



## 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 (H<sub>2</sub>) is a WLS wastewater treatment system byproduct that is recovered to allow small municipalities and businesses to participate in the Green Energy revolution. Standalone H<sub>2</sub> 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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## WLS and Green Hydrogen Generation

**Clean freshwater, Green energy, and food security are the most essential elements of life, and their sufficient availability on Earth is now threatened due to GHG emission inducing climate change. The evidence is irrefutable according the latest report from The Intergovernmental Panel on Climate Change (IPCC) <https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/>.**

Water Life Systems (WLS) has developed innovative carbon-free electrolysis-based water treatment and hydrogen production technologies that clean ground, surface, and waste water, with hydrogen byproduct recovery, and application in dedicated hydrogen production plants. WLS also recovers nutrient resources from wastewater to provide integrated Water, Energy & Food Nexus infrastructure solutions that are easily scalable.

**WLS has incorporated the groundbreaking hydrogen storage technology of a Canadian based nanotechnology firm that provides a safe, cost-efficient, and multipurpose proprietary nanomaterial solution for the storage and transportation of solid-state hydrogen at less than 50 bar pressure.**

The performance and application diversity of the WLS

treatment and hydrogen production plants works because of the WLS proprietary electrolysis-based treatment processes and electrolyzers, filter ranges, digital sensors, Artificial Intelligence, & remote Internet of Things integrated systems. The secure low-pressure hydrogen storage and transportation solution brings the hydrogen to market. The technologies have been selected and developed by WLS for their robustness in the field, easy operation and maintenance, and low cost.

**Hydrogen value chain innovation is found in the wastewater feedstock sourcing for the multiple hydrogen production streams produced by the WLS hydrogen production systems, and the integration of the low-pressure solid-state hydrogen storage and transportation solution.**

The world can no longer rely on life infrastructure systems of the past that have created the world's current pollution challenges. WLS and its partners tie together the Water, Energy, Food Nexus to provide advanced solutions to achieve the United Nations Sustainable Development Goals.



## 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.

### Drivers of renewed interest in hydrogen



**Stronger push to limit carbon emissions**

**10**

Years remaining in the global carbon budget to achieve the 1.5°C goal

**66**

Countries that have announced net-zero emissions as a target by 2050



**Falling costs of renewables and hydrogen technologies**

**80%**

Decrease in global average renewable energy prices since 2010

**55x**

Growth in electrolysis capacity by 2025 vs. 2015

### Indicators of hydrogen's growing momentum



**Strategic push in national roadmaps**

**70%**

Share of global GDP linked to hydrogen country roadmaps to date<sup>1</sup>

**10 m**

2030 target deployment of FCEVs announced at the Energy Ministerial in Japan



**Industry alliances and momentum growing**

**60**

Members of the Hydrogen Council today, up from 13 members in 2017

**30+**

Major investments announced<sup>2</sup> globally since 2017, in new segments, e.g. heavy duty and rail

*Source:* Hydrogen Council 2020: [Path to Hydrogen competitiveness](#)

## WLS Integrated Hydrogen Nanotechnology

In the January Water Life issue, we discussed whether or not humankind can achieve the United Nations Sustainable Development Goals (SDGs) and what is needed to accomplish the goals. This issue we will look at how WLS is integrating Hydrogen nanotechnology into its existing water and wastewater treatment systems to facilitate the uptake of renewable energies on a global level and make the SDG's attainable for all.

WLS has partnered with an early-stage Canadian nanotechnology company that has developed breakthrough hydrogen storage technology. WLS is integrating the nanotechnology into its hydrogen recovery and dedicated production systems to provide a safe, cost-efficient, and multipurpose proprietary nanomaterial solution for the storage and transportation of solid-state hydrogen at ultra-low pressure.

The nanomaterial tanks can be used in three major ways:

- Transport and distribute hydrogen
- Improve hydrogen fuel cell refueling
- Store energy generated from other sources of energy (ex: solar, wind)

**WLS and partner break-through hydrogen generation, storage, and transportation technologies are the key to an integrated hydrogen supply chain** and will play a major role in growing the global market for hydrogen technology and hydrogen-based energy applications.

Current inhibiting high costs in the hydrogen storage and transportation sectors include:

- Current hydrogen tanks can cost up to 30 times the cost of a conventional gas tank (US\$5- US\$7,000 vs US\$200)
- High pressure requirements: H2 tanks require pressure of up to 700 bar, 10,000 psi
- Economic feasibility: due to H2 losses, transporting of hydrogen for long distances (150km+) is not feasible

**The WLS and partner nanomaterial hydrogen storage and transportation solution provide:**

- **Low pressure is applied (50 bar)**
- H2 is not covalently bonded to material, therefore easy to adsorb and release
- Physisorption - Van der Waal's force to attract hydrogen to surface of H2M's patented material
- H2 released at the opening of a valve
- No additional heat or equipment required

Hydrogen value chain innovation is found in the wastewater feedstock sourcing for the multiple hydrogen production streams produced by the WLS hydrogen production systems, and the integration of the low-pressure solid-state hydrogen storage and transportation solution.

[Contact us today](#) to deploy your own WLS Water-Energy-Food Security climate adaptation solutions!

# 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.

## 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.

## SDG 17

### Partnerships For The Goals

#### 17.2 Target

Developed countries to implement fully their official development assistance commitments, including the commitment by many developed countries to achieve the target of 0.7 per cent of ODA/GNI to developing countries and 0.15 to 0.20 per cent of ODA/GNI to least developed countries; ODA providers are encouraged to consider setting a target to provide at least 0.20 per cent of ODA/GNI to least developed countries

#### 17.2.1 Indicator

Net official development assistance, total and to least developed countries, as a proportion of the Organization for Economic Cooperation and Development (OECD) Development Assistance Committee donors' gross national income (GNI)

#### 17.5 Target

Adopt and implement investment promotion regimes for least developed countries

#### 17.5.1 Indicator

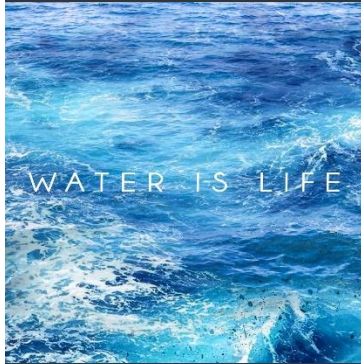
Number of countries that adopt and implement investment promotion regimes for least developed countries

#### 17.6 Target

Advance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, in particular at the United Nations level, and through a global technology facilitation mechanism

#### 17.6.1 Indicator

Number of science and/or technology cooperation agreements and programmes between countries, by type of cooperation



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

<https://waterlife.systems>

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