WOG
WATER • OIL • GAS

WOG Technologies Limited

Water. Energy. Sustainability. Innovation.

Global leaders in water and wastewater management, energy transition and sustainability solutions.

www.woggroup.com

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Who We Are

Innovating Today for a Sustainable Tomorrow
At WOG Technologies Limited, we lead the shift toward a sustainable world by redefining how industries and cities manage water, wastewater and renewable energy.

With decades of expertise, we deliver advanced ZLD, waste-to-energy and resource recovery systems that enhance efficiency and cut water, carbon and ecological footprints.

Our end-to-end capabilities span water treatment, desalination and closed-loop reuse, powered by innovation, compliance and reliability.

As clean energy accelerates, we're investing in Compressed Biogas (CBG), Green Hydrogen and Energy Optimization to drive a circular, low-carbon future.

350+
Employees

1,500+
Years of Experience

175+
Projects completed by team

Vision

To become the global leader in delivering innovative and sustainable solutions through advanced process technologies and customer-centric services.

Mission

We are committed to managing the entire water cycle efficiently, developing future-ready solutions to meet growing global demands and creating a better, greener tomorrow for communities, industries and ecosystems.

WOG Technologies Limited:
Engineered for Impact

WOG Technologies Limited is a global leader in water, wastewater and clean energy solutions, known for solving complex environmental challenges with precision and innovation.

- Reclaims water from high-TDS industrial effluents
- Designs zero liquid discharge (ZLD) and resource recovery systems.
- Converts hazardous organic waste into clean biogas
- Operates in Southeast Asia, the Middle East, Africa and Latin America
- Serves industrial and municipal sectors with tailor-made solutions
- Trusted across power, chemicals, F&B, textiles and city infrastructure
- Expertise spans pilot projects to large-scale BOT execution
- Delivers measurable outcomes in water savings and carbon reduction
- Driven by innovation, collaboration and long-term sustainability

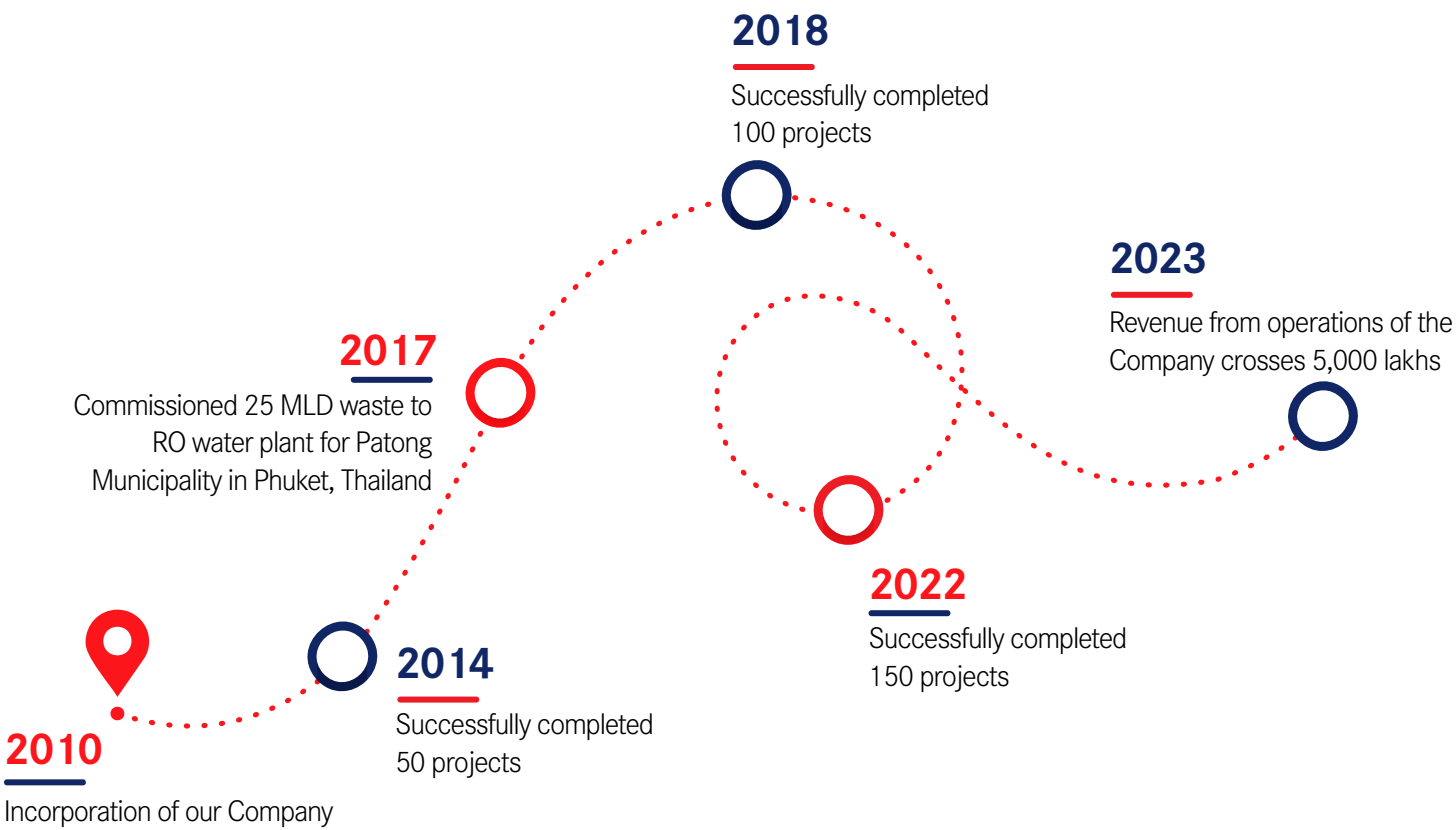
Core Values

Guided by Purpose. Driven by Impact.

- **Sustainability first:**
  Designing circular solutions that conserve water, cut emissions and protect the planet.
- **Innovation with purpose:**
  Advancing smart technologies to solve complex environmental challenges.
- **Integrity and accountability:**
  Operating with transparency, ethics and responsibility in every engagement.
- **Collaboration and partnership:**
  Building trusted relationships to co-create sustainable, scalable solutions.
- **Excellence in execution:**
  Delivering consistent, high-quality outcomes through precision and discipline.
- **People-centric approach:**
  Empowering teams, valuing diversity and fostering long-term growth and trust.

Our Journey

WOG Technologies Limited has charted a path of consistent growth and innovation:



Our Journey

WOG Technologies Limited has charted a path of consistent growth and innovation:

2025

- Revenue from operations of the Company crosses 15,000 lakhs.
- Conversion from a private limited company to a public limited company Incorporated our Subsidiary under the name of WOG Technologies SEA Holdings Pte. Ltd.
- Incorporated our Subsidiary under the name of WOG Carbonloops Private Limited
- Acquisition of 99.99% of the issued and paid-up share capital of our Subsidiary, WOG Greencoal Private Limited
- Acquisition of 5% equity share capital in Bell Cooling Towers Private Limited; a company engaged in the manufacturing and supply of cooling towers

Awards, accreditations and recognition received by our Company and Subsidiaries

Calender Year	Particulars
2019	• Our Company was awarded with the "Innovation in Water & Wastewater Treatment" award by Asian African Chamber of Commerce & Industry.
2022	• WOG Technologies Pte. Ltd., our Material Subsidiary was awarded with the "Industrial Water Project of the Year" award by CMO Asia under the Leadership Awards for Water Efficiency category.
2023	• WOG Technologies Pte. Ltd., our Material Subsidiary was awarded with the "Carbon Reduction Initiative of the Year" by CMO Asia under the Leadership Awards for Water Efficiency category.
2024	• WOG Technologies Pte. Ltd., our Material Subsidiary was awarded with the "Net Zero Innovation Award" at the 9th edition of the World Water Leadership Congress & Awards. • WOG Technologies Pte. Ltd., our Material Subsidiary was awarded with the "Water Company of the Year" award at the 9th edition of the World Water Leadership Congress & Awards
2025	• Our Company was recognized as the "One Star Export House" by Directorate General of Foreign Trade, Department of Commerce, Ministry of Commerce and Industry, Government of India.

Global Footprint

WOG Technologies Limited – Serving the World, Sustainably

WOG Technologies Limited operates across diverse geographies through its subsidiaries and project offices. Our footprint reflects both our technical excellence and deep-rooted commitment to solving global water challenges.

New Energy

The Energy Transition

Overview: Transitioning from Waste to Energy

The global move toward cleaner energy is accelerating the need for practical and scalable low carbon solutions. WOG supports this transition by focusing on technologies that convert waste into renewable energy, reduce emissions by up to 80% and create circular value for industries and communities. Our role is to enable feasible adoption with engineered systems that integrate into existing operations without overhauls or disruption while ensuring compliance with global **ESG and Net Zero 2070 goals.**

Compressed Biogas

Turning organic waste into renewable gas for industrial and mobility use.

What We Focus On

- Anaerobic digestion systems designed for municipal, agricultural and industrial feedstocks.
- Biogas purification and upgradation systems that improve gas quality for CBG.
- Modular plug and operate units for faster project execution.
- Process integration with utilities for energy and resource efficiency.

Why It Matters

CBG reduces landfill loads, supports clean fuel substitution and creates circular revenue streams for waste generators.

Green Hydrogen

Producing clean hydrogen through water electrolysis powered by renewable energy.

What We Focus On

- Electrolyser technology selection and engineering for alkaline, PEM and emerging systems
- System integration with industrial water treatment for process efficiency
- Balance of plant design for storage, compression and safe handling
- Early-stage advisory on feasibility, water security and energy – sourcing

Why It Matters

Hydrogen offers an alternative to fossil-based fuels for hard to abate sectors and supports long term decarbonization goals.

Circular Carbon Solutions

Converting biomass into carbon rich products with long term environmental value.

What We Focus On

- Pyrolysis and torrefaction reactors used for agriculture and soil health.
- Reactor designs that maximize carbon retention and energy recovery.
- Projects aligned with circular economy and carbon storage outcomes.
- Applications for soil enrichment, filtration and industrial carbon replacement.

Why It Matters

Circular carbon products improve soil productivity, offer carbon storage benefits and reduce reliance on mined or fossil-derived carbon.

Carbon Credits and Climate Finance

Helping environmental projects unlock financial value through verified carbon savings.

What We Focus On

- Assessment of carbon credit eligibility for CBG, hydrogen and pyrolysis and torrefaction reactors projects
- Alignment with voluntary and compliance carbon markets
- Partnerships for verification pathways across global standards
- Guidance on revenue models linked to decarbonization performance

Why It Matters

Climate finance creates a viable business case for sustainable projects and supports faster adoption of low carbon solutions.

Global Market Outlook

Demand for clean energy is rising across priority regions.

Key Trends

- India targets 5,000 CBG plants under SATAT and 5 million tons per year of green hydrogen production by 2030.
- MENA is expanding hydrogen partnerships focused on export to Europe and Asia.
- Southeast Asia is scaling waste to energy and circular carbon projects driven by landfill reductions.
- Europe continues to lead in hydrogen adoption with strong demand for certified green fuels and carbon removal.

Why It Matters

Growing policy support and market demand is driving investment into clean energy projects and creating opportunities for scalable solutions.

Core Equipment in Focus

Our solutions are designed around reliable and field-tested equipment that supports energy, circular carbon and hydrogen projects.

Systems Typically Engineered

- Anaerobic digesters for CBG production
- Gas cleaning and upgradation units
- Pyrolysis and torrefaction reactors
- Water electrolysis units and electrolyser stacks
- Storage, compression and safety systems for gas handling

Why It Matters

The right equipment selection ensures performance, operational safety and long-term project viability.

Progressive Steps Toward Clean Energy

WOG Technologies Limited has steadily evolved its clean energy capabilities through real-world execution, inhouse R&D and integration of energy-from-waste technologies. Verified through official site insights:

- **2018–2019:** Initiated bio-energy development through biogas collection and treatment systems for both municipal and industrial clients
- **2020:** Developed advanced biogas-to-electricity plants and began integration of treated wastewater into energy production loops
- **2021–2022:** Commissioned bio-CNG compatible systems using high-organic load waste streams; expanded into effluent-based reuse projects
- **2023:** Highlighted for biogas recovery and resource utilization expertise; intensified focus on modular mobile plants and renewable energy integration
- **2024 (Ongoing):** Working on full-cycle renewable solutions, from bio-waste conversion to energy and clean water reuse, across India and Asia

Full Water Lifecycle

Managing the Full Water Lifecycle

At WOG Technologies Limited, we offer end-to-end solutions across every stage of the water lifecycle, ensuring efficiency, compliance and environmental responsibility.

Pre-treatment and filtration
Surface and groundwater sources are treated using lime soda softening, clarifiers, gravity/pressure filters and disinfection systems (UV, ozone, chlorination).

High-purity and process water
We deliver advanced membrane (UF, NF, RO) and resin-based systems for softening, demineralization and selective contaminant removal.

Wastewater and sludge treatment
Our anaerobic and aerobic systems (UASB, SBR, MBR) treat effluents and generate biogas for energy recovery.

Recycling and ZLD systems
We enable industries to recycle wastewater, reduce freshwater intake and meet Zero Liquid Discharge (ZLD) goals.

Technology Breakdown 1

Proven Technologies. Precision Results.

WOG Technologies Limited delivers customized water treatment systems built on advanced engineering, decades of industry experience and scalable, field-tested technologies.

Raw Water Treatment Systems

For reliable removal of physical and chemical contaminants before downstream processing.

- **Softening and clarification:**
  Lime soda softening, solid contact clarifiers.
- **Filtration systems:**
  Rapid sand gravity filters, pressure filters.
- **Disinfection solutions:**
  UV, ozone and chlorination to ensure safe, pathogen-free water.

Membrane-based Systems

Delivering high-quality process water for industrial and utility needs.

- **Ultrafiltration (UF):**
  Removes suspended solids and pathogens.
- **Nanofiltration (NF):**
  Selective removal of organics and hardness.
- **Reverse Osmosis (RO):**
  Desalination and brackish water purification.

Technology Breakdown 2

WOG integrates advanced biological and chemical technologies that ensure high-purity water, energy recovery and zero-waste discharge (ZLD).

Resin-based Treatment Systems

Designed for industries requiring high-purity and softened water.

- **Water softeners:**
  Prevents scale buildup and hardness-related issues.
- **Nanofiltration (NF):**
  Selective removal of organics and hardness.
- **Reverse osmosis (RO):**
  Desalination and brackish water purification.

Biological Treatment Systems

Highly efficient wastewater treatment with resource recovery benefits.

- **Anaerobic digesters (UASB, hybrid):**
  Sludge reduction + biogas generation.
- **Aerobic systems (SBR, activated sludge, jet aeration):**
  Compact, high-capacity treatment.
- **Membrane bioreactors (MBR):**
  Advanced nutrient removal and reuse-ready effluent.

Advanced Technologies

Innovations that support sustainability and operational excellence.

- **Biogas utilization:**
  Converted into hydrogen, boiler fuel, ethanol and natural gas.
- **Oil removal and recovery:**
  Using API, TPI, DAF, IGF, NSF and CF systems.
- **Odor and VOC control:**
  Ensuring environmental compliance and community safety.

Industries We Serve

Our experience spans every major water-intensive sector:

Oil & Gas

Pharmaceuticals

Petrochemicals

Food & Beverage

Textiles

Tanneries

Mining and Metals

Data Centers

Automotive

Heavy Manufacturing

Chemicals and Fertilizers

Agriculture and Irrigation

Sugar, Distilleries and Breweries

Palm Oil

FMCG

Yeast and Fermentation

Produced Water

Semiconductors

Petrochemical

Solar and PVC

Green Ammonia

Power

Every sector has unique needs and our solutions match them precisely.

Industry Projects

Enhancing Operational Efficiency: Aramco Pilot Case Study

Project Objective:

Deploy a Ceramic Membrane Pilot Plant at Saudi Aramco to reduce TSS and oil content in high-temperature wastewater.

The 40–80 m^3/hr pilot plant tests membrane performance under real conditions for efficient oil and solids removal with minimal pre-treatment.

Technical Highlights:

- Membranes: Ceramic
- Modes: Dead-end and crossflow
- Flow: 40–80 m^3/hr
- Cleaning: Backwash, CEB, CIP, flushing
- Sludge dewatering: Integrated for waste assessment

Target Outlet Parameters:

- TSS: 3 mg/L
- Oil: 10 mg/L
- TDS: 200,000 mg/L
- Chlorides: 164,000 mg/L

Impact and Outcomes:

- Reliable treatment of oily wastewater
- Scalable design for full-scale deployment
- Optimized flow and cleaning protocols
- Established recovery rates and sludge/oil data

Industry Projects

WWTP Expansion- Kimberly-Clark (Singapore / India)

Project Objective:

WOG Technologies executed the expansion of an existing Wastewater Treatment Plant (WWTP) for Kimberly-Clark, enhancing treatment capacity from 30 KLD to 60 KLD while ensuring consistent discharge compliance.

Technical Highlights:

- Influent wastewater: Industrial process wastewater
- Treatment capacity: 60 KLD
- Primary treatment: Equalization Tank, Oil & Grease Removal
- Biological treatment: Activated Sludge Process (ASP)
- Secondary clarification: Tube Settler / Secondary Clarifier
- Tertiary treatment: Pressure Sand Filter (PSF), Activated Carbon Filter (ACF)
- Sludge treatment: Sludge Thickener, Filter Press
- Disinfection: Chlorination System
- Automation: PLC-based control system

Key Outcomes:

- Capacity upgrade: Increased treatment capability to meet higher load conditions.
- Process optimization: Stable and efficient plant operation post-expansion.
- Compliance assurance: Achieved consistent treated water quality as per norms.
- Operational continuity: Seamless integration with existing WWTP infrastructure.

Industry Projects

WTP & ETP – 2G Ethanol Bio-Refinery, HPCL (Bathinda, India)

Project Objective:

WOG Technologies successfully designed and implemented integrated Water Treatment Plant (WTP) and Effluent Treatment Plant (ETP) solutions for HPCL's 2G Ethanol Bio-Refinery at Bathinda.

The combined water management system treats 4,166 m^3/hr of raw water through WTP and 1,920 m^3/day of industrial effluent through ETP, ensuring continuous availability of high-purity process water, maximum water recovery and environmentally compliant wastewater discharge.

The project supports sustainable bio-refinery operations by significantly reducing freshwater intake and enabling efficient water reuse.

Technical Highlights:

Effluent Treatment Plant (ETP):

- System treating capacity: 1,920 m^3/day
- Inlet TDS: 1,618 ppm → Outlet TDS: 240 ppm
- Inlet TSS: 45 ppm → Outlet TSS: Nil (0 ppm)

Water Treatment Plant (WTP):

- System treating capacity: 4,166 m^3/hr
- Inlet TDS: 550 ppm
- Outlet TDS (RO): 10 ppm
- Final Outlet TDS (DM): 1 ppm

Key Outcomes:

- Total water recovery:
  ETP water recovery: 96.8%
  WTP water recovery: 80%
- Environmental compliance: Achieved stringent discharge and reuse norms.
- Water sustainability: Significant reduction in freshwater intake.
- Operational efficiency: Stable supply of ultra-pure water for critical processes.
- Sustainability impact: Strengthened circular water management for a 2G bio-refinery.

Industry Projects

WWTP and Biogas Generation – Coke (Jamaica)

Project Objective:

WOG Technologies implemented a high-efficiency Wastewater Treatment Plant (WWTP) integrated with a Biogas Generation System for a leading beverage manufacturer in Jamaica. The system treats 350 m^3/day of high-strength wastewater, achieving discharge compliance and generating renewable energy.

Technical Highlights:

- Wastewater strength: COD 6,000 ppm, BOD 2,000 ppm
- Treatment capacity: 350 m^3/day
- Biogas production: 27,000 Nm^3/day (70% CH_4)
- Methane utilization: 18,900 Nm^3/day
- Energy savings: 1,800 kW/day
- pH reduction: From 6.0 to 7.5
- COD reduction: From 6000 to 100 ppm
- BOD reduction: From 2000 to 30 ppm
- SS reduction: From 500 to 50 ppm
- Carbon footprint reduction: 1,629 kg/day

Key Outcomes:

- Environmental compliance: Achieved stringent discharge norms.
- Sustainability: Reduced carbon footprint through renewable energy integration.
- Operational efficiency: Lowered energy costs with biogas utilization.
- Resource recovery: 72% reduction in organic load.

Innovation

Innovation: Driving Practical Progress for a Sustainable Future:

Our innovation efforts focus on developing and implementing solutions that improve treatment performance, resource efficiency and environmental impact for industries and municipalities. We emphasize technologies that can be adopted with minimal disruption to existing operations.

Innovation Focus Areas:

- **Spent caustic treatment:**
  Advanced oxidation and biological processes designed to neutralize high strength caustic waste for safer discharge with reduced sludge generation.
- **High efficiency UASB reactor:**
  Next generation anaerobic treatment achieving up to 95 percent COD reduction while supporting biogas recovery for onsite energy use.
- **New energy solutions:**
  Transforming wastewater facilities into renewable energy contributors through biogas utilization, sludge to fuel applications and integrated clean energy systems.
- **Saltwater stream treatment:**
  Solutions for brine and high TDS wastewater that support salt recovery, zero liquid discharge and optimized energy performance.
- **PFAS treatment:**
  Advanced filtration and adsorption-based solutions to help reduce persistent forever chemicals for cleaner and compliant water output.

Research and Development:

Building the Next Generation of Environmental Solutions

Our R & D efforts aim to strengthen technology performance, validate new processes and build data driven learnings that support long-term sustainability goals. We focus on collaborative development with technology partners, institutions and pilot deployments to ensure readiness for real world application.

- Pilot scale testing to validate treatment performance under varied feed conditions.
- Research on energy positive wastewater systems and circular byproduct utilization.
- Development of modular designs for faster deployment and lower lifecycle costs.
- Continuous improvement in membrane, biological and advanced oxidation technologies.
- Evaluation of emerging contaminants and treatment pathways for future compliance.

Sustainability Impact Overview

Sustainability at WOG: Proven Impact, Trusted Metrics

At WOG Technologies Limited, sustainability is not a tagline, it's our operating model. Every solution we deploy, from wastewater reuse to renewable gas generation, is designed to reduce carbon, conserve resources and support national climate goals.

Key Sustainability Outcomes:

- 750,000+ ton CO_2e/year mitigated through circular wastewater-energy systems.
- 750,000+ Nm^3/day of biogas generated from organic waste.
- 1200+ million liters of water treated annually across municipal and industrial clients.
- 1,500+ MW energy saved from high-efficiency operations.

Decarbonization Targets (2025):

- 30% energy efficiency gains across client infrastructure.
- 20% reduction in Scope 1–3 emissions, aligned with GHG Protocol and ISO 14064.
- 90% ESG-compliant vendor alignment, promoting responsible sourcing.

Our services extend beyond water; we're leading a carbon-conscious transformation:

Scope 1, 2 and 3 Emissions

- Full-spectrum emissions tracking.
- Industrial benchmarking with Sphera, Persefoni and Carbon Trust tools.

Emission Baselines and Reduction Targets

- Year 1–5 emission intensity targets.
- Science-based Target Initiative (SBTi) alignment.

Carbon Offset Strategies

- Credible, tracked offsets.
- Support for energy, manufacturing, real estate and logistics sectors.

We follow the GHG Protocol, ISO 14064 and GRI for reporting.

WOG Sustainability KPIs and Dashboards

WOG Performance Goals (2025 Targets):

Metric	Definition	Target
Energy efficiency (%)	Energy savings from sustainable projects	30% (Year 5)
Carbon emissions (tCO_2e)	Reduction across Scope 1–3	20% (Year 5)
Supply chain ESG compliance	Vendors aligned with standards	90% (Year 5)

Our reporting uses real-time dashboards and industry benchmarking to track success.

Client Portfolio

Partners Who Trust Our Expertise

Kimberly-Clark

ENTER ENGINEERING

FLAG ETS
Reclaim - Recycle - Reuse

हिन्दुस्तान पेट्रोलियम
HP

PSIEC

ਜਲ ਸਪਲਾਈ ਅਤੇ ਸੈਨੀਟੇਸ਼ਨ ਵਿਭਾਗ
ਪੰਜਾਬ

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Let’s collaborate to build a cleaner, smarter and more water-secure world.