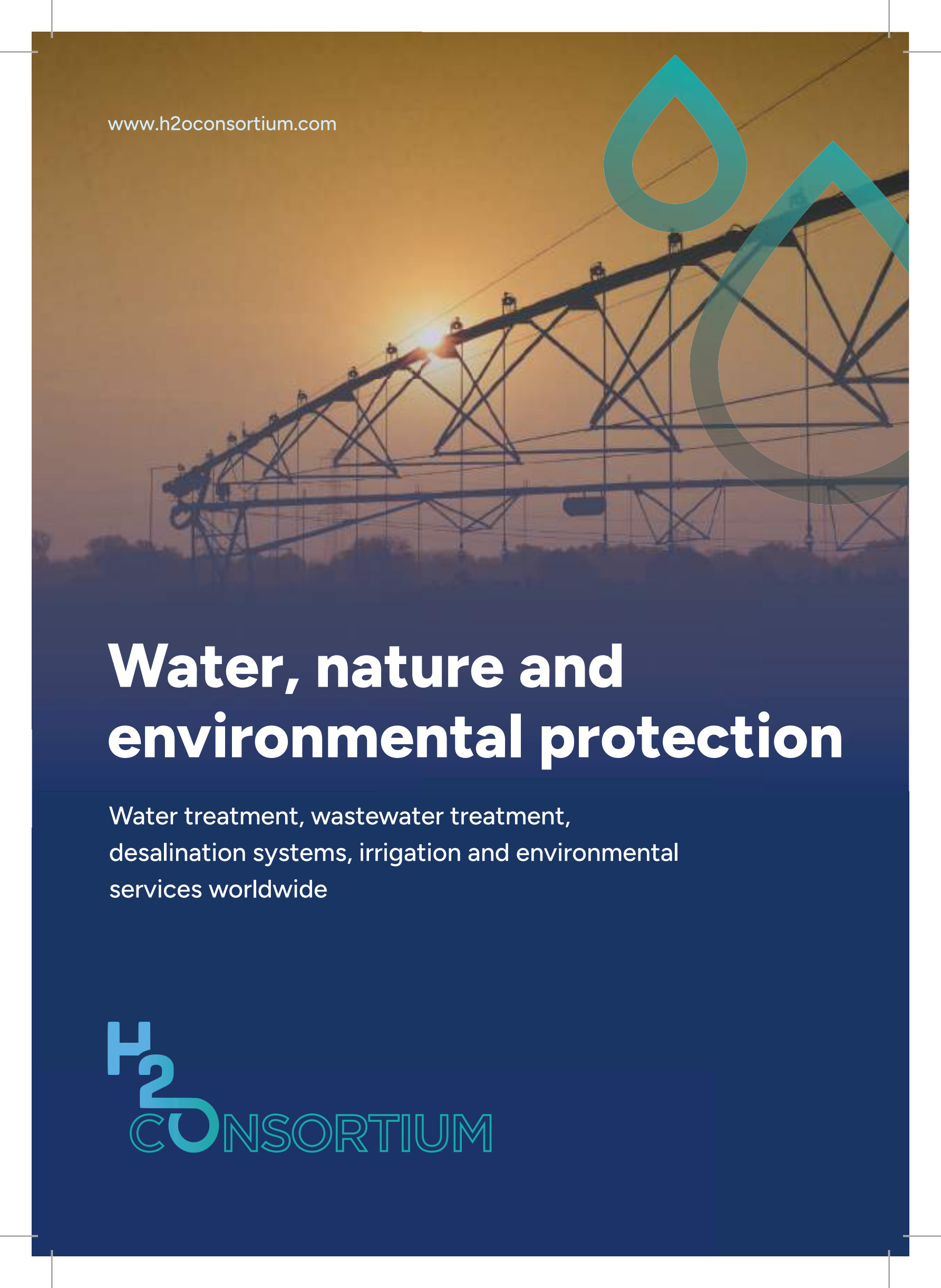


www.h2oconsortium.com



Water, nature and environmental protection

Water treatment, wastewater treatment,
desalination systems, irrigation and environmental
services worldwide

H₂
CONSORTIUM



ABOUT US

Water & Environmental Management Since 1989

For more than 35 years we have provided comprehensive engineering, consulting and project implementation services in water management, desalination, wastewater treatment and environmental protection worldwide.

Our work includes irrigation development, agricultural water mobilization, industrial and drinking water treatment, stormwater and inland excess water control, flood protection design, regional water management planning, environmental impact assessments, waste management systems, monitoring and sampling, as well as site investigation and remediation of contaminated areas with various international references.



OUR EXPERTISE



Water Treatment Solutions

Innovative water treatment solutions ensuring safe industrial and drinking water quality, supported by reliable technology, system optimization and operational efficiency.

Desalination

Advanced seawater and brackish water desalination using cutting-edge SWRO technology, providing sustainable fresh water resources.



Wastewater Treatment Solutions

Next-generation wastewater treatment solutions for municipal and industrial use, delivering clean, reusable water through proven technology and intelligent optimization, and maximum operational performance.



Who are we?

The members of the H2O Consortium offer a broad spectrum of services on the fields of water management and environmental protection, from conceptual planning, through design, authorization and implementation to operation of projects. The members of the H2O Consortium collaborate to jointly promote their expertise in both new and existing international markets.



255

total
employees



129

highly qualified
engineers



3000+

total completed
contracts



10,000+

samples
taken

Our team of 255 total employees, including 129 highly qualified engineers, and more than 3,000 international reference projects ensure sustainability and regulatory compliance across all disciplines. We deliver modular, scalable, and technically advanced services for municipalities, public authorities, and industrial facilities, including water treatment, wastewater treatment, water reuse, desalination, and the design and operation of drinking-water supply systems.

**Members
of the H2O
Consortium**



EXPORT ACTIVITIES

Products, Services & Innovative solutions

As a member of the H2O Consortium, we provide internationally focused services in water management, drinking water supply, water treatment, desalination and environmental protection.



Water treatment



Wastewater treatment



Desalination



**Development of
Agricultural Water
Supply and
Irrigation Systems**



**Environmental
protection**



Consortium partners operate with several hundred engineers and multiple offices in Laos, Indonesia, Europe and various African countries, covering the full scope of water and wastewater treatment.

EXPORT ACTIVITIES

**CABO
VERDE**

HUNGARY

LAOS

UGANDA

KENYA

RWANDA

INDONESIA



Our companies are actively involved in ongoing H2O Consortium projects, including irrigation development in Kenya, water treatment system design in Rwanda, drinking water and wastewater treatment investments in Laos, and desalination and advanced water treatment projects in Cabo Verde.

**Consortium
Wordwide**

VISION

Vision and future plans at H2O Consortium

We are open to joining international projects where the H2O Consortium contributes strong expertise in water treatment, wastewater treatment and desalination.

The company seeks new cooperation across Europe, Asia and East and West Africa, focusing on drinking water supply, irrigation development and advanced treatment technologies and solutions.

Main activities

Engineering, consulting and integrated design–build services, including design, permitting, process engineering, technology integration and project implementation.



Current export markets:

Kenya
Rwanda
Laos and
Cabo Verde

TECHNOLOGIES

Integrated Water Management and Infrastructure

The H2O Consortium's expertise extends beyond individual technologies, covering the full spectrum of water management services to ensure regional water security and the sustainable use of natural resources.

Large-Scale Water Treatment Facilities (WTP & WWTP)

The consortium designs, builds and operates drinking water treatment plants and wastewater treatment plants for municipal and industrial clients. These systems integrate multiple treatment technologies to meet the highest quality and environmental standards.



Drinking Water Treatment (WTP):

High-capacity systems that supply safe, clean drinking water to urban populations—such as the main water treatment plant implemented in Vientiane, Laos, ensuring reliable municipal water supply.



Wastewater Treatment (WWTP):

Efficient municipal and industrial wastewater treatment facilities designed to reduce pollution and protect natural water bodies—for example WWTP in Vientiane, Laos.



Integrated Water Management Services

The H2O Consortium provides strategic planning, engineering and construction services to address complex regional water challenges, including:



Flood Protection and Risk Mitigation:

Flood forecasting, river and flash-flood modelling, levee monitoring, and the design and construction of bank protection and water conveyance structures.



Stormwater and Inland Water Management

Design of comprehensive drainage systems, including integrated solutions for stormwater collection, treatment, storage and pumping.



Regional Water Resources Management:

Expertise in water-resource planning and watershed management, drought monitoring, groundwater assessment and long-term water-quality and environmental sustainability assurance.



Safe and Reliable Drinking Water Supply

We deliver compact and efficient water treatment solutions designed to provide safe drinking water for communities facing water scarcity. Our systems integrate modern treatment technologies—including filtration, membrane processes and disinfection—to ensure consistent water quality and dependable operation in remote and dispersed locations..

Project Highlight

Indonesia Small Water Treatment Plant Program

The program supports water-scarce regions across Indonesia through the installation of modern treatment units.

Scope:

Construction and commissioning of 36 small water treatment plants across four islands.

Sustainability:

Local operator training and knowledge transfer ensure long-term operation and system reliability.

Capacity:

500–1000 m³/day
per plant.





Reliable Municipal and Industrial Solutions

We deliver compact and efficient wastewater treatment solutions integrating mechanical pre-treatment, MBBR biological treatment, lamella clarification and sludge-handling to ensure stable effluent quality and regulatory compliance. Providing robust systems for rapidly growing urban areas and industry.

Project Highlight

Vientiane Wastewater Treatment Plant – Laos

The project supports Vientiane Capital with a modern treatment facility designed for reliable, long-term operation.

Scope:

Full mechanical and biological treatment line including screening, grit removal, MBBR reactors and lamella settlers.

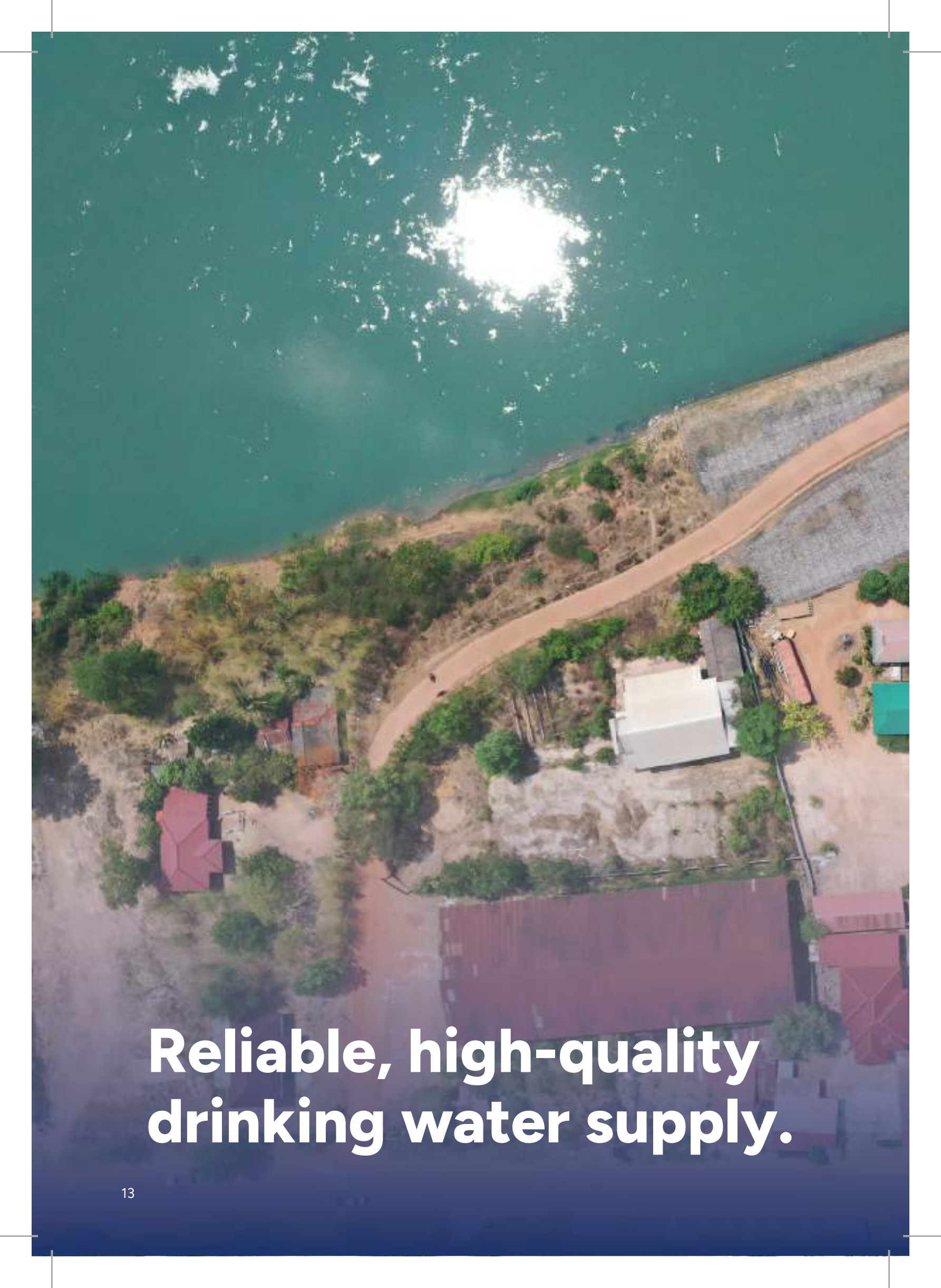
Sustainability:

Optimised biological processes and efficient sludge treatment reduce operational costs and enhance environmental performance.

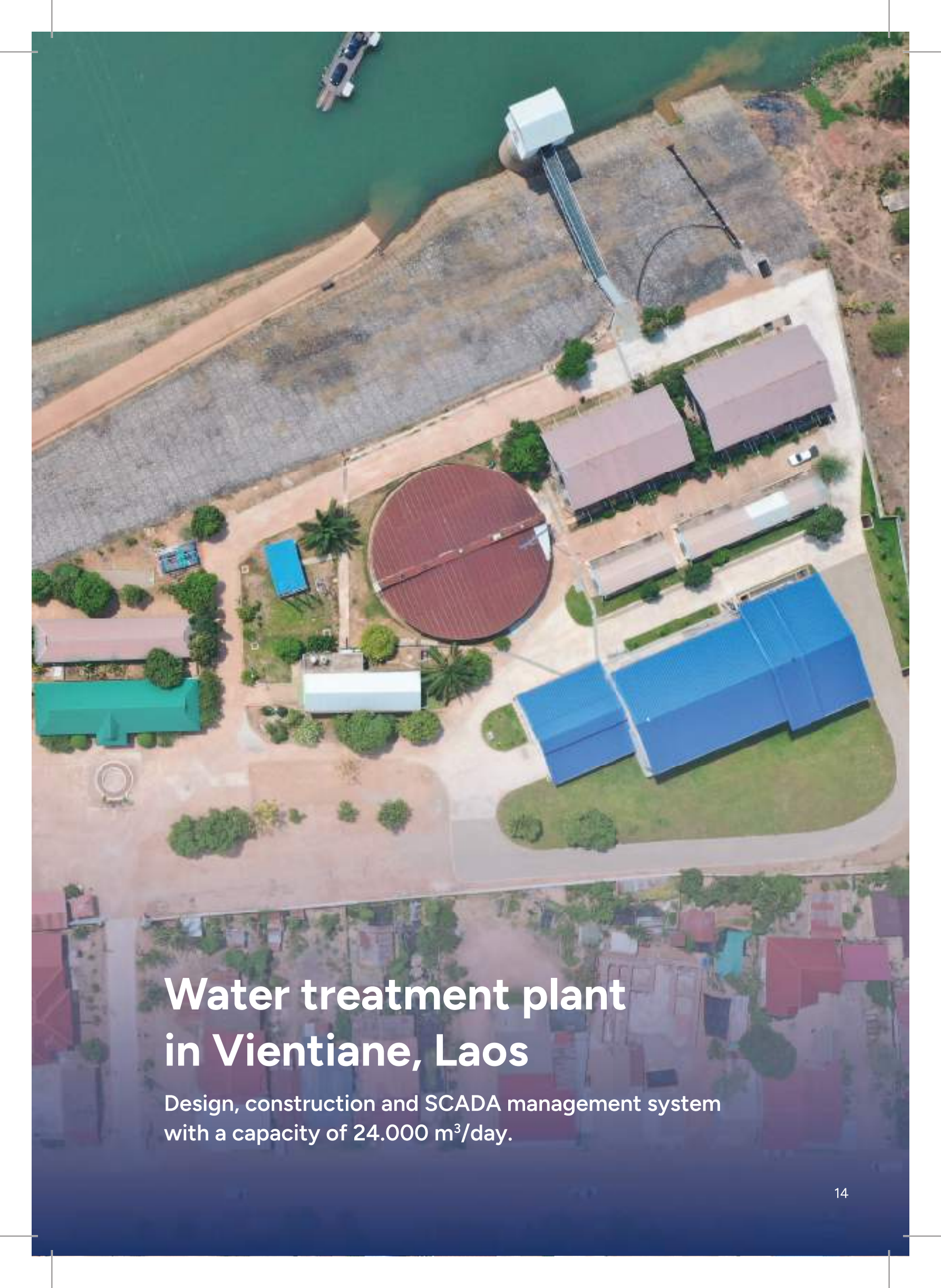


Capacity:

52 MLD total
treatment capacity.

An aerial photograph showing a coastal town. A large body of water with a bright sun reflection is at the top. A winding road runs along the coast. Several buildings, including a large white one and a red-roofed one, are visible. The foreground is a dark blue gradient.

**Reliable, high-quality
drinking water supply.**



Water treatment plant in Vientiane, Laos

Design, construction and SCADA management system
with a capacity of 24.000 m³/day.

TECHNOLOGIES



**Desalination and
Reverse Osmosis
(RO):**

A Solution to Water Scarcity

Our core expertise covers industrial water treatment, wastewater treatment and advanced desalination technologies that convert saline and seawater into safe drinking and irrigation water. A key specialization is seawater reverse osmosis (SWRO), offering a sustainable response to severe water shortages in coastal and island regions.

Project Highlight

Cabo Verde Water Management and Irrigation Development Program

The project aims to ease water scarcity and reduce reliance on imported food across the Cabo Verde islands.

Scope:

Deployment of six SWRO plants on five islands.

Sustainability:

Each SWRO unit is powered by an integrated solar plant, ensuring energy-efficient desalination using renewable energy.

Capacity:

Over 500 m³/h
of combined
permeate output.







Modular rapid-deploy, compact, solutions

For small communities, refugee camps or areas requiring fast infrastructure development, the H2O Consortium provides mini water treatment plants delivered as containerized, compact and immediately deployable units.

Key Features

Capacity:

Designed for small-scale supply, with outputs ranging from 20–500 m³/day.

Mobility:

Compact, transportable and modular designs enable quick installation and easy expansion.

Automation:

Fully automated, PLC-controlled systems with remote (Wi-Fi) monitoring, ensuring simple operation and maintenance.

Sustainability:

Energy-efficient, cost-effective operation with solar-power options and minimal chemical demand.



Successful Deployments

Our containerized & pallet sized water treatment systems are operating successfully in Papua New Guinea, Laos and the Rwamwanja refugee settlement in Uganda.



Mobile Containerized Reverse Osmosis (RO) System

The unit provides 1,000 liters of treated water per hour. Based on an average drinking water demand of 3 liters/person/day, the system can supply the hourly needs of 333 people, or up to 6,660 people with 20 hours of daily operation. The container includes a storage tank with a minimum capacity of 2,400 liters of purified water, ensuring uninterrupted supply during treatment cycles.

Weight:

1,576 kg

Dimensions:

5 m (length) × 2.2 m (height) × 2 m (width)

Power supply:

Operates from single- or three-phase grid, with a maximum power demand of 4.5 kW

Mobility:

Fully mobile; with tanks emptied, the unit can be crane-moved at any time and transported in a 40' HC container

Scalable Water Treatment



Mini

Capacity Range: 20-500 m³/day

Designed for rapid deployment: These fully integrated units are ideal for small communities, remote settlements or temporary facilities, offering quick installation, minimal site preparation and reliable drinking-water production even in challenging environments.



Medium

Capacity Range: 500-10 000 m³/day

Custom-engineered steel-structure systems that provide durable, long-life water treatment solutions: Their robust design allows easy installation, flexible expansion and seamless adaptation to local conditions, making them suitable for both municipal and industrial applications.

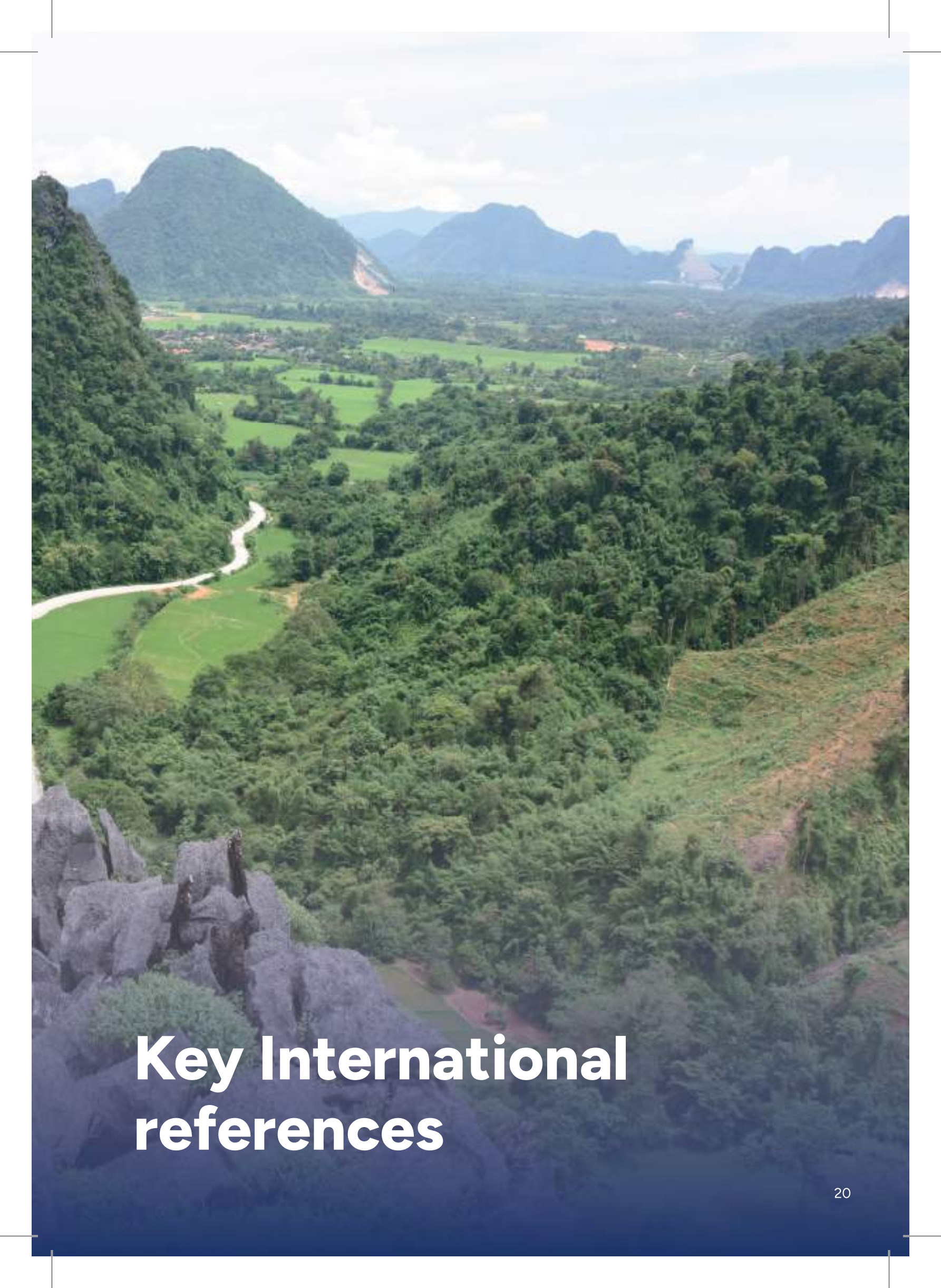


Large

Capacity Range: 10 000-100 000 m³/day

Custom-engineered steel-structure systems that provide durable, long-life water treatment solutions: Their robust design allows easy installation, flexible expansion and seamless adaptation to local conditions, making them suitable for both municipal and industrial applications.





Key International references



KEY INTERNATIONAL REFERENCES

Cabo Verde Seawater Desalination (SWRO) Plants - Project of Water Mobilization for Agriculture

Project Overview

Cabo Verde is an island country near the Sahara Desert that faces serious water shortages due to its dry climate. It relies on energy-intensive and costly seawater desalination for drinking and irrigation. This project aims to produce fresh water through desalination while powering the system with solar energy.

Project Scope

Implementation of seawater desalination (SWRO) plants and solar power farms across multiple locations to provide affordable irrigation water for agriculture and reduce dependency on expensive imported food.



Main Project Elements

- 6 seawater reverse osmosis (SWRO) plants across 5 islands
- More than 500 m³/h permeate capacity in total
- Solar power farms at each location to ensure a sustainable energy supply for desalination
- Training program for local personnel to manage the SWRO plants.

Data Sheet

Location	System	Feed Water (m ³ /h)	Low-/High-Pressure	Water Quality (µS/cm)	Product Water (m ³ /h)
Achada Baleia	2×30 m ³ /h	~110	4-6 / 50-55 bar	500–600	~60
Achada Ponta	200 m ³ /h	~450	4-6 / 50-55 bar	1000–1200	~200
Maio and other sites	50 m ³ /h	~110	4-6 / 50-55 bar	1000–1200	~50



KEY INTERNATIONAL REFERENCES

Irrigation Development Project at Ahero – Republic of Kenya

Project Overview

This project supports poor and vulnerable communities in Kisumu County by improving farming conditions and living standards. It reduces farming costs by using solar energy to power the Ahero Pumping Station and brings water to more land for agriculture. The project also helps protect the riverbank and supports long-term settlement and food security in the area.



Project Scope

Rehabilitation of the Ahero Pumping Station to reduce agricultural production costs, expand irrigation infrastructure, and enhance climate resilience and living conditions for vulnerable communities in Kisumu County.

Main Project Elements

- 💧 Ahero Pumping Station rehabilitation and upgrades
- 💧 Installation of 500 kWp solar PV power system
- 💧 Construction of riverbank protection and water conveyance systems for the Nyando River
- 💧 Irrigation Infrastructure Expansion: Additional 1,000 acres served



KEY INTERNATIONAL REFERENCES

Dongbang Water Treatment Plant - Vientiane, Laos

Project Overview

Vientiane's drinking water demand exceeds the current supplier capacity. Supply problems are frequent, and network pressure is low in many areas. This project aims to ensure a stable, high-quality water supply by expanding treatment capacity and upgrading infrastructure.



Project Scope

Expansion of the Dongbang Water Treatment Plant to increase capacity and improve water supply reliability and quality for Vientiane's growing population.

Main Project Elements

- ◆ Capacity Expansion: +24,000 m³/day water treatment capacity
- ◆ Advanced Treatment Process: Includes coagulation, sedimentation, rapid filtration, and disinfection
- ◆ Infrastructure Improvements: Upgrades to raw water intake, storage, and transmission systems
- ◆ SCADA-Controlled System: Fully automated and remotely monitored for efficient plant management



KEY INTERNATIONAL REFERENCES

Karenge Water Treatment Plant Expansion – Kigali, Rwanda

Project Overview

Rapid urbanisation in Kigali has caused serious water supply shortages. To ensure long-term access to clean water, expanding the Karenge Water Treatment Plant is a top priority in Rwanda's Water Master Plan. The project will boost the city's water treatment capacity and improve public health for much of the population.



Project Scope

Design and construction of new infrastructure to significantly expand the capacity of the existing Karenge Water Treatment Plant.

Main Project Elements

- Expansion of existing plant from 12,000 m³/day to 48,000 m³/day in this phase
- Future expansion planned to 120,000 m³/day
- Population Served: Approx. 615,000 people (over 30% of Kigali's population)
- Impact: Improved hygiene, better public health infrastructure



KEY INTERNATIONAL REFERENCES

IKK Water Supply Program – Indonesia

Project Overview

In many rural regions of Indonesia, access to safe drinking water is limited due to insufficient treatment capacity, unreliable infrastructure, and challenging operating conditions. Water scarcity and supply disruptions are common, particularly in remote communities.



Project Scope

Expansion of rural water supply infrastructure in Indonesia through 36 water treatment plants, improving access to safe and reliable drinking water for underserved communities across Sumatra, Java, Sulawesi, and Flores.

Main Project Elements

- ◆ Providing clean drinking water to 500,000 people across 36 rural locations
- ◆ Each plant designed for 500–1,000 m³/day water treatment capacity, supported by up to 600 m³ of storage
- ◆ Installation of 20 kW on-grid solar power systems at each site to reduce operating costs and environmental impact
- ◆ PLC SCADA-controlled systems enabling fully automated operation and remote monitoring



KEY INTERNATIONAL REFERENCES

Laos, Vientiane - Wastewater Treatment Plant

Project Overview

The goal of the “Water Treatment Project” is the improvement of the environmental and human health conditions of Vientiane Capital by implementing a proper sewage system and wastewater treatment plant for the centre of the capital and improvement of the water treatment plant.

Project Scope

Wastewater treatment plant in Laos with a capacity of 52.000 m³/day, including construction works of pump station No. 15 and pressure pipe system. The first phase of the completed wastewater treatment plant treats wastewater from approximately 80,000 residents in Laos' capital, Vientiane.

Main Project Elements



Wastewater Treatment Plant

The wastewater treatment involves the following steps:

1. Mechanical pretreatment
2. Biological treatment with Hybrator (MBBR) process
3. Sludge treatment and storage

In the Hybrator process, microorganisms that degrade organic matter grow in a thin biofilm on special plastic media that floats in the aerated reactor. This ensures high contact between air and microbes, a high biomass concentration, and controlled sloughing as the biofilm thickens.

Sewer system

Construction of a collector and pressure pipe system with 26.000 m³/d mechanical capacity



KEY INTERNATIONAL REFERENCES

Oasis Water Treatment Plants, Rwamwanja Refugee Settlement, Uganda

Project Overview

Uganda has a prominent role in handling the global refugee crisis, as it has opened its borders and gave shelter to refugees. The Rwamwanja refugee settlement operates in the Kamwenge district, which has a total population of 495,400 inhabitants.

Project Scope

The aim of the project is to provide drinking water for people living in Rwamwanja Refugee Settlement with water purification units, thereby improving the living conditions of the people living in the refugee settlement.

The OASIS FW6 water purification systems provide clean drinking water for refugees and local residents at three schools in the Rwamwanja Refugee Settlement: St. Michael Primary, Nkoma Primary and Secondary, and Kyempango Primary. Each system has a nominal capacity of 6,000 liters per hour, producing up to 432,000 liters of high-quality drinking water per day across all three sites.

Main Project Elements

- Two-step purification: disc filtration and ultrafiltration, followed by disinfection
- 40,000-liter storage tank ensures continuous supply during cleaning and maintenance
- Fully automated PLC system with remote monitoring; solar-powered, grid-ready
- Treated water is stored in elevated tanks for gravity-fed distribution, reducing electricity use.



Key References in Hungary



Industrial and Drinking Water Supply, and Water Treatment

Nyergesújfalu – LG Toray Industrial

Complete design documentation for the raw-water intake system, the reverse-osmosis-based industrial water treatment plant, and the treated wastewater discharge network.

Bridgestone, Környe

Construction and tender design for a reverse osmosis system equipped with activated carbon filtration, dual-column softening, phosphate and corrosion inhibitor dosing, and oxygen scavenger dosing units.

Zalavíz Zrt. Service Area

Drinking water quality improvement and water-supply development across multiple municipalities for the regional water utility.



Agricultural Water Supply and Irrigation Development

National Land Centre

Environmental permitting documentation and water-rights permit designs for multiple national irrigation development projects.





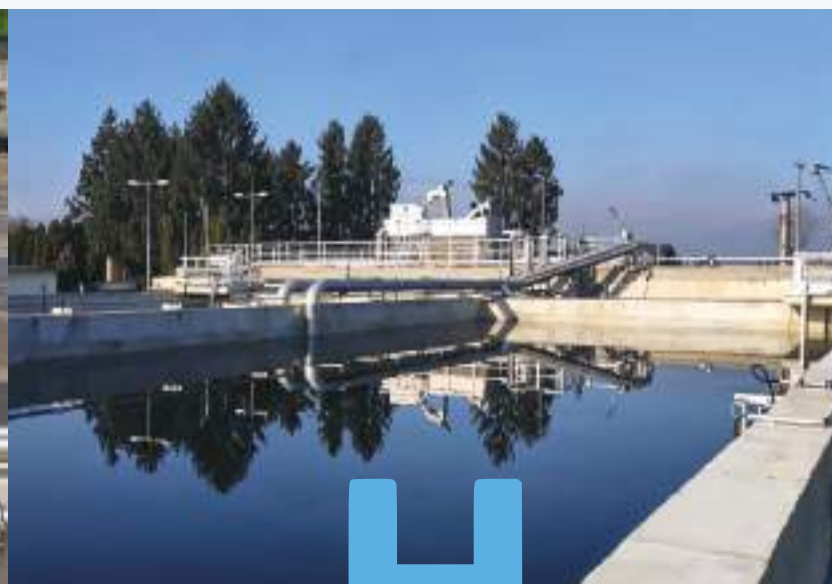
Regional Water Management

Kisalföld Region

Development of a regional water-resource management plan to ensure long-term sustainable use of surface and groundwater resources.

Various Hungarian Regions

Feasibility studies, preparation of complex regional drinking water and wastewater collection/treatment projects, and full project management support (e.g., Tápió Region).



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Wastewater Treatment

Ivánca Industrial Park

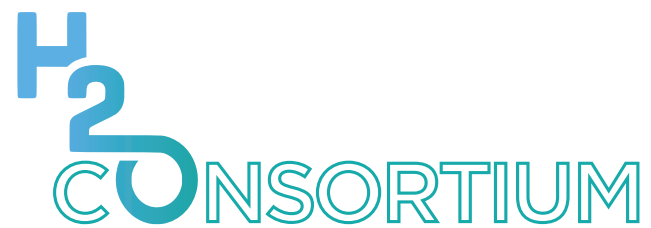
Water-rights permitting and construction design for a new wastewater treatment plant.

MOL Petrochemicals

Feasibility study and conceptual design for the reconstruction of the industrial water-supply system.

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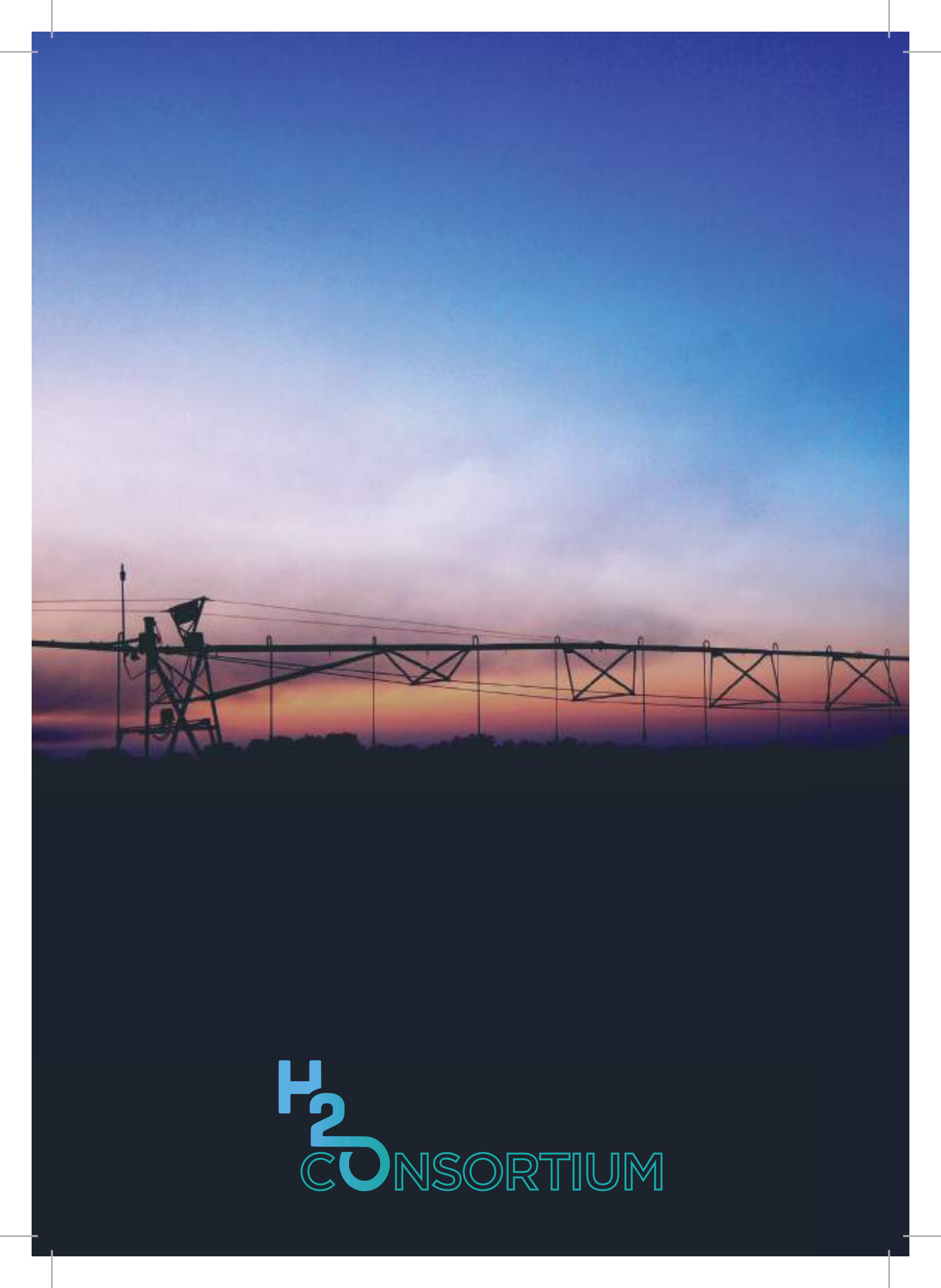
Get in Touch

Our team is always ready to support you with water management, nature conservation and environmental protection challenges. Feel free to contact us with any questions.



SCAN ME



A photograph of a power transmission tower and its associated lines, silhouetted against a vibrant sunset sky. The sky transitions from a deep blue at the top to a bright orange and yellow near the horizon, with some wispy clouds. The tower is a complex lattice structure, and the lines stretch across the frame. The foreground is dark and indistinct.

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