



Clean Water - A Global Solution

Los Angeles

Hong Kong

Zürich

Brisbane

Markus J Lenger

CEO and CSO CleanBlu Inc.

markuslenger@cleanblu.com

+1 - 949 - 200 - 6226

Areas of Expertise



ASIA 亚洲 アジア 아시아
CleanBlu®

Nuclear Decontamination
核去污

Who We Are



Before Treatment July 1997



After Treatment May 1998

Sewage Lagoons
American Farm School Thessaloniki Greece

- ☑ CleanBlu[®] is a company with over 25-years experience in the design, engineering and deployment of innovative patented solutions in water and wastewater processing and soil decontamination.
- ☑ CleanBlu[®] and it's sister companies have made numerous headlines by continually pioneering new innovations both locally and around the world.
- ☑ CleanBlu[®] is committed to helping provide a healthier and sustainable environment for generations to come. |

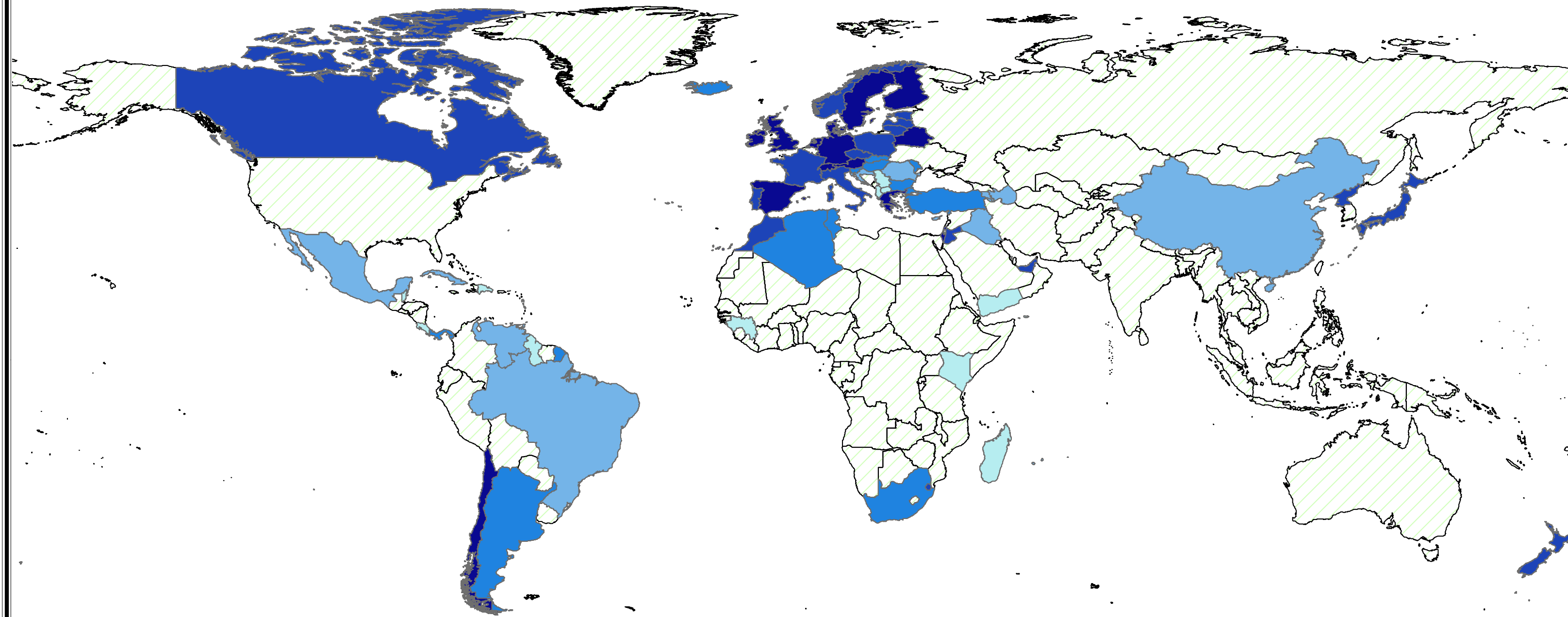


Global Water Crisis





Population Connected to Wastewater Treatment



Units: %

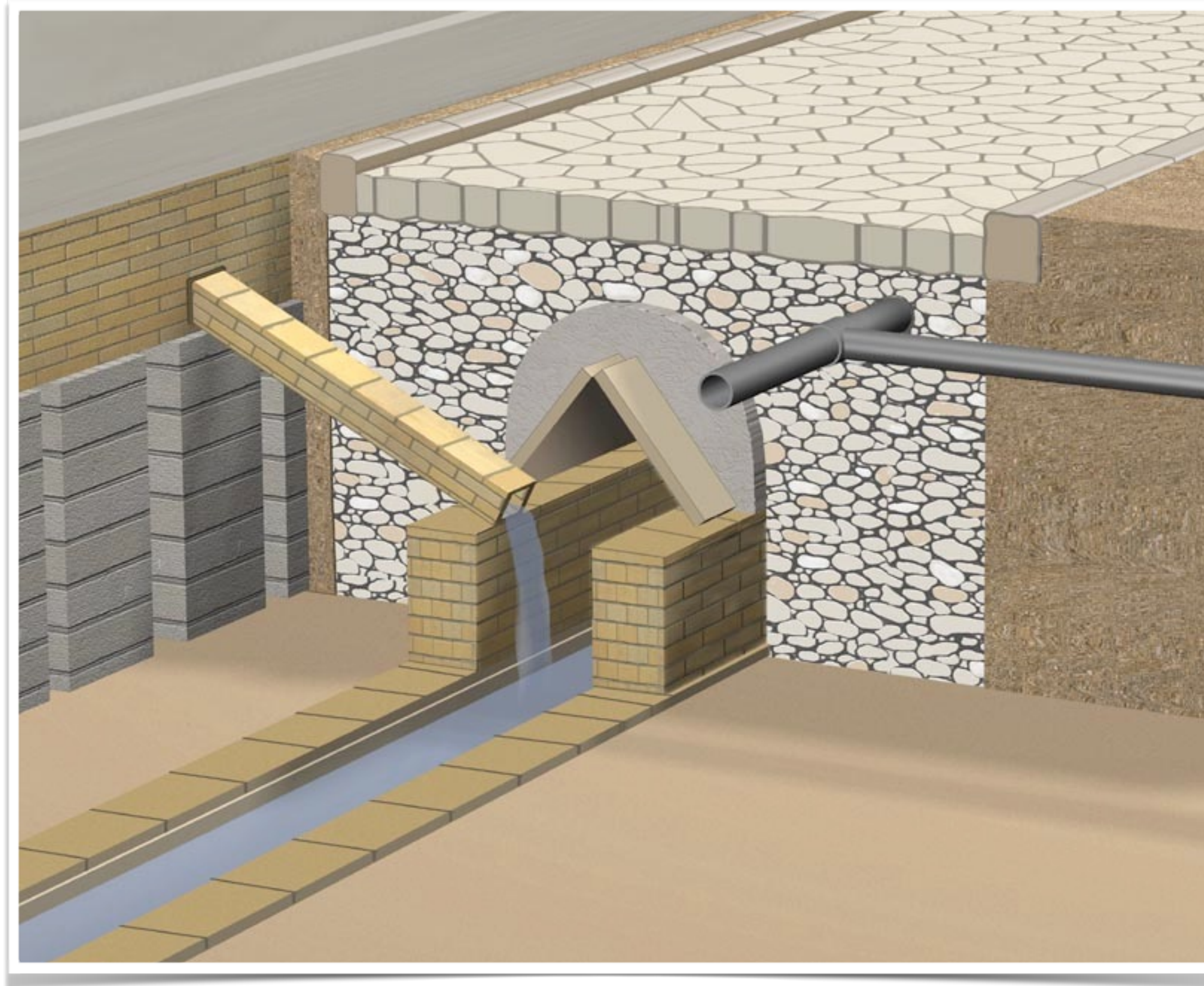
*Note that data correspond to the latest year available.



Data Source: UNSD
Map Source: UNGIWG

Last Update: March 2011
Map available at: <http://unstats.un.org/unsd/environment/qindicators>

Outdated Centralized Wastewater Processing



- 2000 year old Roman technology
- Expensive to Build and Maintain
- Expensive to Transport Wastewater
- Inefficient use of Energy
- Large Carbon Footprint
- Public Health Hazard

Innovative Decentralized Wastewater Treatment



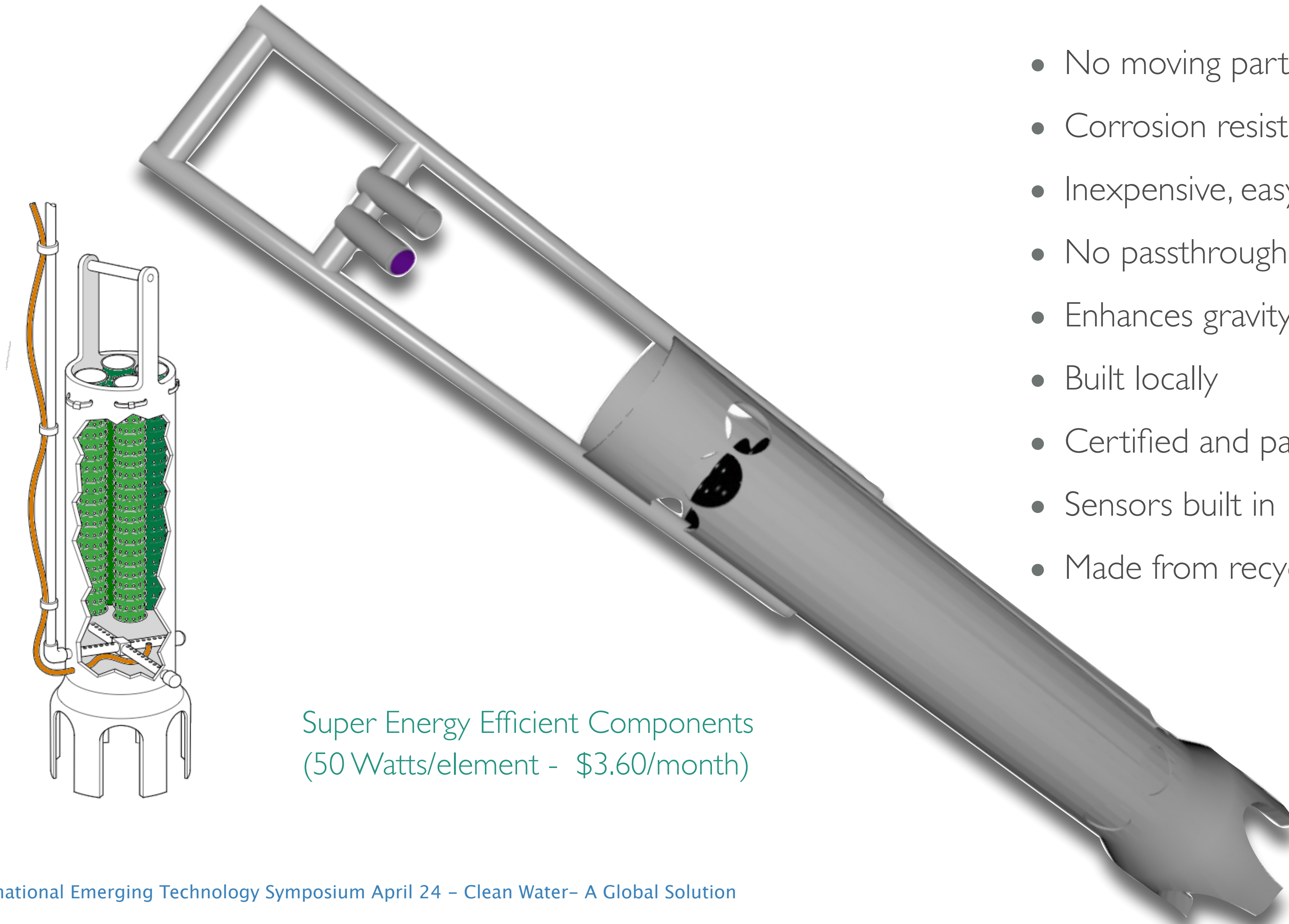
- Recycle Wastewater Locally
- Efficient use of Energy
- Small Carbon Footprint
- Reduce Public Health Hazard
- No Sewers to build or maintain
- No single point of failure
- No Transportation of Wastewater

Modular Treatment Plant



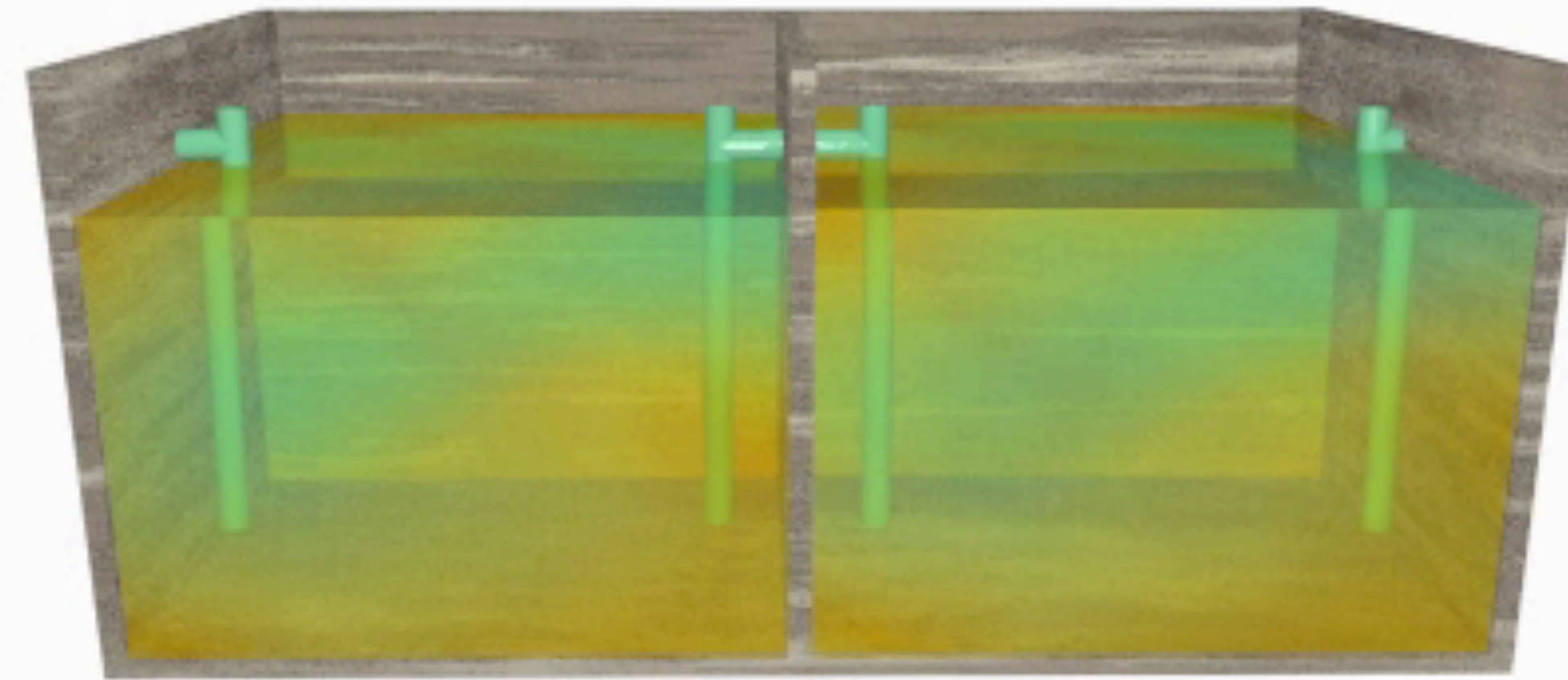
BioElement

- No moving parts or clogging
- Corrosion resistant - contains no metal - all plastic
- Inexpensive, easy to clean, service and replace
- No passthrough
- Enhances gravity separation
- Built locally
- Certified and patented
- Sensors built in
- Made from recycled materials - 100% recyclable



Super Energy Efficient Components
(50 Watts/element - \$3.60/month)

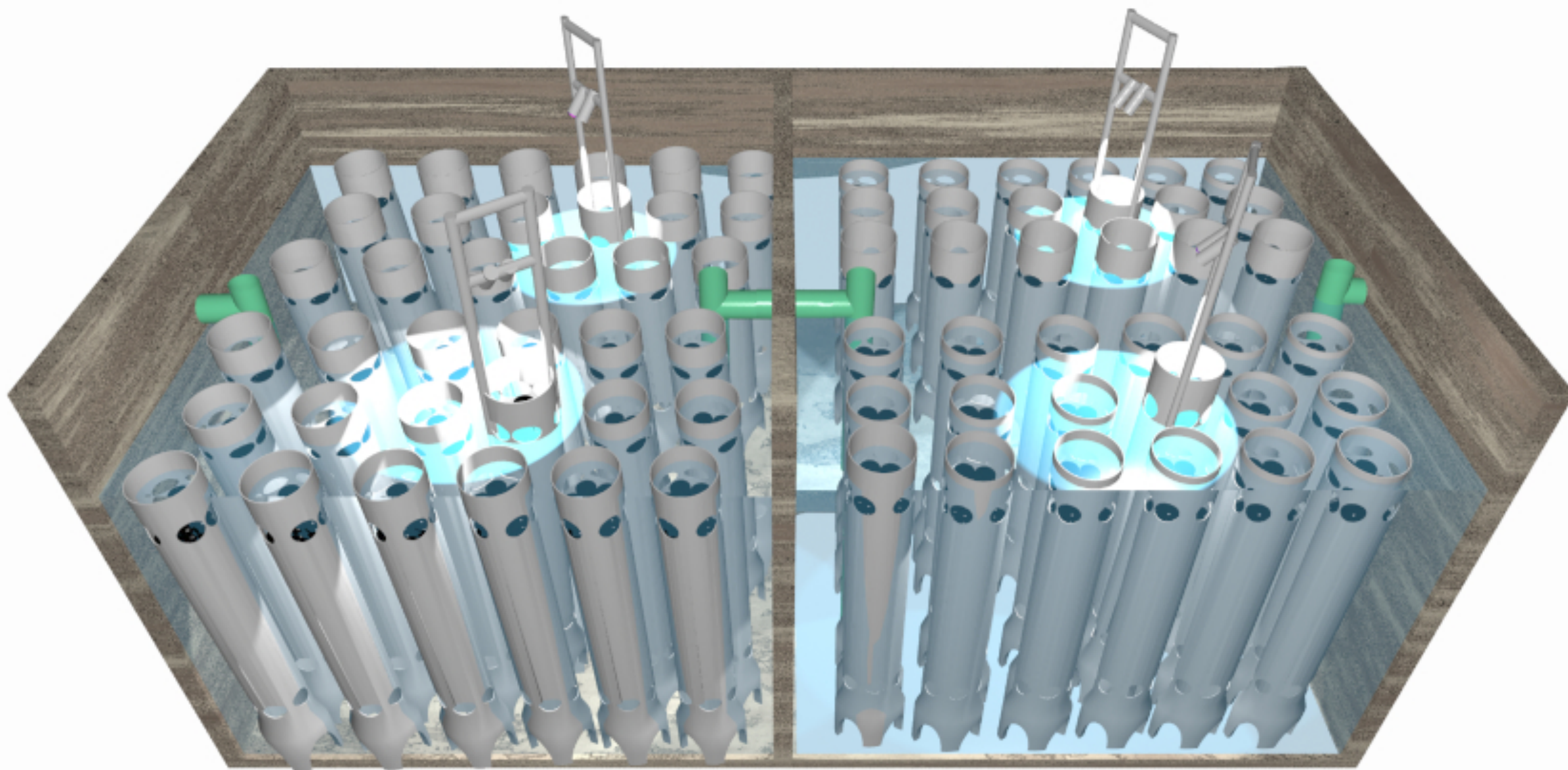
Easy Drop-in Installation



Live view and Time Lapse

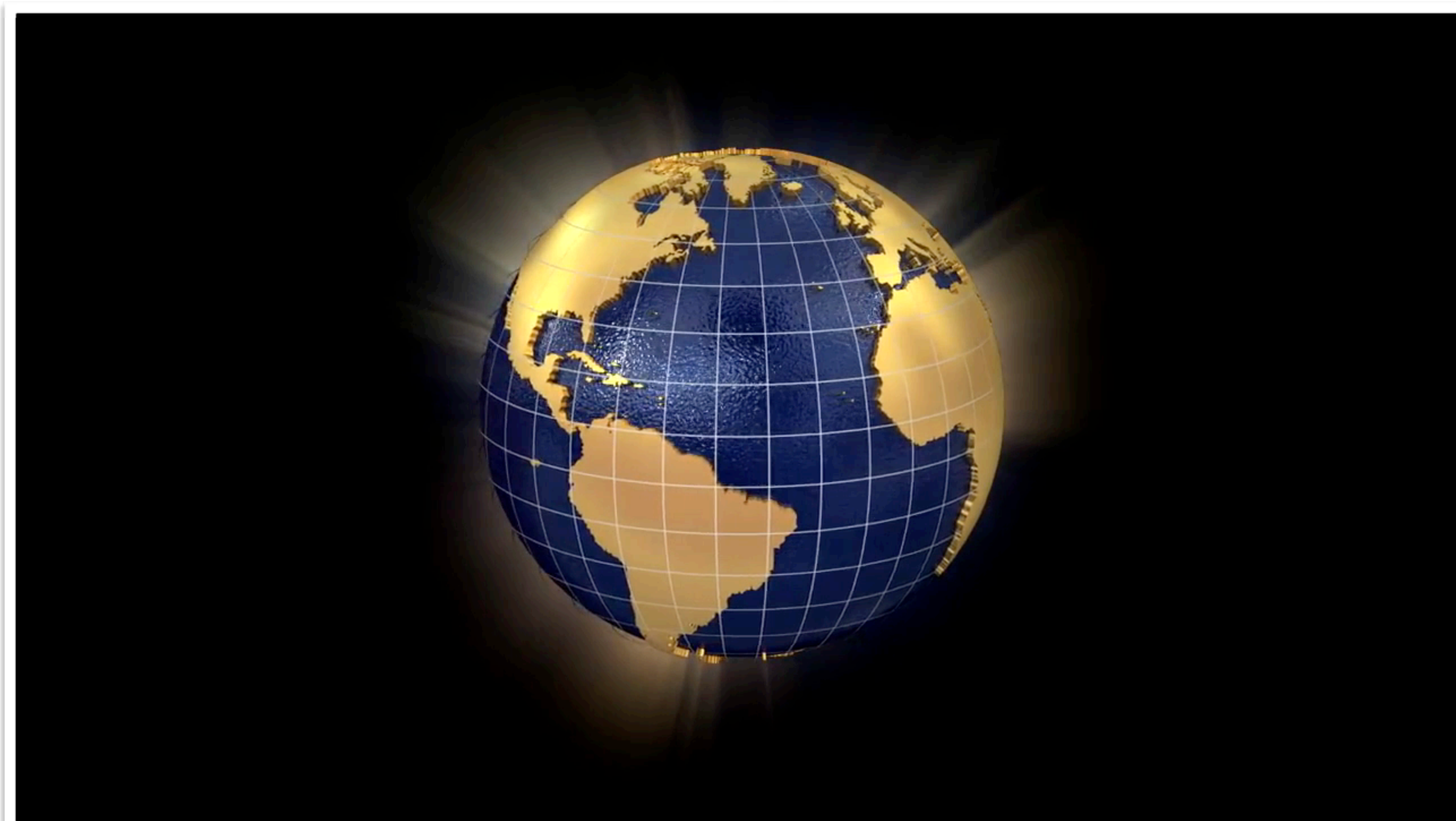


Low Cost Decentralized Wastewater Treatment



- Reuse all wastewater
- Power independent -runs off 2 solar panels or 1 small wind turbine
- Computer controlled, web enabled, self-monitoring
- low-skill maintenance
- Solar powered sterilization module produces drinking water
- No chemicals needed - fully biological
- No COD transfer
- >95% of system can be built locally
- 100% Reusable and recyclable Bioelements
- Remote viewing and controlling of a single smart phone

Global Implementation



Water in China and Laos

China



- Population 1.365 billion
- Total Water Consumption = 554 billion m³ (146 trillion gal)
- Total Wastewater Produced = 53.7 billion m³ (14 trillion gal)
- 67.5% are not connected to a wastewater treatment system
- 54.3% are not connected to a sewer system (Source UN)
- Spending US\$69 billion a year on Water Treatment (WHO)
- Per capita water resource only 25% of world average
- Annual usage per inhabitant 414 m³/year (110,000 gal/year)

Laos



- Population 6.2 million
- Total Water Consumption = 4.2 billion m³ (1,01 trillion gal)
- Least developed country rich in water resources
- 72% of population lives in the urban areas
- 55.2% have no access to Sanitation (Source WHO)
- 47% of population has no access to improved water source
- Annual usage per inhabitant 740m³/year (196,000 gal/year)

China Treatment Costs



Parameter	Usage	Cost RMB	Cost US\$
Electricity Total	9,200 kWh/day	7,423	1,200
Aeration	2,188 kWh/day	1,172	189
Sludge Processing	964 kWh/day	781	126
Pumps	4224 kWh/day	3,421	552
PAM Flocculant Polyacrylamide	25 kg/day	750	122
PAC Polymer Polyaluminium Chloride	0.5 ton/day 500 kg/day	385	63
Sludge Disposal	36 tons/day @ 0.0376 yuan/ton	1.35	0.2
Total Cost Energy and Chemicals		8,600	1,390

Cost	RMB	US Dollar	Per
Power	0.81	0.127	kWh
PAM	30,000	4,833	Ton
PAC	770	125	Ton

Shenzhen China



Shenzhen Project



DEWATS Advantages



Microbes in a box

- ✓ Lower cost of Wastewater Management/Maintenance to customer
- ✓ Level Monitoring and Alarming, Live Video Feed, Data Logging
- ✓ Smart System / Self Regulating - monitored via iOS App
- ✓ First in Industry Fuel Stabilization, Purification and Recovery
- ✓ Odor Elimination (fully aerobic)
- ✓ No Pumping, Excavate for Fuel Extraction Only
- ✓ Provides sustainable option to landfill disposal
- ✓ Provides unobtrusive maintenance cycle that is noiseless and odorless
- ✓ Smart Cities ready

Food Service Establishments

- FSE : Food Service Establishment, including hotel, restaurant, canteen, food processing factory etc.
- Solution for both Yellow-grease and Brown-grease.
- Yellow-grease: frier oil. It can be turned into biodiesel via a straight forward 2-step chemical process
- Brown-grease: also known as FOG, fats, oils and grease, is converted to BioFuel via a 2-step chemical process.



Fuel Harvesting



Water



Biofuel



- ☑ Converts Hydrocarbons including both brown and yellow grease
- ☑ Sulfur reducing microbes produce ultra low sulfur fuel
- ☑ Prevents Hydrolysis, reduces phosphates and heavy metals
- ☑ Treats the 80% water content of brown-grease inside the waste enclosure
- ☑ Pathogen elimination due to aerobic environment
- ☑ No need to pump and haul 80% wastewater, only biofuel
- ☑ No odor and full monitored alarming for customer
- ☑ Auto fuel recovery dispatch function via email or web



Highest Grade Biofuel available – far exceeding B-100 Biofuel Standard

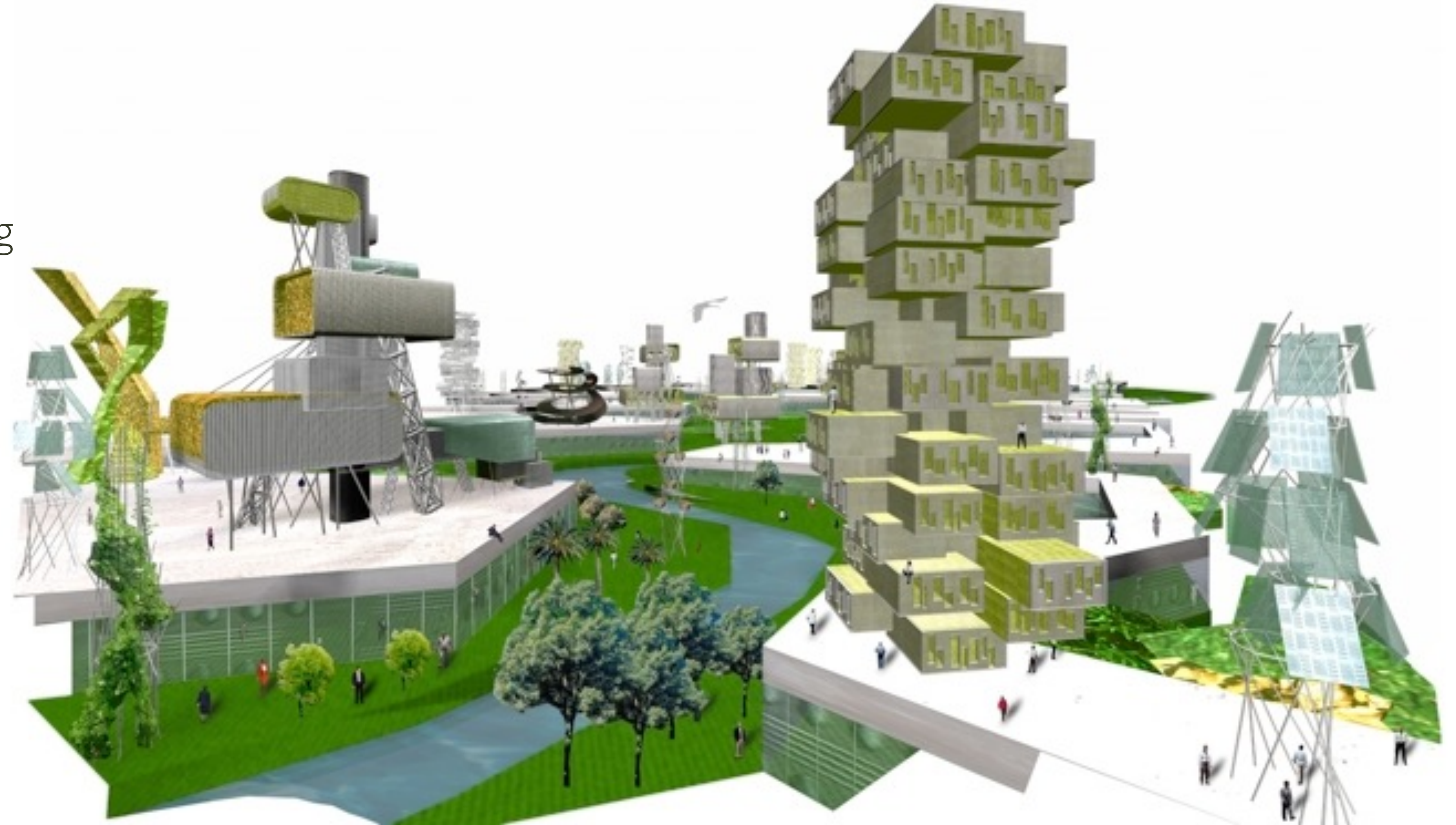
BioFuel vs Oil Production

Biofuel Production from Brown Grease using CleanBlu®

	10,000 gal Grease Interceptor	Install total Cost	Microbes Monitoring Maintenance	Income from CleanBlu paid by Customer	ROI in month
Average Cost of CleanBlu	15,000	3,000	1,200	14,400	< 17
Biofuel produced annually	Total Brown Grease recovered (gal)	Amount of Biofuel 5%	Revenue of Biofuel \$ 3.65/ gal	Revenue of Biofuel \$ 3.65/ gal	Combined ROI in month
(recovered every 60 days)	60,000	3,000	10,950	24,950	9
	Total Brown Grease recovered (gal)	Amount of Biofuel 5%	Revenue of Biofuel \$ 3.65/ gal	Revenue of Biofuel \$ 3.65/ gal	
Total Biofuel produced over compared well lifetime (10 years)	600,000	30,000	109,500	249,500	
Total Barrels produced	1,429				
Cost of CleanBlu plus Install	18,000				
Cost of microbes etc.	12,000				
Cost of fuel pumping	15,000				
Total Cost per Barrel	\$31.50				
Total revenue per Barrel	\$174.60				
Net Revenue per Barrel	\$143.10				

Sustainable Cities

- Capture and recycle all water
- Compost solid waste into energy
- Solar, wind and geothermal energy harvesting
- Self contained vertical farming
- Smart energy and communication grids
- Zero emission rapid public transport system
- Networked smart buildings
- Green spaces and bio-filtering
- Automated environmental monitoring
- Self regulating

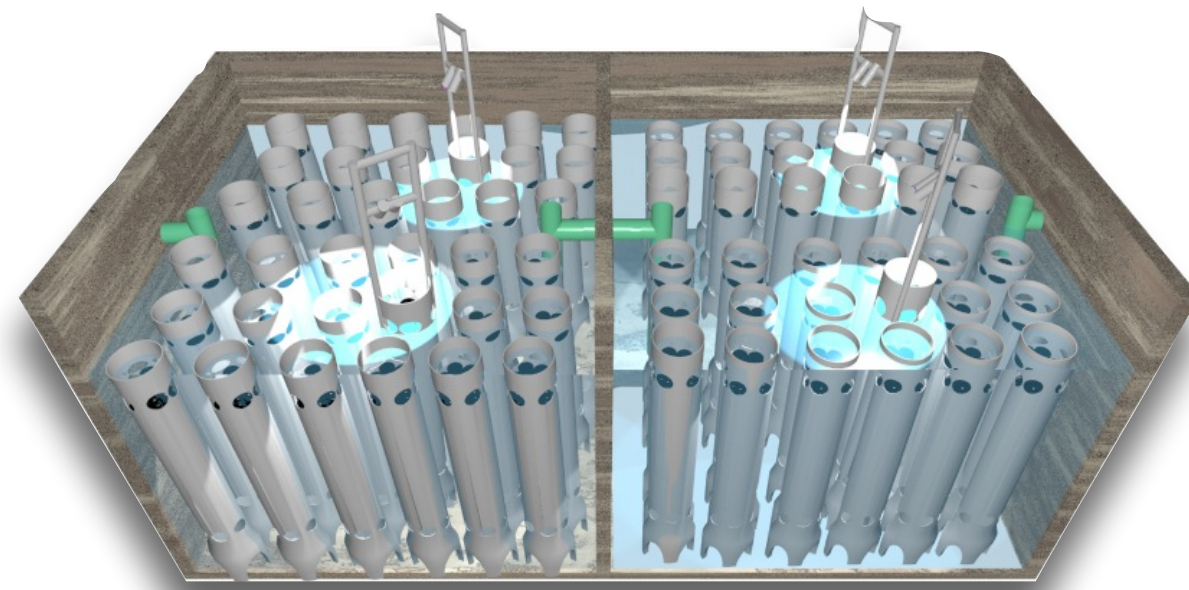


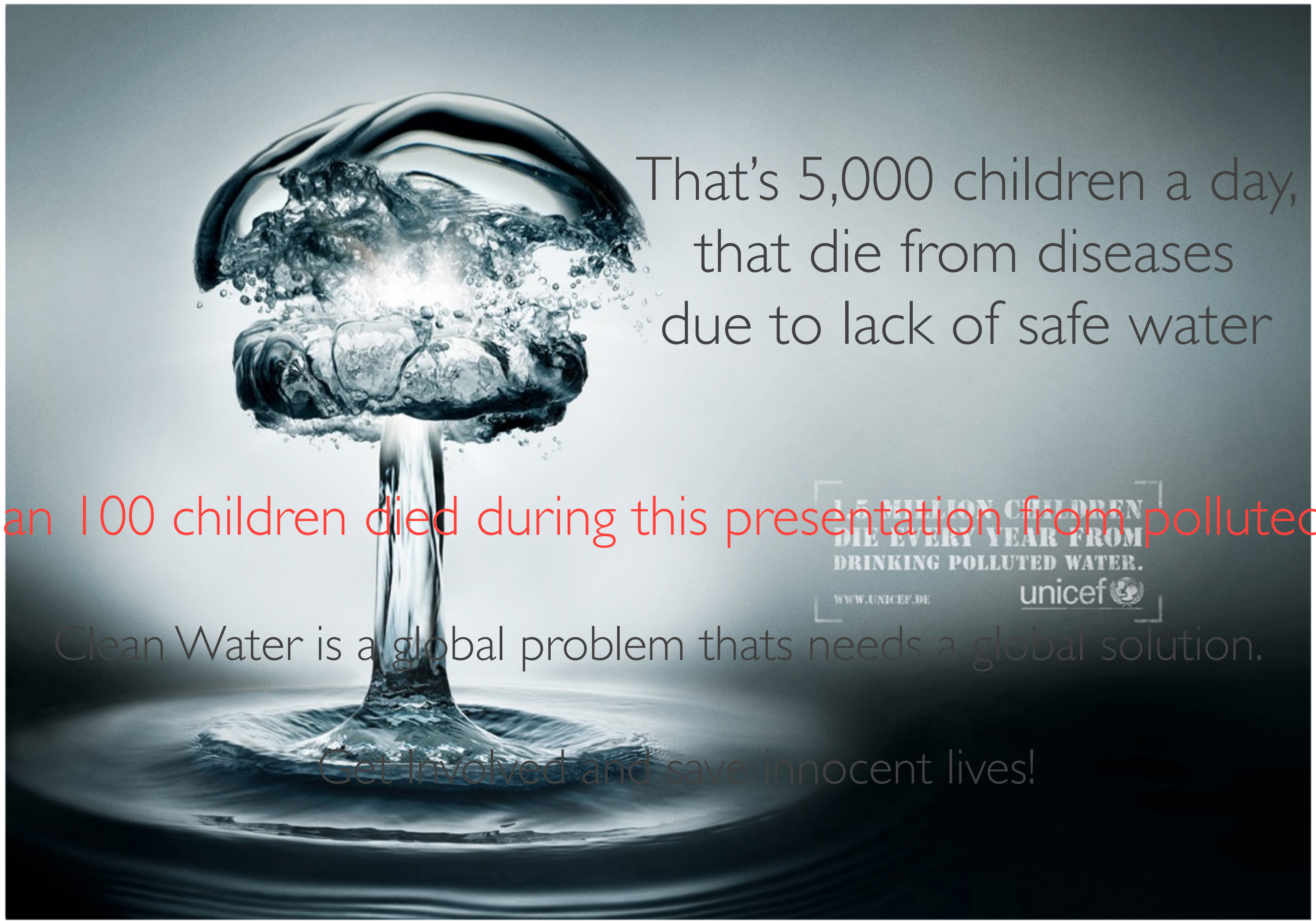
Smart Cities Ready

- Smart Cities ready
- One app can control hundreds of systems
- CleanBlu® is developing Smart Cities standards with leading international standard and code authorities
- CleanBlu® DEWATS (decentralized wastewater systems) can communicate and coordinate with each other and interface other smart city systems



Available on the
App Store





That's 5,000 children a day,
that die from diseases
due to lack of safe water

more than 100 children died during this presentation from polluted water

1.5 MILLION CHILDREN
DIE EVERY YEAR FROM
DRINKING POLLUTED WATER.
WWW.UNICEF.DE unicef

Clean Water is a global problem that needs a global solution.

Get Involved and save innocent lives!



indistinguishable from magic

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