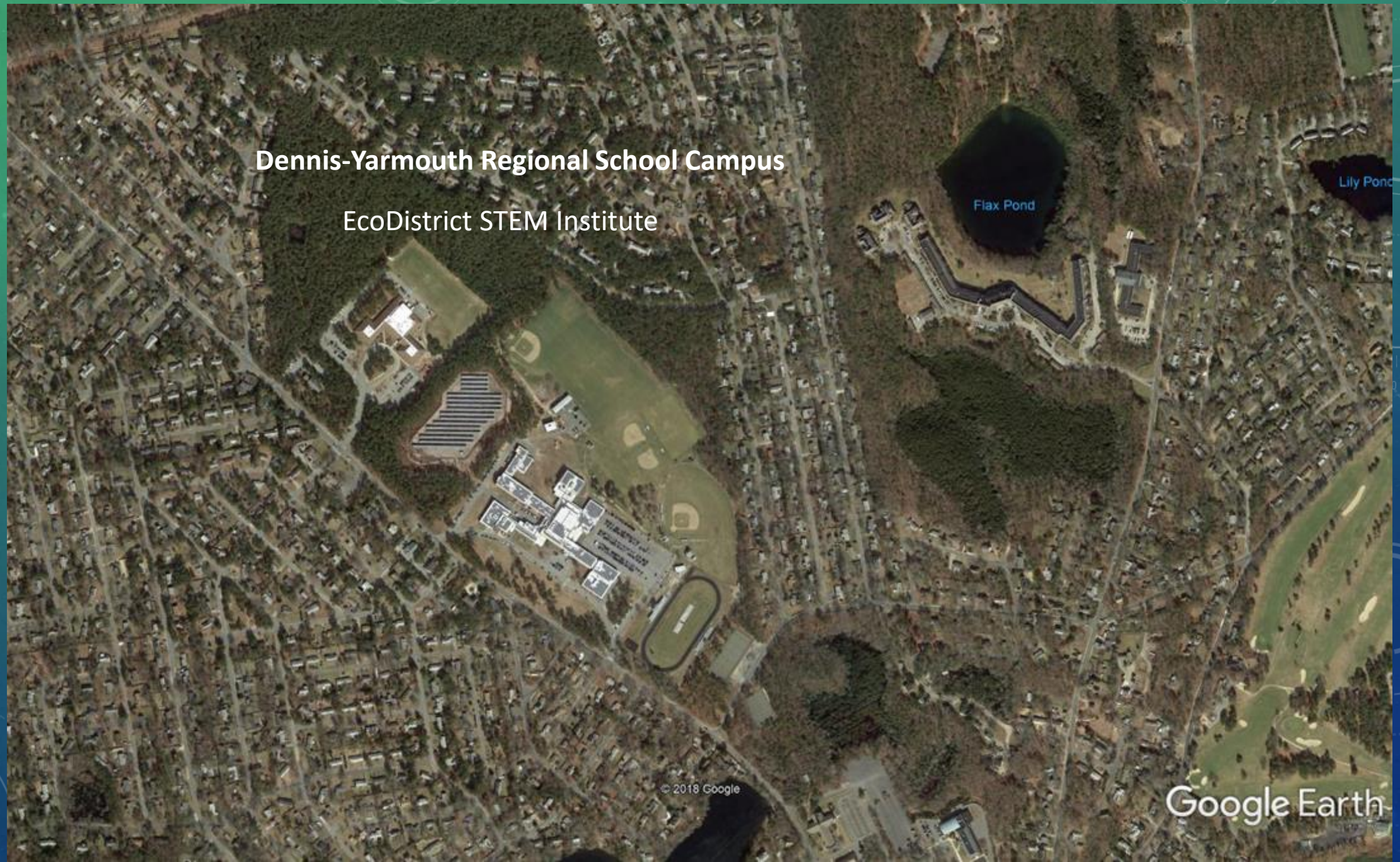
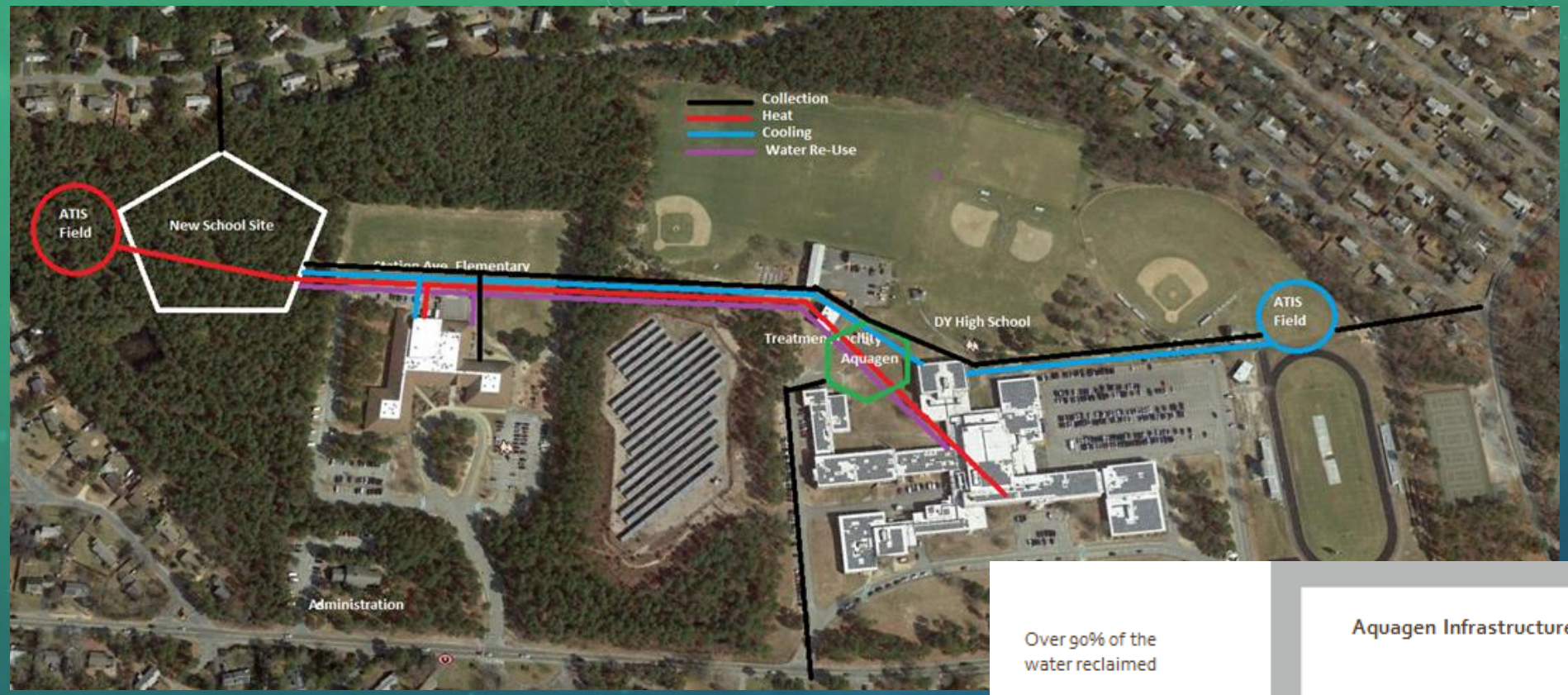

"There are no passengers on spaceship
Earth. We are all crew."


AquaGen Infrastructure Systems
Integrated sustainable solutions
Algae based planetary restoration, one village at a time
www.aquagen-isi.ws


Dennis-Yarmouth Regional School Campus
EcoDistrict STEM Institute
Flax Pond
Lily Pond
© 2018 Google
Google Earth


Existing Sewer Line
Pilot Site
STEM Center and
Watershed Institute
Google Earth



Vacuum based liquid conveyance technology is utilized throughout the installation for environmental sensitivity and process efficiency.

Teaching the students through experiential learning is a key facet of our project vision to prepare them for tomorrow. We've got to train the crew.

Over 90% of the water reclaimed

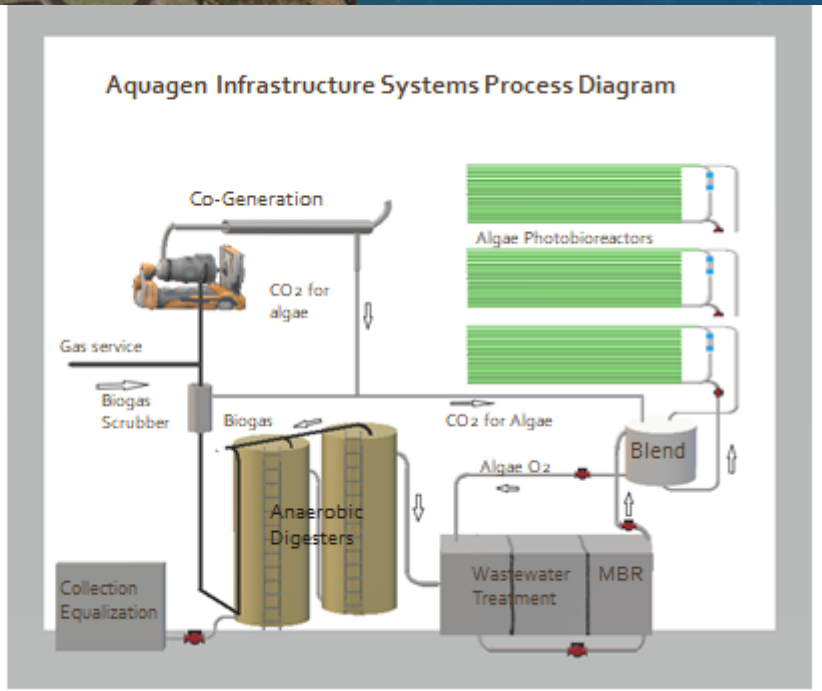
Waste organics to energy

Algae biotech products

Eliminate greenhouse gases

Economic Revitalization

Community resiliency




Attention Humans!
We are here to help
We know how to save the planet,
But we need your help!

US Green Building Council of Massachusetts
"What's Next?" 2019
April 4th 2019

Brian Braginton-Smith, President
Aquagen Infrastructure Systems, Inc.

TURNING WASTEWATER INFRASTRUCTURE INTO RESOURCE RECOVERY AND RENEWABLE ENERGY PLATFORMS

Sustainable infrastructure

Alternative water and energy resources

Alternative fuels feedstock development

ALGAE-WASTEWATER-ENERGY NEXUS

Green Revolution in wastewater transition to the Utility of the Future, Resource Reclamation for resiliency and sustainability

Algae is viewed as a pathway to sustainability, resiliency and highly circular local economic dynamic.

PROBLEM:

- Waste water treatment is expensive, required by law and a pure cost center
- Increasingly stringent regulations are making compliance more difficult and more expensive
- By 2050 half of the worlds population will be experiencing water shortages
- Global Warming is happening, GHG reductions are needed

SOLUTION:

- New proprietary algae-based technology allows simpler process, less mechanical equipment, less cost and much less energy use
- Substantial collateral benefit in the production of renewable energy and valuable by-products while consuming carbon dioxide and producing oxygen
- 70 to 85 percent of the worlds oxygen supply comes from algae

ClearVue Solar Greenhouses
Hydroponics, Vertical Farming

AQUAGEN - ISI

AquaGen Infrastructure Systems

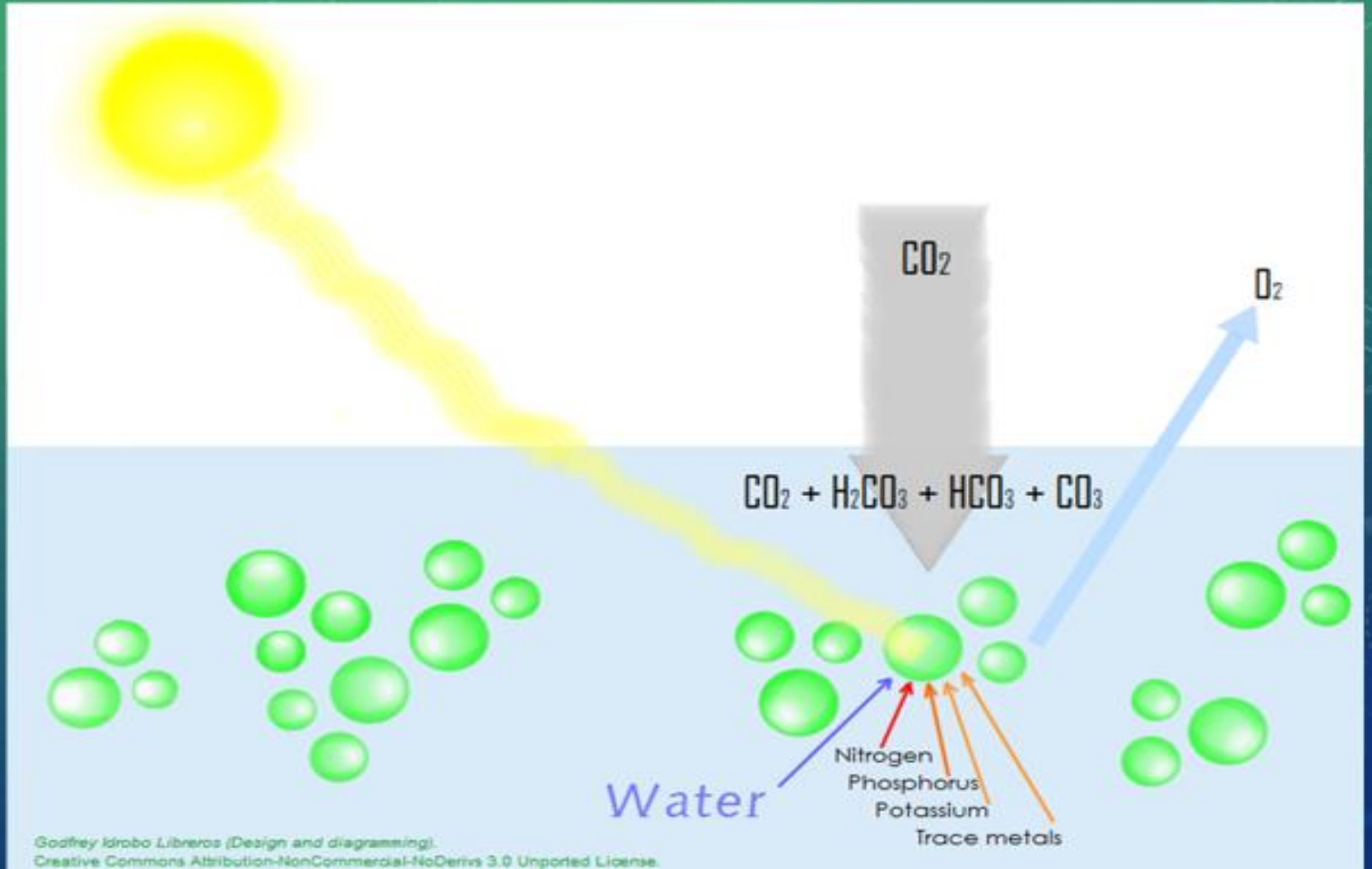
Convert your facility from a wastewater treatment plant to a renewable energy platform.

www.aquagen.isi.ws

Algae based photosynthesis is our main technology

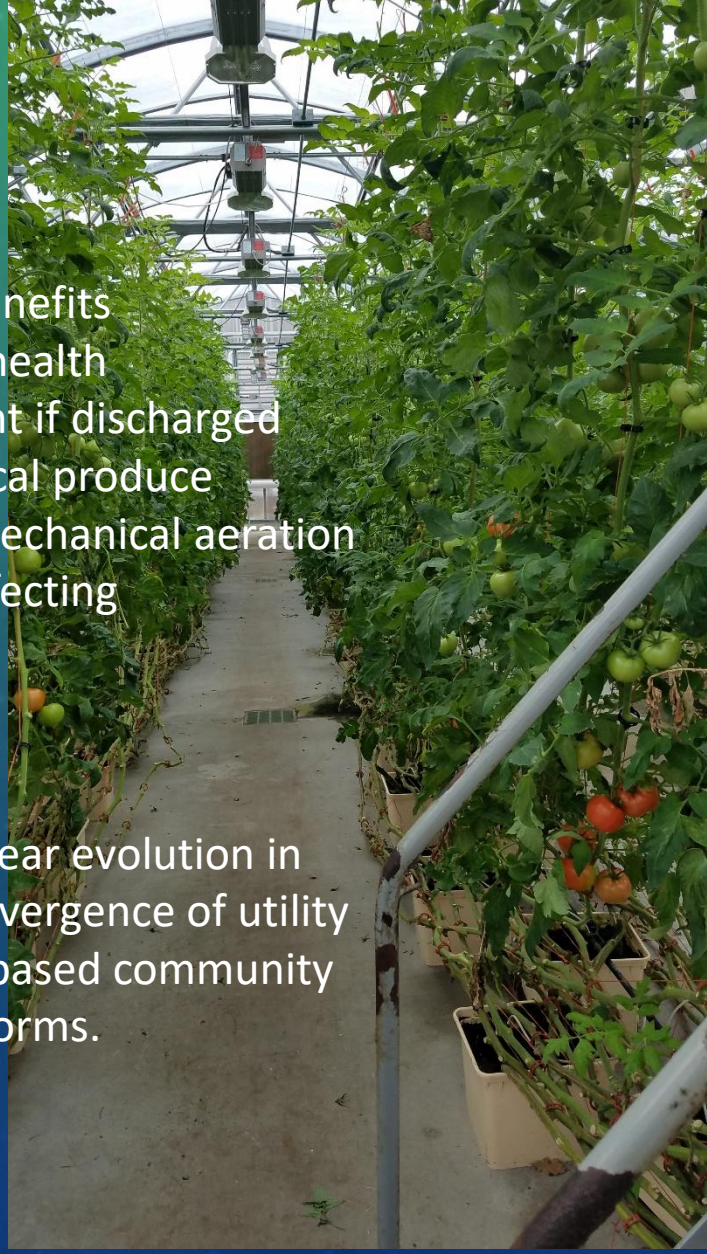
VALUE PROPOSITION:
CHEAPER, GREENER, BETTER!

- AQUAGEN is cheaper, greener, and better than any other waste water technology. Turns waste water into a renewable energy resource. We are an agricultural based technology.
- CUSTOMERS: 20% less in construction cost and 60% less in operating cost with superior water treatment quality
- CONSUMERS: Cleaner, greener, better solution for more sustainable communities, with lower utility costs, strong local circular product economics



High Dissolved Oxygen has many benefits

- Increased crop yield and health
- Better for the environment if discharged
- Creates added value in local produce
- Eliminates the need for mechanical aeration
- May actually be self disinfecting



We are witnessing a 100 year evolution in infrastructure and the convergence of utility functions into holistically based community sustainable resource platforms.

Aerobic conditions are an important part of almost all conventional treatment systems. The method for providing oxygen for this process is typically mechanical aeration that requires expensive machinery that consumes vast amounts of energy blowing bubbles of air through the wastewater. Only 21% of this is oxygen. Our atmosphere is composed mostly of nitrogen. 4% of our national energy budget is spent blowing bubbles through wastewater

We utilize algae photosynthesis which consumes carbon dioxide and generates pure oxygen in solution in the water for our biological oxygen needs.

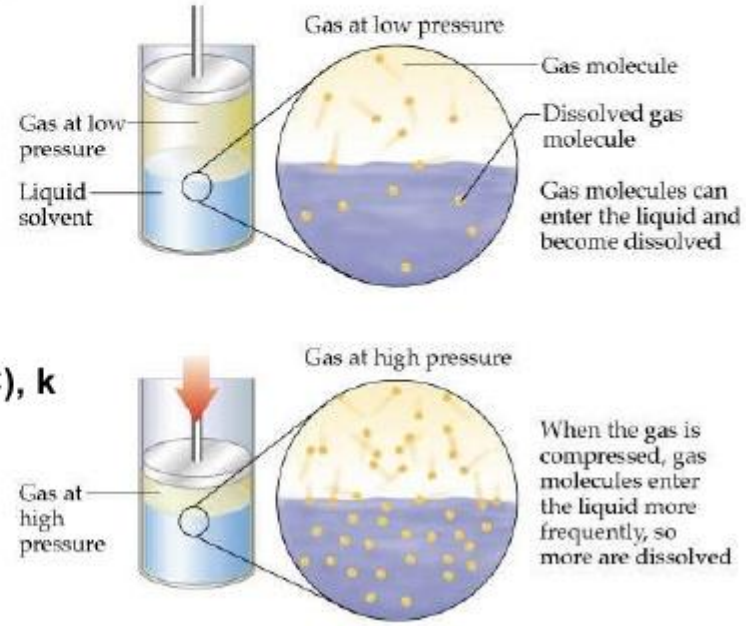
Henry's Law

The effect of partial pressure on solubility of gases

At pressure of few atmosphere or less, solubility of gas solute follows Henry Law which states that the amount of solute gas dissolved in solution is directly proportional to the amount of pressure above the solution.

$$c = k P$$

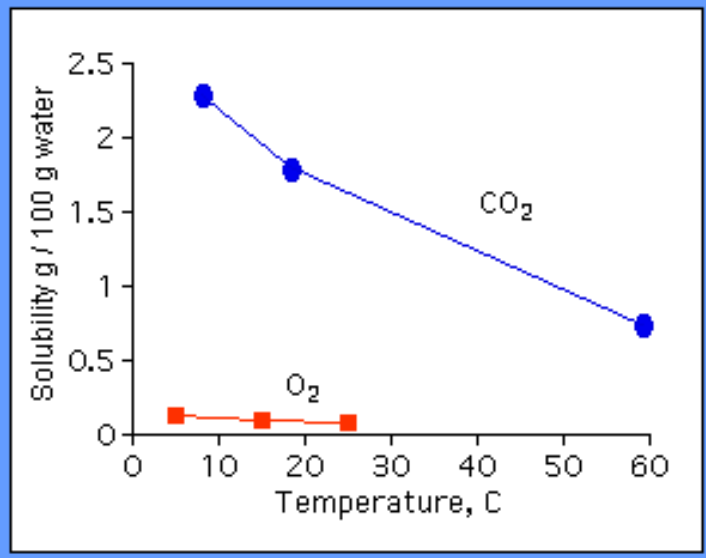
c = solubility of the gas (M)
k = Henry's Law Constant
P = partial pressure of gas



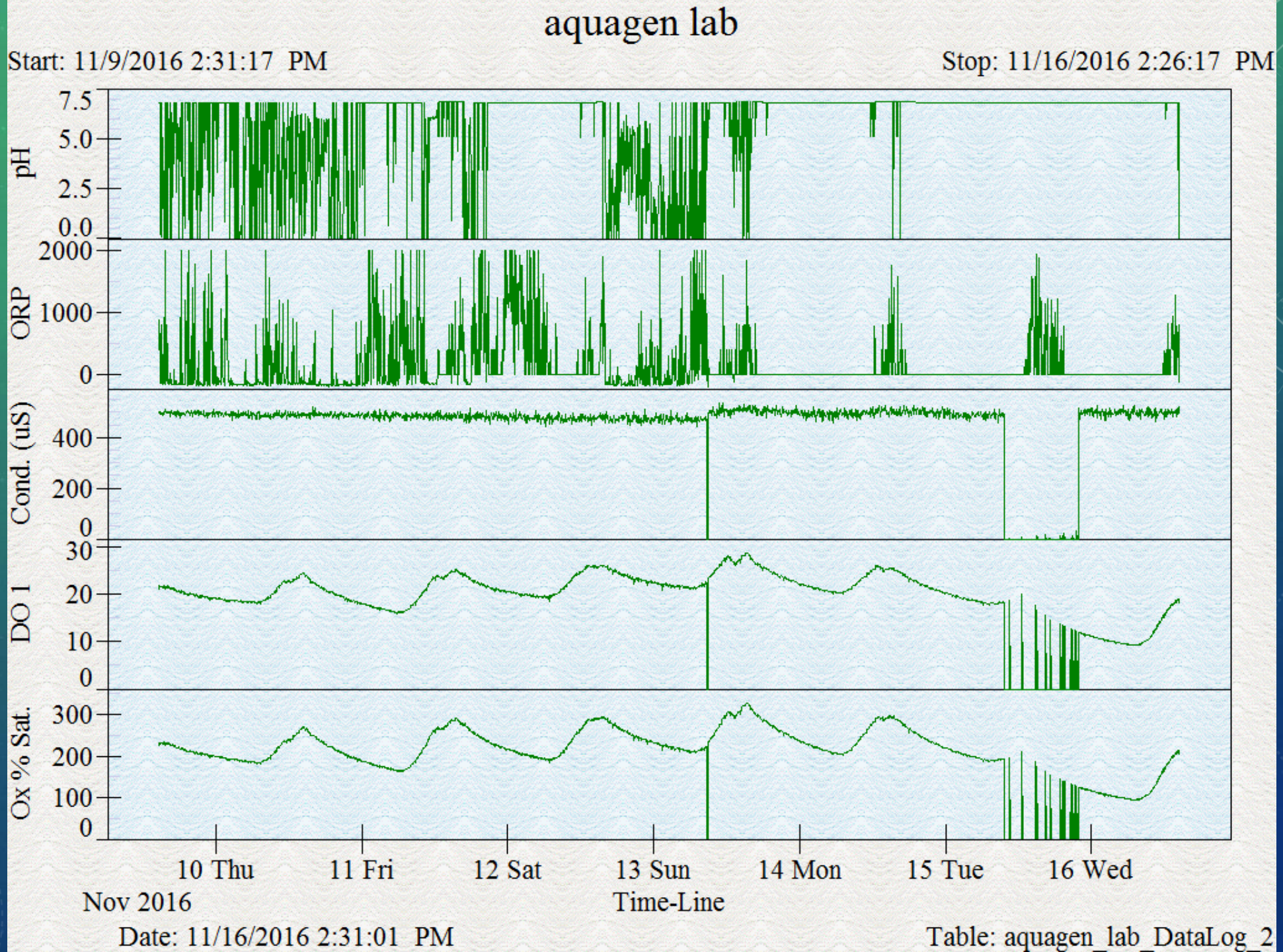
Henry's Law Constants (25°C), k

N_2	$8.42 \cdot 10^{-7}$ M/mmHg
O_2	$1.66 \cdot 10^{-6}$ M/mmHg
CO_2	$4.48 \cdot 10^{-5}$ M/mmHg

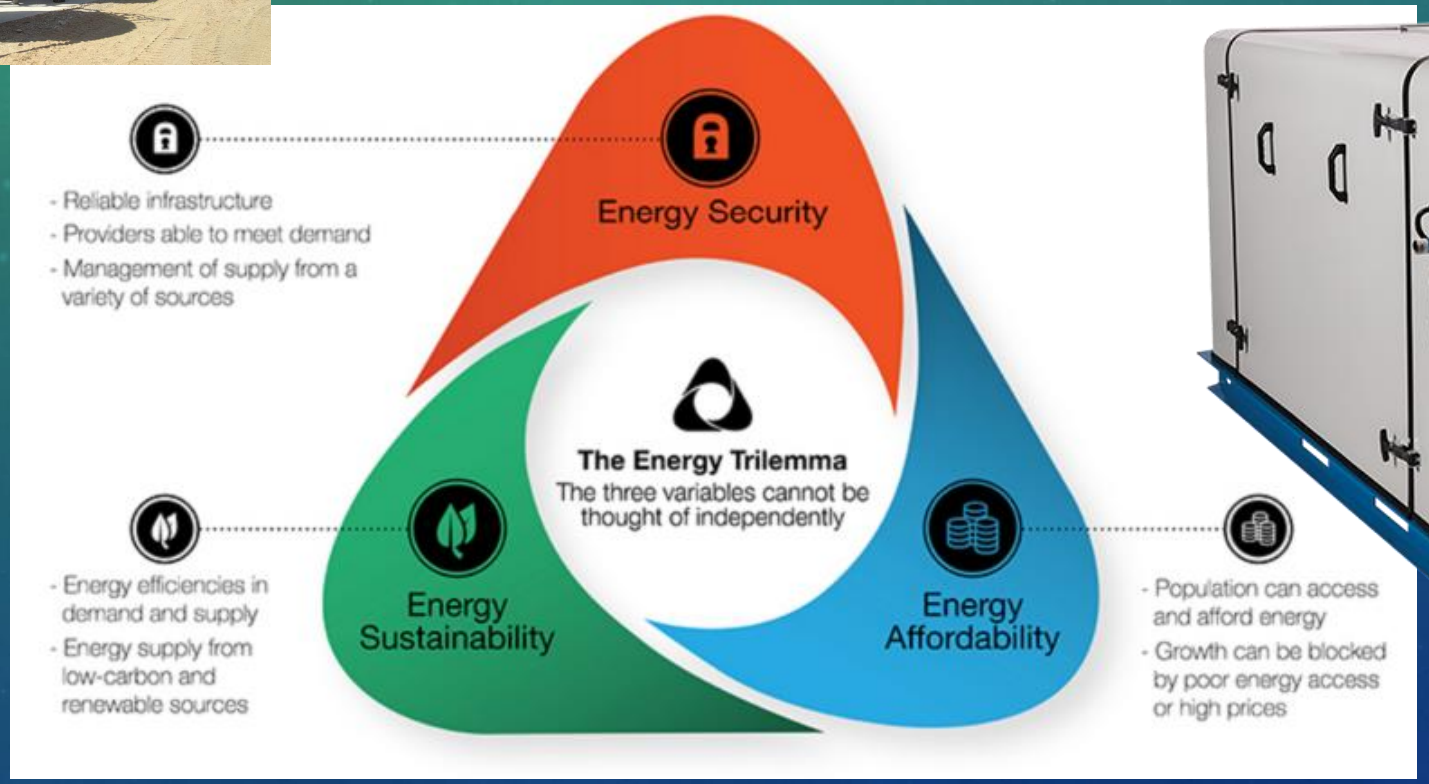
Solubility of Gases vs. Temperature



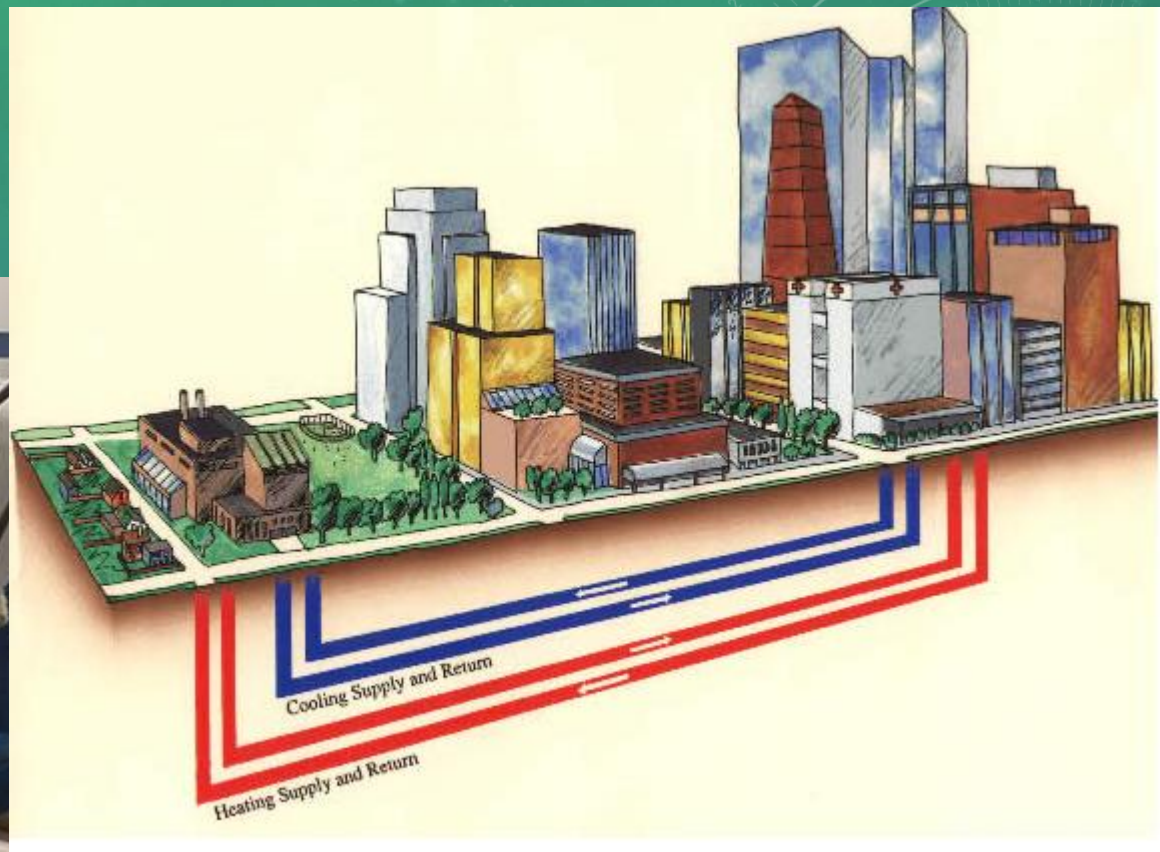
C. Ophardt, c. 2003


aquagen lab
Start: 11/9/2016 2:31:17 PM
Stop: 11/16/2016 2:26:17 PM
pH
7.5
5.0
2.5
0.0
ORP
2000
1000
0
Cond. (uS)
400
200
0
DO 1
30
20
10
0
Ox % Sat.
300
200
100
0
10 Thu
11 Fri
12 Sat
13 Sun
14 Mon
15 Tue
16 Wed
Nov 2016
Time-Line
Date: 11/16/2016 2:31:01 PM
Table: aquagen_lab_DataLog_2


AQUANOS
LITERALLY GREEN

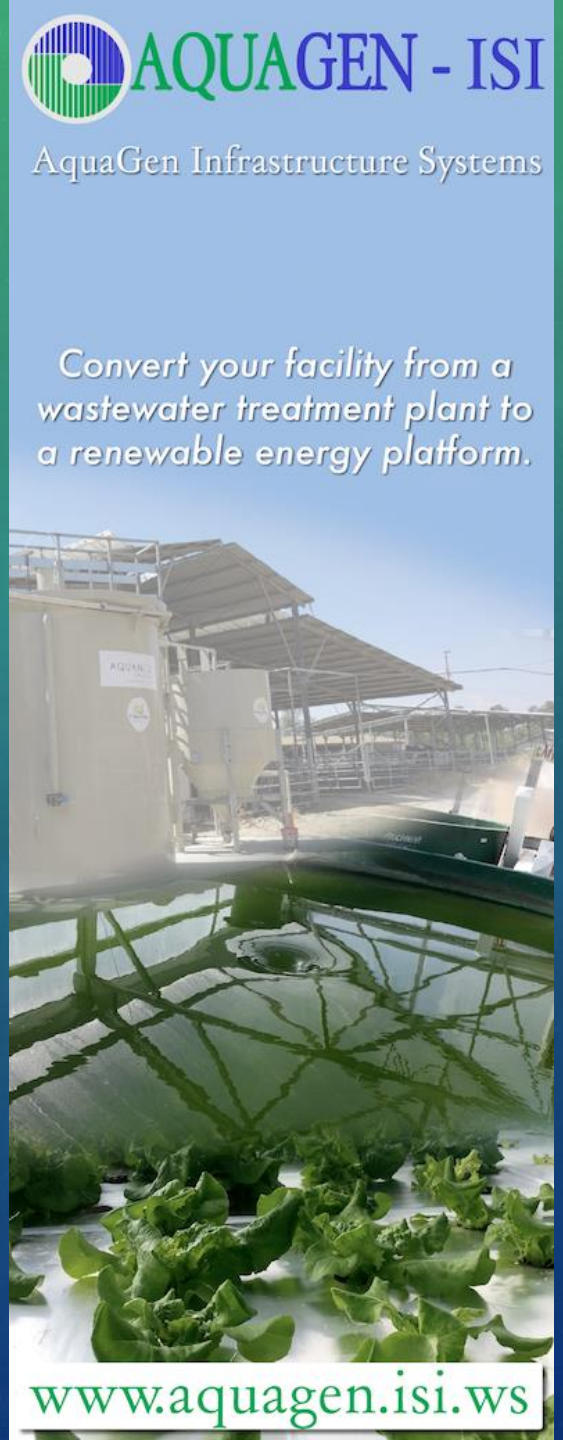

- Reliable infrastructure
- Providers able to meet demand
- Management of supply from a variety of sources
Energy Security
The Energy Trilemma
The three variables cannot be thought of independently
- Energy efficiencies in demand and supply
- Energy supply from low-carbon and renewable sources
Energy Sustainability
Energy Affordability
- Population can access and afford energy
- Growth can be blocked by poor energy access or high prices


AEGEN
ThermoPower


Cooling Supply and Return
Heating Supply and Return

Project Bar
AQUANOS
LITERALLY GREEN
www.aquanos.net


weftec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GWi
GLOBAL WATER INTELLIGENCE MAGAZINE
WATER IS OUR CONCERN
3
MARCH 2018
FROM RED TIDES TO THE GREEN REVOLUTION
ALGAE SURFS A WAVE OF POPULARITY INTO THE WASTEWATER TREATMENT MARKET
SUEZ PLAYS THE GAME OF THRONES
FRENCH GIANT TURNS THE CORNER AS TOP BRASS SETTLE INTO NEW ROLES
HYFLUX LEFT HIGH AND DRY
INTEREST PAYMENTS RISE AS ASSET SALES FLOUNDER AT STRUGGLING DEVELOPER

We are just taking a page from the planet earth operating manual on algae and atmospheric gas balance

Attention Humans!

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But we need your help!

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Algae based planetary restoration, one village at a time

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