

# **MICRO-HYDROPOWER PLANT FROM THE MOLDOVA RIVER MHC ROMAN 1**





UNIUNEA EUROPEANĂ



GUVERNUL ROMÂNIEI

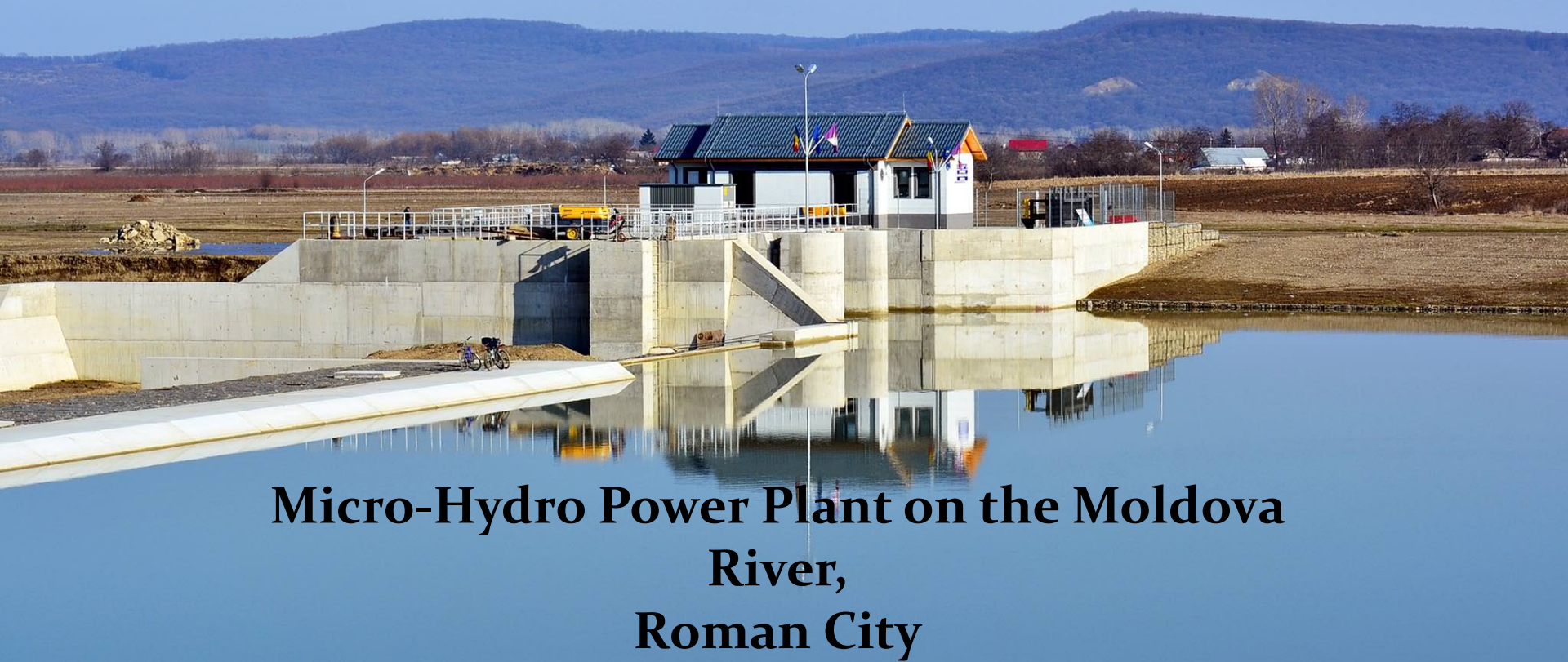


MUNICIPIUL ROMAN



Instrumente Structurale  
2007-2013

**Sectorial Operational Program  
“Increasing Economic Competitiveness”  
“Investments for your future”**



**Micro-Hydro Power Plant on the Moldova  
River,  
Roman City**

**Project co-funded by the  
European Regional Development Fund**

**THE MAIN CONTRACTOR COMPANIES :**

**CONSTRUCTII HIDROTEHNICE IASI, ROMANIA**

**MJ<sub>2</sub> TECHNOLOGIES FRANCE**

**OBERMEYER HYDRO, INC. USA**



**The Micro-hydropower Plant is located on the right bank of the river Moldova**



## PHOTO FROM CONSTRUCTION SITE



# Hydrogenerator Group VLH (Very Low Head)



# Assembled Hydro Generator Groups, ready for installation in MHC cells



# The VLH incorporates the following functions:



- Standardized Kaplan turbine with 8 adjustable blades according to the upstream level and to the flow.
- Self-supporting structure enabling complete factory assembly and very fast mounting or dismounting.
- Slow direct-drive variable-speed permanent-magnet generator.
- The **VLH** stops by closing its blades. **VLH** installations do not require upstream gates to stop the unit.
- Distributor used as a protection grid.
- Built in rotating trash rake cleaner.
- Electronic full output frequency converter.
- Integrated electronic control equipments managing the turbogenerator unit and the power electronics equipments.
- Withdrawal device enabling taking the unit out of the water for maintenance.

# Technical Data:



**Two Turbines type VLH Ø 3550mm;**

**Installed Power 580 Kw (2x290 Kw);**

**Installed Debit 28,80 mc/s  
(2x14,4 mc/s);**

**Gross Head 2,80 m;**

**Net Head 2,66 m;**

**The production of electricity in the hydrological average year is 3,00 GWh/year.**

# VHH Electrical, hydraulic and pneumatic equipment for control and protection



# Main Operator Panel



# SPILLWAY GATE



**OBERMEYER**

Ideas that hold water™  
**HYDRO, INC.**



**The spillway gate is part of a hydropower plant and is used to regulate the water height in the river. The gate is raised or lowered by inflating or deflating the bladders underneath.**



**Spillway gate system is controlled pneumatically, it can be controlled manually or automatically to maintain a constant water level upstream and/or downstream of the gate system to ensure proper operation of the turbines.**

The compressed air supply system provides a constant supply of clean, dry, compressed air to the spillway gate system. Filters and dryers are included in the air supply system to prolong the life of the pneumatic components located in the Air Control Cabinet and Air Bladders.



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**HYDRO, INC.**

# The Spillway Gate Control Panel



# Long-term benefits

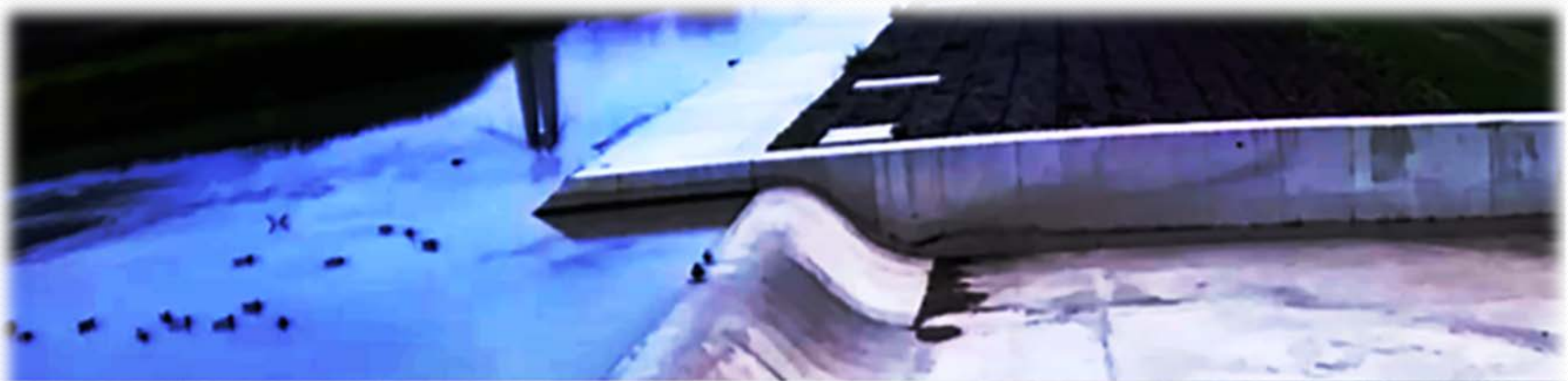
- Reducing energy costs for institutions providing services of general public interest;
- Increasing the standard of living by producing non-polluting electricity from renewable sources in the medium and long term;
- The active involvement of the local public authority in the process of capitalizing on renewable energy resources
- Protecting the environment by reducing pollutant emissions and combating climate change

Measures to protect fish fauna, the specific features of the VLH turbogenerators make it on principle particularly respectful of fish populations



In the area of the micro-hydropower plant, has developed a variety of habitats, flora and fauna







# VLH TURBINE 3D ANIMATION

