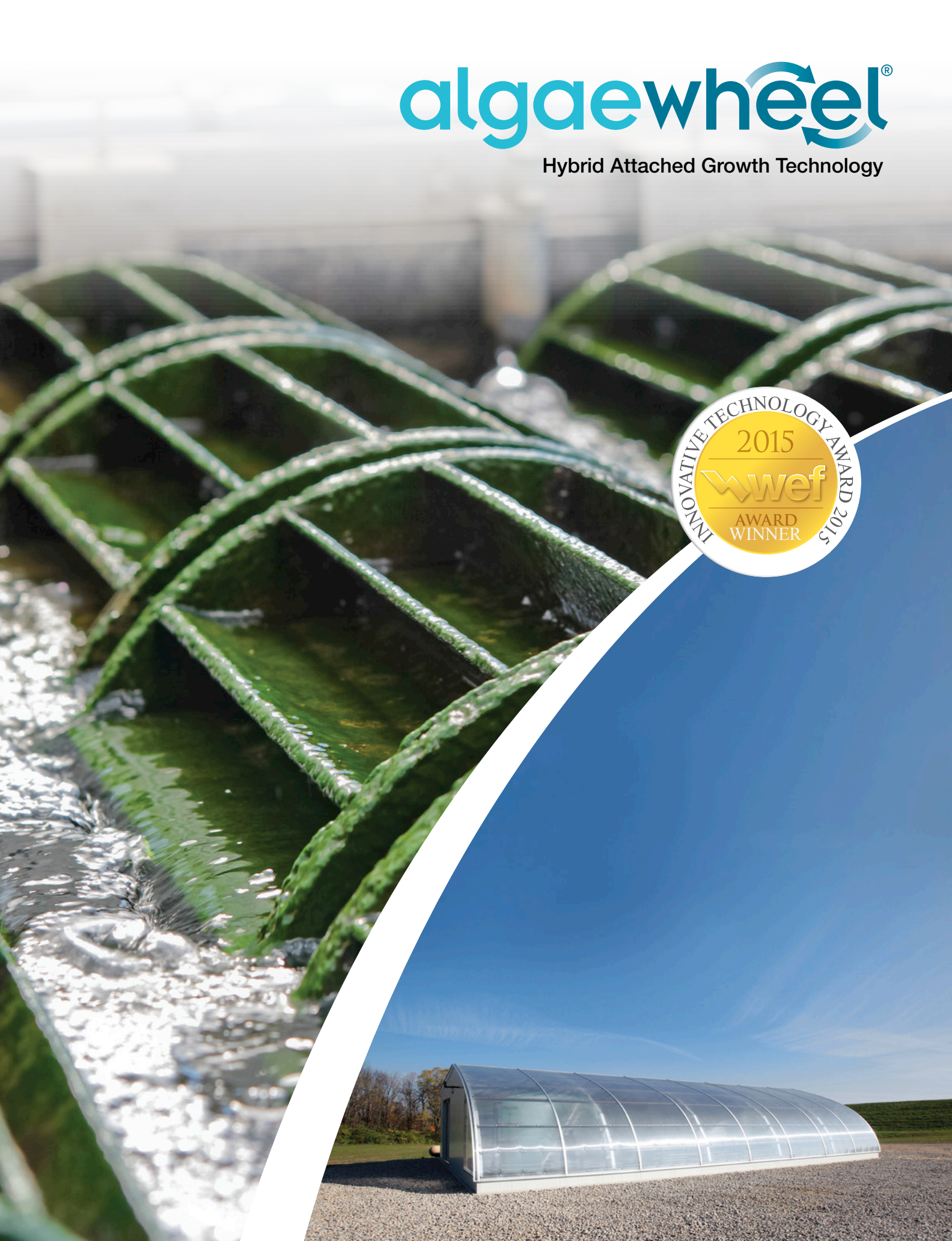


# algawheel®

Hybrid Attached Growth Technology



Algaewheel is an award winning technology that sustainably solves the problems of small-scale treatment



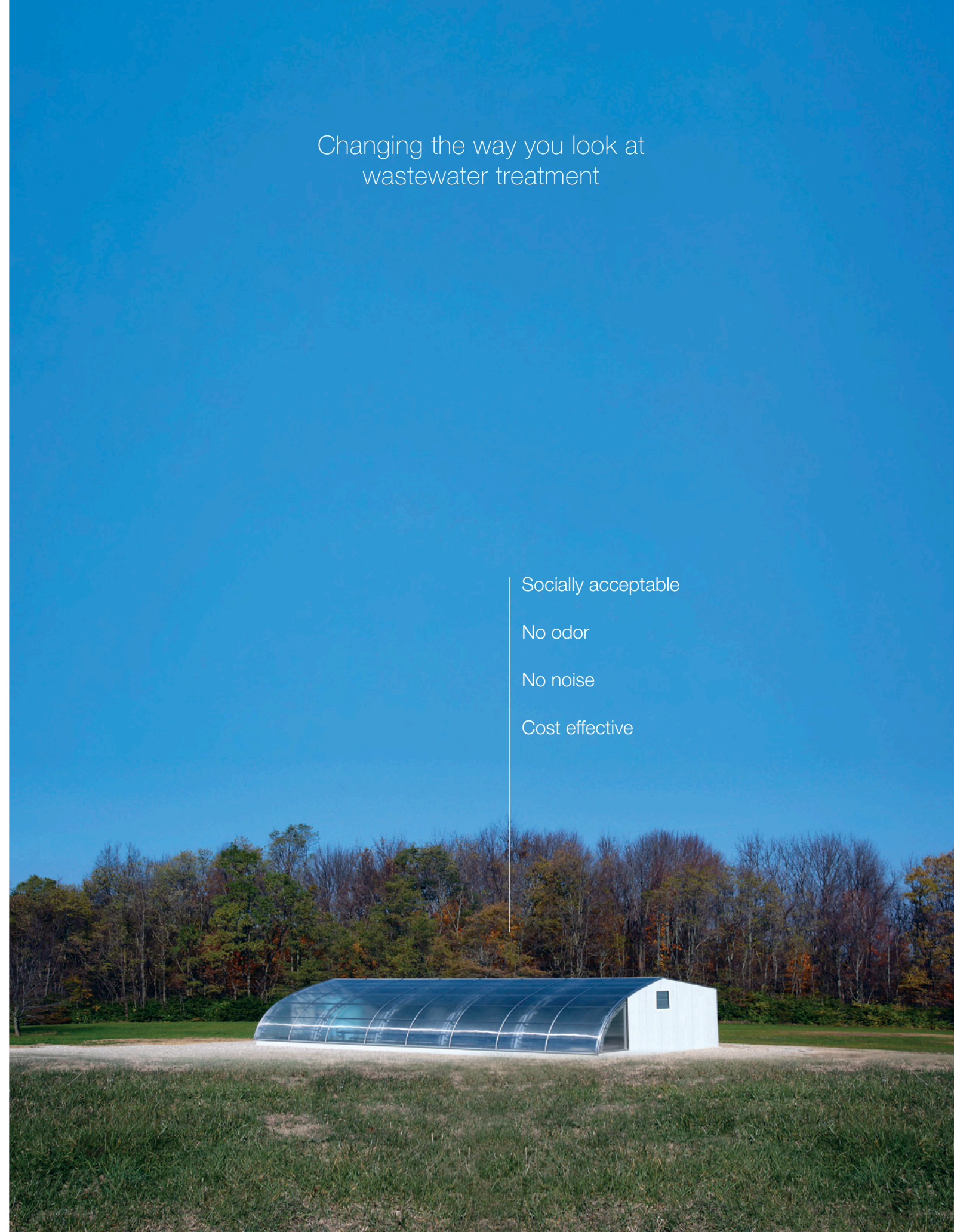
Changing the way you look at  
wastewater treatment

Socially acceptable

No odor

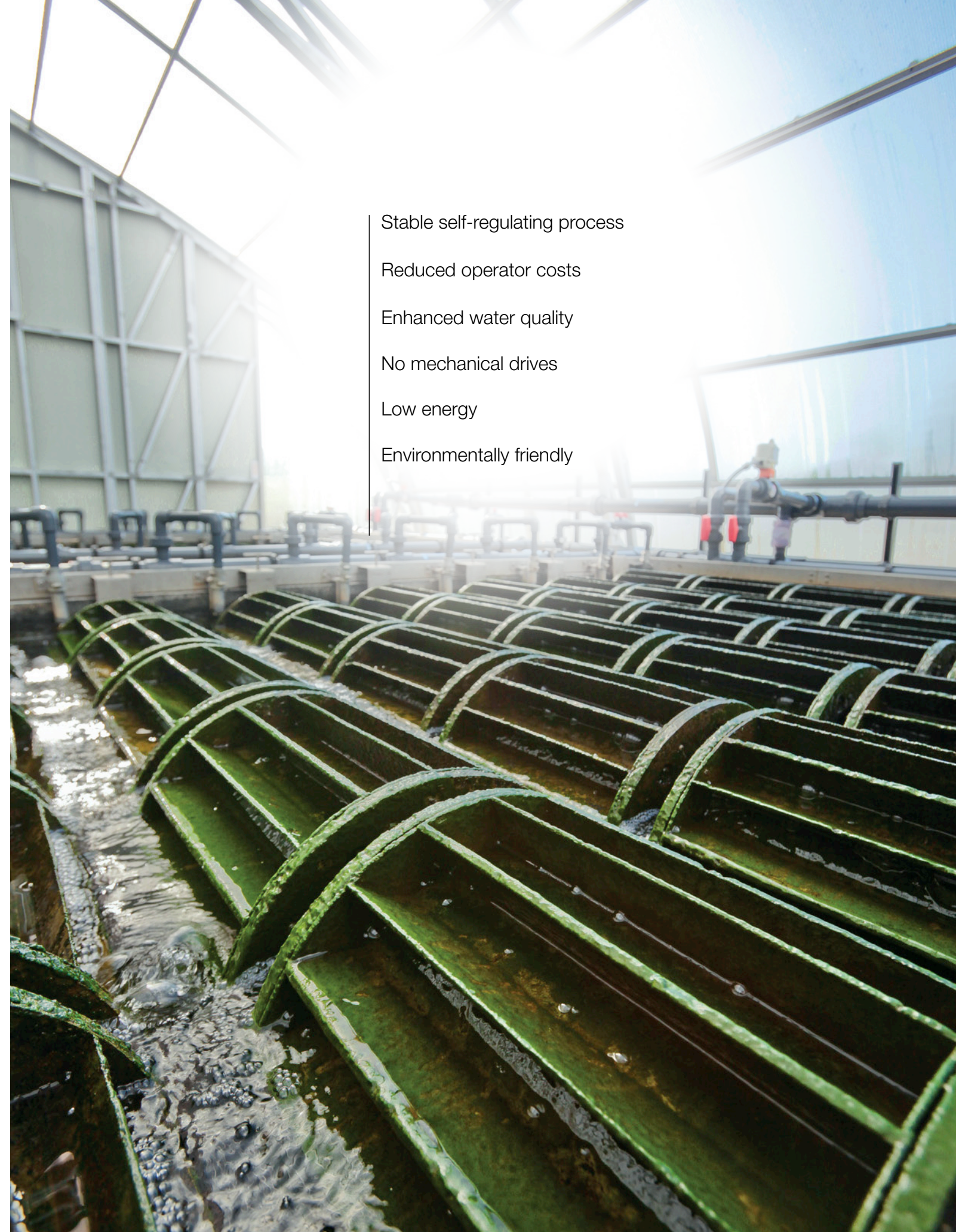
No noise

Cost effective



Algaewheel is a hybrid technology that integrates algae into a proven process to enhance treatment efficiency

algaewheel®



Stable self-regulating process

Reduced operator costs

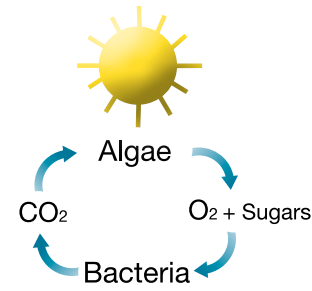
Enhanced water quality

No mechanical drives

Low energy

Environmentally friendly

## Photosynthetic Algal Biofilm

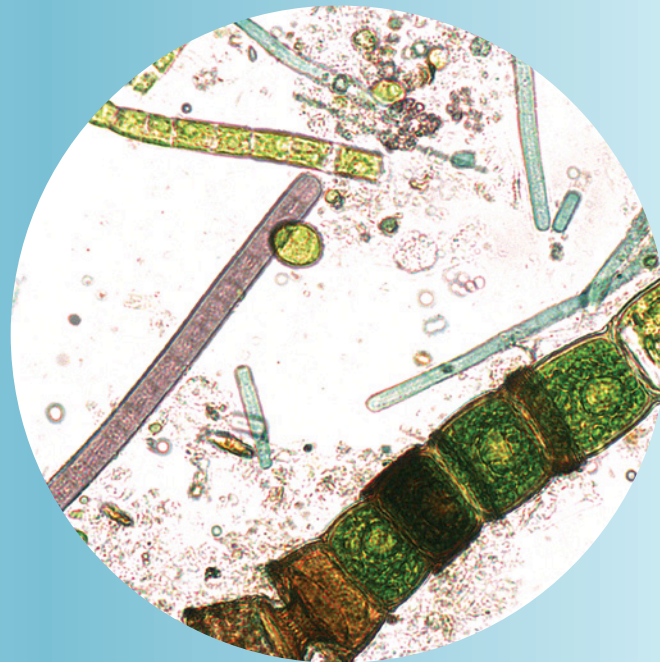


The photosynthetic algal biofilm which forms on the Algaewheels cultivates and sustains a large and diverse algal and bacterial ecosystem that provides enhanced treatment performance.

Over millions of years, algae and bacteria have developed an intricate relationship where the by-products of one group are the inputs for the other. Algae grow on rotating wheels, using light, CO<sub>2</sub> and nutrients. Algae produce oxygen, consume carbon-dioxide, and generate polysaccharides (sugars). Bacteria consume the oxygen and sugars and produce carbon dioxide - completing the cycle.

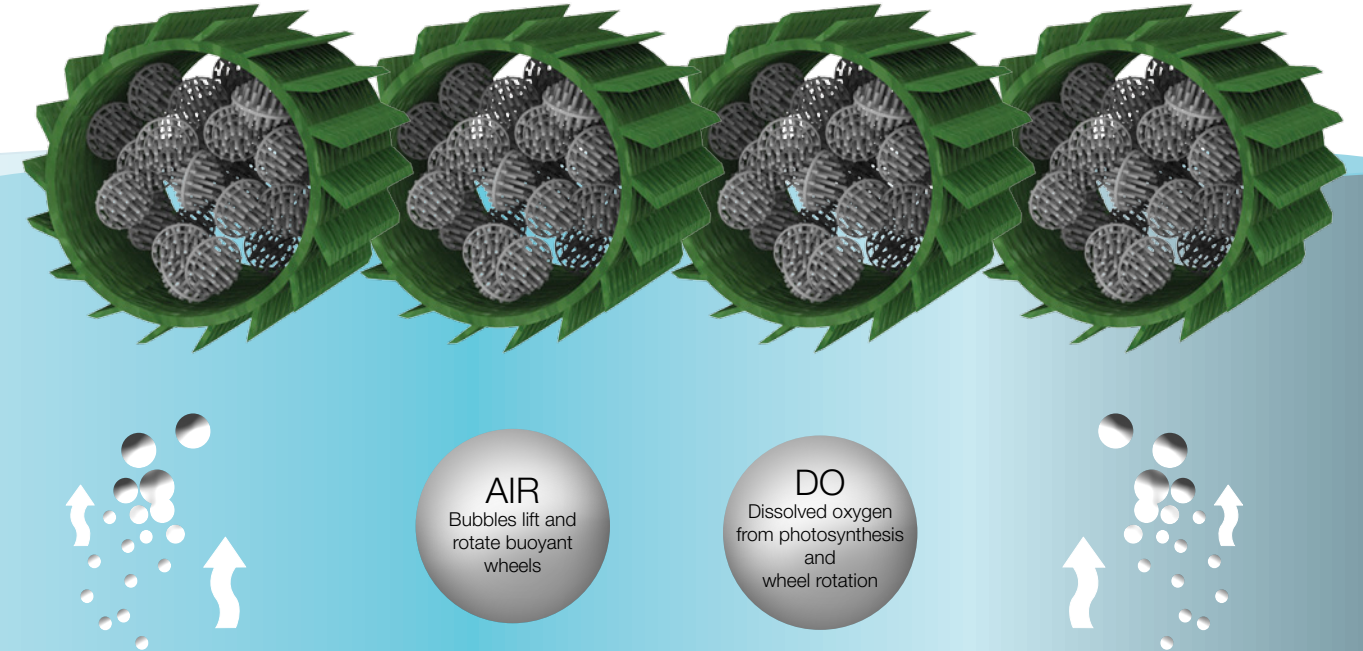
When subjected to light the algal biofilms become saturated with oxygen. When combined with wheel rotation, high dissolved oxygen (DO) levels enhance BOD reduction and nitrification.

A small air blower generates bubbles that lift and slowly rotate the buoyant Algaewheels.



Biofilm containing algae and bacteria at 400x magnification

## Stable, self regulating process



### Symbiotic Biofilm

#### Algae

Grow on wheels using light, CO<sub>2</sub> and nutrients

Host large and diverse bacterial populations

Produce oxygen and polysaccharides (food) for bacterial growth

Polysaccharides also improve solids settlement

#### Bacteria

Grow around the algae and inside the wheels on biomedica

Produce CO<sub>2</sub> - used by the algae

Feed on polysaccharides in low flows

**The synergy between algae & bacteria maintains effective treatment during variable flows and loads**

Algaewheel will optimize your overall treatment performance



- Built in parallel
- Uses existing infrastructure
- Easily expanded
- Built in weeks not months

Summit Lake State Park (DNR) - Retrofit 2014  
Upgrade of failing plant to meet a 10,12,1 effluent limit.

Modular construction  
...simply a smarter way

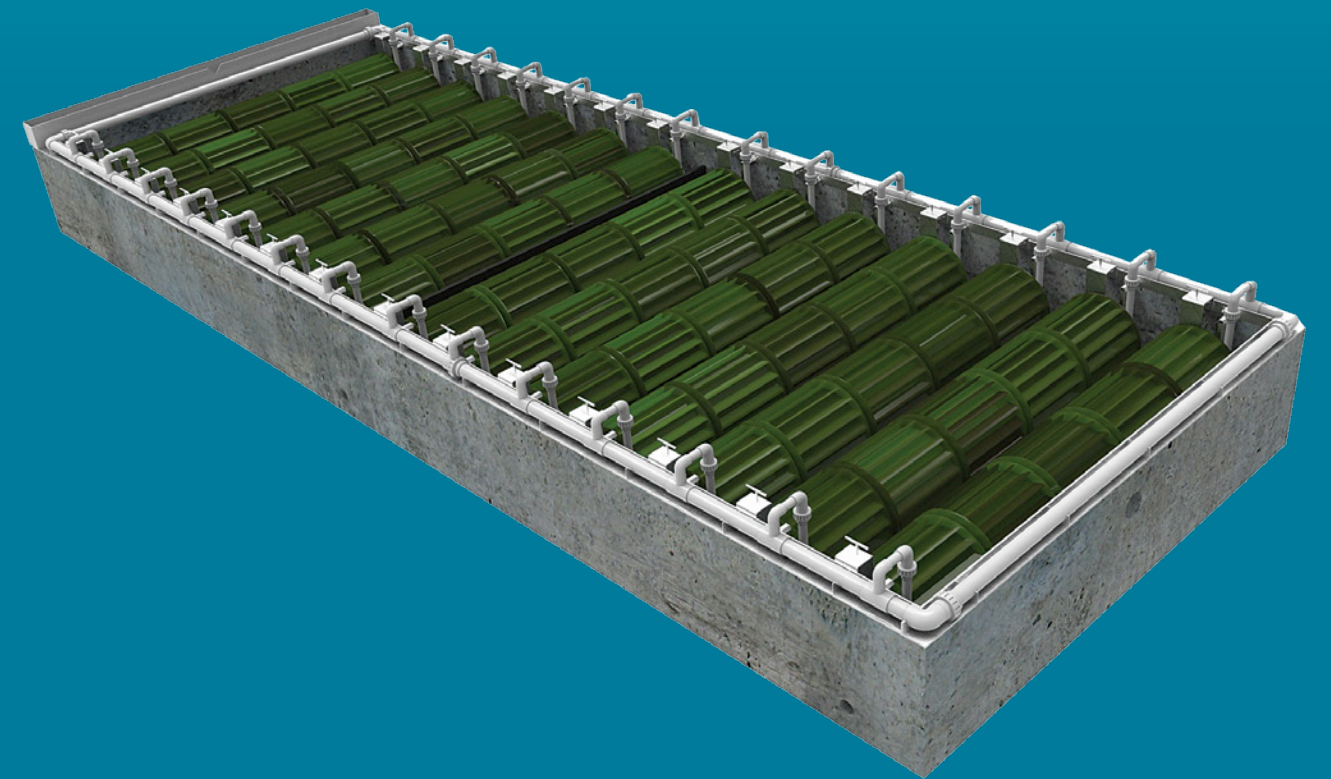


Complete preassembled modules

Factory assembled quality

No scale-up risk

Rapid site installation



**Algaewheel Tank Modules**

Precast concrete tanks (8' x 22') delivered preassembled with Algaewheels and associated components, ready for placement and connection.

[www.algaewheel.com](http://www.algaewheel.com)

**ONE**∞**water**<sup>®</sup>

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