



E.M.A.
COMPANY

Water Resilience Network

Safe Water, When It Matters Most



NORTH-EASTERN
CLUSTER OF UKRAINE

700,000

People Without Access to Safe Drinking Water

Access to safe drinking water has become a critical challenge in Ukraine, largely due to the ongoing destruction of essential infrastructure caused by the Russian Federation. Systematic attacks on critical facilities across the country have severely disrupted water supply systems and threatened the well-being of millions of people.

One of the most devastating impacts was the destruction of the Kakhovka Hydroelectric Power Plant, which triggered a major environmental disaster and deprived more than 700,000 people of reliable access to water.

This environmental crisis not only poses an immediate threat to drinking water availability but also creates long-term risks to water quality. Flooded industrial facilities, cemeteries, storage sites, and other infrastructure have introduced hazardous contaminants into water sources, rendering them unsafe for human consumption.

In addition to conflict-related damage, Ukraine faces growing water security challenges driven by climate change. Floods, extreme weather events, and other natural disasters further increase the vulnerability of water supply systems and place additional pressure on communities already affected by the war.



CHALLENGES

Loss of critical infrastructure

Barriers to recovery and reconstruction

Destruction of the Kakhovka
Hydroelectric Power Plant

Contamination of water bodies

Declining groundwater levels

Flooded and damaged wells

Risk of water scarcity

Aging water supply systems

Insufficient water treatment capacity



SOLUTIONS

Autonomous water supply systems

Innovative technologies

Guaranteed access to safe water

Advanced water purification solutions

Optimized water resource
management and utilization

ABOUT THE PROJECT

Water Resilience Network — is an initiative of the Sumy Regional State Administration aimed at establishing a network of mobile, autonomous water security hubs to provide communities with safe drinking water during emergencies, technological disasters, climate-related challenges, and disruptions to critical infrastructure.

The first component of the network is MWSN-100 — a mobile drinking water treatment and distribution station with a daily production capacity of 100 m³.

PROJECT INITIATORS



Project Initiator
Sumy Regional State Administration



Technology Partner
E.M.A. Company «E.M.A.» LLC

Pilot Project Region

Sumy Region, Ukraine

PROJECT OBJECTIVE

To establish a scalable network of backup water supply solutions for communities, ensuring uninterrupted access to safe drinking water regardless of the operational status of centralized water infrastructure.

10 000 people can be provided with safe drinking water every day

100 000 liters of drinking water can be produced daily by a single MWSN-100 unit

IMPACTKPI

36.5 million liters	Annual Drinking Water Production
730 million liters	Lifetime Drinking Water Production
Up to 4 hours	from arrival on site to the start of water distribution
48 hours	of autonomous operation without external infrastructure

Why

IT MATTERS

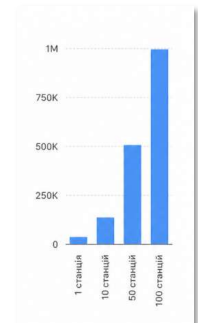
FOR UKRAINE

- ✓ Backup water supply capacity for communities
- ✓ Protection of critical infrastructure
- ✓ Reliable water provision for hospitals and civil protection facilities
- ✓ Enhanced preparedness for emergency situations

FOR EUROPE

- ✓ Adaptation to climate-related risks
- ✓ Rapid response to natural disasters
- ✓ Emergency water supply capacity for civil protection operations
- ✓ Increased resilience of municipal infrastructure
- ✓ Development of a strategic water security reserve.

Ukraine is developing a scalable solution to ensure uninterrupted access to safe drinking water during crises, technological accidents, climate-related challenges, and disruptions to critical infrastructure.



NETWORK SCALING POTENTIAL

Indicator	1 Station	10 Stations	50 Stations	100 Stations
Population Served	10 000	100 000	500 000	1 million
Water Production per Day	100 m ³	1 000 m ³	5 000 m ³	10 000 m ³
Water Production per Year	36 500 m ³	365 000 m ³	1,8 million	3,65 million

Ready-To-Deploy Solution

THE MWSN SOLUTION

MWSN is a mobile, autonomous drinking water treatment and distribution station designed to provide communities with safe drinking water during emergencies and disruptions to critical infrastructure.

The station delivers a complete drinking water treatment cycle using surface water sources, can be deployed in less than 4 hours, and operates autonomously for up to 48 hours without external infrastructure.

HOW THE STATION WORKS

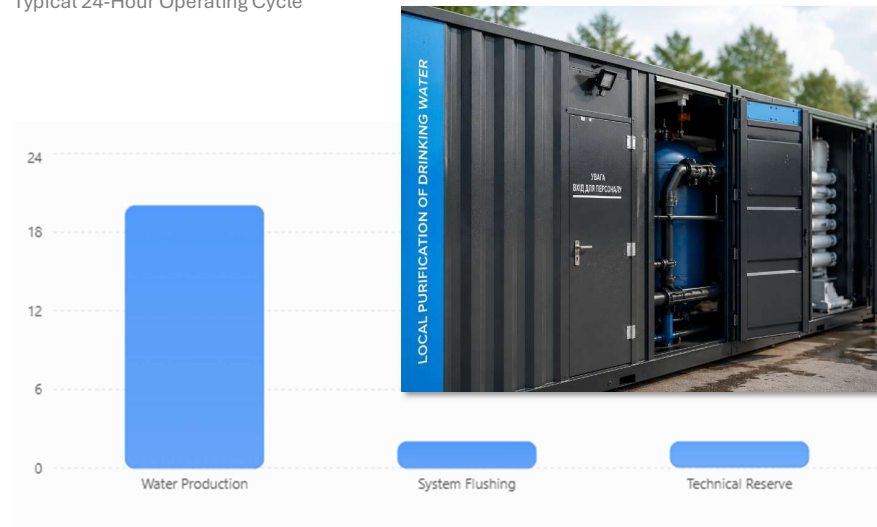
Water Intake ↓

Pre-Treatment → Reverse Osmosis Filtration → UV Disinfection ↓

Water Storage & Reserve Capacity → Distribution to the Population → → →

DAILY OPERATIONAL CYCLE

Typical 24-Hour Operating Cycle



Advanced Technology

READY FOR DEPLOYMENT

Fully Autonomous Modular Water
Treatment Station

The MWSN solution is a fully integrated, ready-to-deploy modular water treatment station designed for autonomous operation in emergency and resilience scenarios.

Advanced technologies combined with our extensive experience in developing modular systems enable the integration of high-performance treatment equipment within a compact footprint.

We recognize that water quality varies significantly depending on the source. Groundwater, surface water, industrial water, and alternative water sources each present unique treatment challenges.

Our team possesses extensive expertise across the full spectrum of water treatment technologies and applies this knowledge to design the optimal treatment solution for each specific location and water source.



TECHNOLOGY PLATFORM

Mechanical Filtration

Water Softening

Water Conditioning

Oxidation

Iron & Manganese Removal

Microfiltration / Ultrafiltration

Chemical Water Treatment

Nanofiltration

Reverse Osmosis

Demineralization

Ion Exchange

UV Disinfection

Ozone Disinfection

Distillation

Cooling Tower Water Treatment

Coagulation & Flocculation

Water Reuse & Recycling

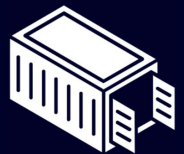
Advanced Technology

REINFORCED STRUCTURE

Heavy-Duty Container Construction

The external module frame and reinforced structural chassis are engineered for repeated deployment, transportation, and relocation without compromising system integrity.

Heavy treatment and filtration equipment is securely fixed within the structure, eliminating the need for recalibration or reconfiguration after transportation.



2mm

PROTECTION

Anti-Vandal and Blast-Resistant Exterior Cladding

The station is protected by a **2 mm corrugated steel outer shell**, designed to withstand mechanical damage, vandalism, and harsh operating environments. This protective layer also provides additional resistance against shrapnel impact and blast waves, enhancing equipment protection in conflict-affected or high-risk areas.

TECHNICAL SPECIFICATIONS¹

Parameter	MWSN-100 Compact	MWSN-250 Regional
Container Size	20 ft	40 ft
Daily Capacity	100 m ³ /day	250 m ³ /day
Hourly Capacity	5 m ³ /h	10–12 m ³ /h
Population Served	Up to 10,000 people/day	Up to 25,000 people/day
Water Source	Surface Water Sources	Surface Water Sources
Treatment Technology	Filtration + RO + UV	Filtration + RO + UV
Distribution Points	Up to 5	Up to 10
Internal Storage Capacity	1–3 m ³	3–5 m ³
External Storage Tank	20–30 m ³	50–100 m ³
Deployment Time	Up to 4 hours	Up to 6 hours
Autonomy	Up to 48 hours	Up to 72 hours
Generator	35 kW	60 kW
Solar Power System	3 kW	6 kW
Battery Storage	20–30 kWh	50–80 kWh
Operating Personnel	2 persons	2–3 persons
Remote Monitoring	✓	✓
Design Service Life	✓	✓

¹ The specifications and performance indicators presented above are based on preliminary engineering assessments and may be refined during the detailed design phase, pilot project implementation, and the development of the Water Resilience Network solution line.

ERGONOMIC DESIGN

The primary treatment equipment and auxiliary systems are arranged in an optimized layout, ensuring efficient operation, simplified maintenance, and rapid deployment.

CONTAINER FORMAT

20 ft / 40 ft container dimensions enable transportation by any standard transport mode without special permits.

20 ft / 40 ft



DEPLOYMENT

The station is unloaded by crane using the container's four lifting points, with all equipment securely fixed and ready for operation.



FACTORY-ASSEMBLED SOLUTION

All equipment and systems are fully integrated, configured, and tested at the manufacturing facility prior to deployment.



Water Treatment Equipment



Pumping Systems



Valves & Instrumentation



Lighting System



Climate Control System



Power Supply System



Fire Suppression System



AUTOMATED CONTROL SYSTEM

The station operates through an integrated automation system with remote monitoring capabilities.

Pump station automation enhances water supply efficiency, reduces energy consumption, and ensures reliable, uninterrupted operation of the water treatment system.

Integrated control algorithms manage each stage of the treatment process, automatically adapting system performance to operational requirements and source water conditions.

- ✓ Centralized Control System
- ✓ Water Quality Monitoring
- ✓ Automated Pumping System
- ✓ Energy Efficiency Management
- ✓ Filtration & Treatment Control
- ✓ Real-Time Alert System
- ✓ Emergency Shutdown & Fire Protection Systems



Operations

PRACTICAL & SUSTAINABLE



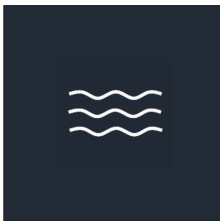
A reliable and environmentally responsible solution for resilient water supply.

The treatment system effectively purifies water from rivers, flooded wells, reservoirs, and collected rainwater..

When required, the station can operate directly from the vehicle chassis, enabling rapid deployment and immediate use.

Simply connect the intake hose to a water source, and the station automatically pumps, treats, and purifies the water.

Treated water is automatically transferred to dispensing tanks for safe and efficient distribution to the population.



Potential

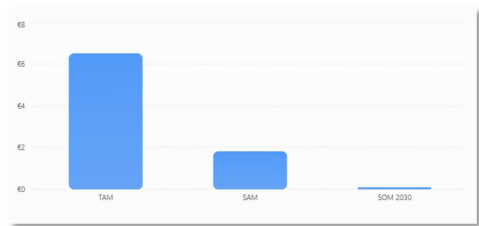
MARKET OPPORTUNITY & SCALING POTENTIAL

Water Resilience Network is being developed as a scalable backup water supply platform for communities, critical infrastructure operators, and civil protection systems across Ukraine and Europe.

TAM	SAM	SOM 2030
€6,5 B	€1,8 B	€70 M
Potential Communities in Ukraine 1 400+	Potential Deployment Locations 100+	Potential Network 100+ станцій

Market Opportunity

Assessment of the total, serviceable, and target market for the Water Resilience Network.



More than **1,400 communities in Ukraine** and thousands of municipalities across Europe require resilient backup water supply solutions and enhanced protection of critical infrastructure.

The total addressable market for Water Resilience Network is estimated at **€6.5 billion**.

Potential

SUMY REGION PILOT NETWORK

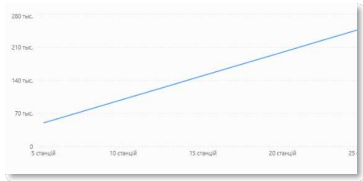
The first phase of the Water Resilience Network will establish a regional network of **25 MWSN-100 mobile stations** strategically deployed across Sumy Region.

The network will provide emergency access to safe drinking water in the event of damage to, or loss of, centralized water infrastructure.
The pilot network will serve up to **250,000 people daily** and produce up to **912.5 million liters of drinking water annually**.

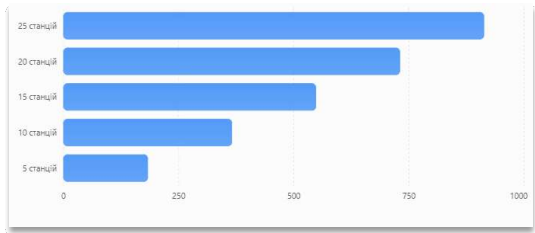
With a total investment requirement of approximately **€4.35 million**, the project will create a scalable model for regional water resilience that can be replicated across Ukraine and adapted for civil protection and emergency preparedness initiatives throughout Europe.

25	Stations
€174 тис	Cost per Station
€4,35 млн	Total Investment
250 000 людей	Population Protected
912,5 млн	Annual Drinking Water Production

Potential Population Coverage



Annual Drinking Water Production



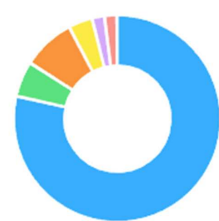
PROJECT IMPLEMENTATION

Implementation Model

The Water Resilience Network is delivered through a partnership between public authorities, local communities, the private sector, and international partner

Stakeholder	Role
Sumy Regional State Administration	Project initiator and implementation coordinator
Communities of Sumy Region	Deployment locations and operational management
E.M.A. Company	Design, manufacturing, installation, and maintenance
International Partners & Donors	Funding and support for scaling

Investment Allocation



The majority of the investment budget (**€4.35 million**) will be allocated to the production and equipment of **25 MWSN-100 stations**.

Additional funding will support engineering design, installation, logistics, digital monitoring systems, commissioning, and operational readiness.

The investment will establish Ukraine's first regional backup water supply network, capable of providing safe drinking water to up to **250,000 people** during emergencies and critical infrastructure disruptions.



Production of 25 MWSN-100 Stations	€4,35 M
Engineering & Design	€0,30 M
Installation & Logistics	€0,45 M
Digital Monitoring & Dispatch System	€0,20 M
Training & Commissioning	€0,10 M
Project Management & Contingency Reserve	€0,10 M

RESILIENCE STARTS WITH PREPAREDNESS

Water Resilience Network is a practical solution designed to ensure uninterrupted access to safe drinking water during emergencies, climate-related challenges, and disruptions to critical infrastructure.

The pilot project in Sumy Region will establish Ukraine's first regional backup water supply network and create a scalable model that can be replicated across Ukraine and other European countries.

PARTNERSHIP OPPORTUNITY

We invite governments, international organizations, development institutions, donors, and private-sector partners to join us in building resilient water infrastructure.

Together, we can deliver safe drinking water to communities when they need it most.

CONTACTS

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