



What We Do

WATER & WASTEWATER

Water is life... for both people and business. Our scalable prefabricated systems treat ground, surface, and wastewater sources to supply:

- Drinking / Domestic Water
- Industrial / Process Water
- Agricultural / Irrigation Water

The COVID-19 pandemic has raised the awareness of global water challenges and the lack of proper sanitation. Public health conditions related to clean drinking water, and adequate treatment and disposal of human excreta and sewage, are a top priority.

RENEWABLE ENERGY

GREEN HYDROGEN ENERGY HARVESTING - Hydrogen (H₂) is a WLS wastewater treatment system byproduct that is recovered to allow small municipalities and businesses to participate in the Green Energy revolution. Standalone H₂ production systems also provided.

SOLAR POWER READY - WLS systems are designed for low energy consumption. Optional Solar Power kit designed for WLS systems.

FOOD SECURITY

WLS systems recover water and nutrients from wastewater for reuse, and provide closed-loop plumbing hydroponics and aquaculture infrastructure for significant resource and cost savings. WLS systems can optimize nutrient levels based on crop species.



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Methane = Natural Gas ≠ Green Hydrogen

From a February 19, 2020 *Nature* article with the not-so-sexy title, "[Preindustrial ¹⁴CH₄ indicates greater anthropogenic fossil CH₄ emissions](#)" we find out that coal, oil, and natural gas are responsible for much more atmospheric methane, the super-potent warming gas, than previously known.

The study shows that Industrial atmospheric methane input has been underestimated by up to 40%, adding to the non-refutable story of man-made climate change.

Any methane that is manufactured intentionally, whether from traditional wastewater treatment plants and dairy farms where organic materials break down without oxygen to produce methane, or other sources, will contribute to climate change if it enters the atmosphere. Even with the use of methane capture systems and biogas, releases will happen, be it from newly built centralized sewage treatment systems or existing, leaky piping and built environment infrastructure. These circumstances will probably see methane production systems continue to contribute to climate change.

Zero greenhouse gas emissions is the new target for

Impact Investors, as stated in a recent [virtual presentation by Climate Bonds Initiative](#). At 1:05:13 Climate Bonds Initiative CEO, Sean Kidney, begins to describe how methane gas production is **NOT** a way forward due to pipeline leaks and associated climate change risks. He went on to explain that investments in methane projects will most likely not succeed in the long run.

So, what Green Energy solutions are looking more promising? Even though its low density and flammability make it a challenge to work with as a fuel, hydrogen is already widely used by industry and electrolysis production is a prime candidate to attain a significant share of Green Energy sources.

Green hydrogen is produced from electrolysis powered by renewable electricity. All other commercially available hydrogen production methods release emissions into the atmosphere and produce enormous amounts of pollution. Do it right, and hydrogen production can be clean and green. It's expensive, but it's getting cheaper...

OUR MARKETS

INDUSTRIAL

Agriculture | Aquaculture |
Automotive | Commercial
Livestock | Disaster Management
| Environmental Rehab | Food &
Beverage | Military | Mining | Oil
& Gas | Paper & Pulp |
Petrochemical | Pharma | Power
| Specialized Industry | Steel |
Tourism

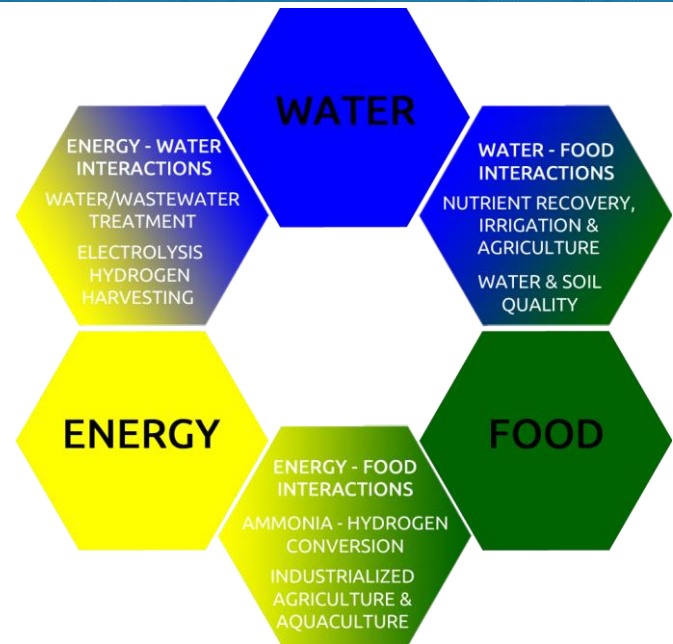
MUNICIPAL

Urban, Peri-Urban & Rural
Utilities | Commercial Buildings |
Public Facilities | Mixed-Use
Buildings | Developments | Multi-
Tenant Residences | Single
Homes

OUR GUARANTEE

Water Life Systems guarantees that you will receive enhanced security and higher quality with Water Life Systems' products and services. The service starts with customizing our solutions to your specific needs and continues through equipment delivery and life cycle maintenance. We back up what we design and manufacture to ensure that you receive complete technical and process support on-demand.

The Water, Energy & Food Security Nexus



In the August Water Life issue, we gave an overview of some conferences that WLS Co-Founder and President, Thomas Murphy, was participating. This month we will talk more about how Water Life Systems ties together the Water, Energy & Food Security Nexus.

The water, energy & food security nexus means that there is a deep connection between water security, energy security and food security, meaning that the actions in any one area often can have effects in one or both other areas. Improved water, energy, and food security on a global level can be achieved through a nexus approach—an approach that integrates management of these sectors at different scales.

The Water Life Systems PureBOX cleans water and harvests the energy and nutrients in wastewater in one system to provide an integrated Water, Energy & Food security solution that is easily scalable.

The WLS PureBOX is a multi-purpose water and wastewater treatment system at its core, with hydrogen production as a by-product that is captured and stored as electricity, and water and nutrient recovery capabilities for reuse in agricultural applications, among others.

Beyond the energy required for the water and wastewater treatment, Water and Energy interactions are enabled through the PureBOX's electrolysis-based

treatment components. Multiple electrolytic processes occur simultaneously to produce significant amounts of hydrogen gas that are captured and converted into electricity that is stored onsite in refurbished EV fuel cell banks. This stored power can be used to reduce shore power consumption or on cloudy days if using solar power for the PureBOX. When initially powered with a renewable energy source such as solar or hydro, the hydrogen energy produced and recovered by the PureBOX is 100% Green Hydrogen Energy.

Energy and Food interactions consist of the PureBOX's ability to support industrial sized hydroponics operations with freshwater and nutrient recovery from municipal wastewater for irrigation use, environmentally friendly wastewater discharge, and closed-loop water infrastructure in water stressed areas. Also, the Ammonia produced by organic waste in wastewater provides significant amounts of hydrogen.

As just mentioned, the Water and Food interactions are provided by the PureBOX with freshwater and nutrient recovery from wastewater for irrigation water use in agricultural operations. Aquaculture operations also benefit with the wastewater treatment and closed-loop operations support. Aquaculture ops also produce significant amounts of Ammonia that can be harvested.

SUSTAINABLE DEVELOPMENT GOALS



#WeCanSaveTheWorld

The core mission of WLS is to increase global resiliency and sustainability in water, renewable energy, and food security systems.

The world's rapid population growth, coupled with rapid climate change, is increasing the competition for resources. At WLS, we're committed to doing our part to operate sustainably. Our innovative solutions provide resource conservation, energy savings, the reuse of water, food security, and better population well-being and health outcomes.

Advanced O3In-Gen™ technology is one example of WLS' focus on cost savings and increased treatment effectiveness. O3In-Gen™ is used in WLS' PureBOX™ decentralized wastewater treatment package plants with closed-loop capabilities, Hydrogen production, and food security systems. The systems are ideally suited for a scalable solution to provide clean water, wastewater treatment, and food security for all by 2030 in a world where billions of people do not have access to sufficient water supply and sanitation services. We envision a world without waterborne pollution

and the abundance of freshwater for all using our water treatment and monitoring systems, which correspond most directly to the United Nations Sustainable Development Goals SDG 6 - Clean Water and Sanitation.

At WLS, we're committed achieving the United Nations Sustainable Development Goals (SDGs) by the 2030 goal date. This collection of 17 global goals is designed to be a "blueprint to achieve a better and more sustainable future for all." Our operations and solutions contribute to all the UN's SDGs.

SDG 7

Affordable and Clean Energy

7.1 Target

Ensure universal access to affordable, reliable and modern energy services

7.1.1 Indicator

Percentage of population with access to electricity

7.1.2 Indicator

Proportion of population with primary reliance on clean fuels and technology

7.2 Target

Increase substantially the share of renewable energy in the global energy mix

7.2.1 Indicator

Renewable energy share in the total final energy consumption and technology

7.3 Target

By 2030, double the global rate of improvement in energy efficiency

7.3.1 Indicator

Energy intensity measured in terms of primary energy and GDP

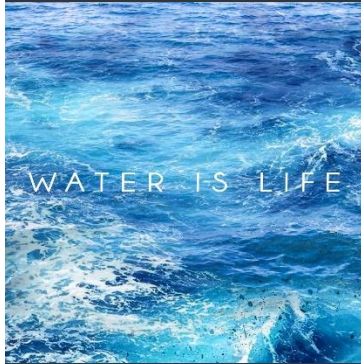
This Issue's SDG Provided by Water Life Systems

World Economic Forum 2020: "The global water crisis is one of the greatest threats to humanity."

The "traditional" way of living is not sustainable for life on Earth. Water Life Systems leadership, in living through their own climate-caused near disasters, being Vancouver 100-year drought in 2015 and the 2017-18 Day Zero scare in Cape Town, South Africa, have developed water supply, sanitation, and food security Micro-Utility solutions that can be deployed into the built environment on a global scale. Tech components can be integrated into centralized systems.

WLS systems are at the core of providing water stressed populations with clean water and sanitation services. Currently some 2.2 billion people worldwide do not have sufficient drinking water services, 4.2 billion people do not have safely managed sanitation services, and 3 billion lack basic handwashing facilities.

Much of the world is not set to meet United Nations Sustainable Development Goals with current systems thinking. No single solution will result in universal access by 2030. A range of adaptable and scalable solutions are needed to overcome geography, gender, and socioeconomic barriers.



Would you like to participate in the WLS Investor & Partnership Program? Please fill out the application to help us determine how to best approach the partnership to ensure mutual success.

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Partnership Tracks

WLS offers various partnership solutions including:

- Integrated product distribution
- Individual tech component licensing
- Complete tech transfer programs for national solution integration

Technical expertise, geography and solution area of your business will determine which track best fits your business model. Partners can participate in one or more tracks, based on expertise and available production facilities.

[Click here for more information and to complete the inquiry form](#)

For More Information

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