

Hydroergia is an extensively experienced company working in the field of hydropower. The company's innovative solutions have been appreciated in the GreenEvo - Green Technology Accelerator project funded by the Polish Ministry of Environment. The company is also awarded in *Gryfy Dolnośląskie* –the economic program. The company has also been nominated for the “Teraz Polska”, a prestigious Polish quality emblem.

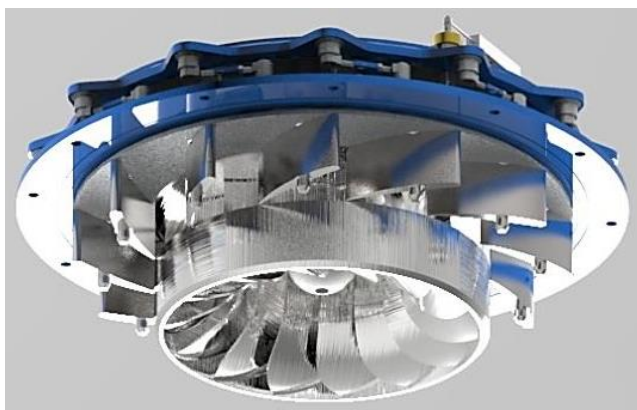
We specialize in the design and production of Francis water turbines (assembled in the open chamber and spiral) tailored to individual hydrological parameters of a location. Our offer consists of various types of both vertical and axial turbines and of optional configurations:

- Horizontal chamber open
- Horizontal in a spiral
- Vertical in the open chamber
- Vertical in a spiral
- Two turbines on a common shaft with one generator



The turbine is designed by means of modern graphics programs 3D Solid Edge ST, as well as numerical modeling of flow dynamics (CFD). With such an expanded technology it is possible to determine the parameters of the turbine already at the construction stage. In our company, each turbine is equipped with individually designed runner blades and guide vanes, making it possible to adapt the turbine to work in a wide range of functions rate from 15% to 100% of the installed turbine water flow, while achieving high efficiency greater than 90%.

The turbines are manufactured from stainless steel using the latest technology. Each Francis Turbine is equipped with the guide vanes regulation system. The angle of guide vanes depends on the flow. The angle is automatically set to maintain fixed rotational speed and to achieve the highest possible efficiency, which directly translates into the highest possible volume of electricity production.



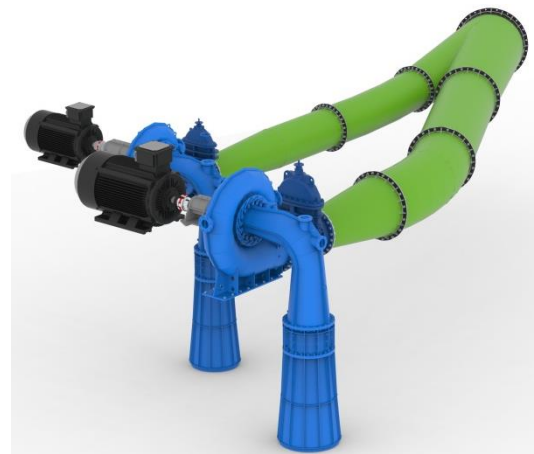
VERTICAL / HORIZONTAL FRANCIS TURBINES - PARAMETERS

	min	max
Diameter	400 mm	3200 mm
Power	5 kW	-

GREENEVO
TECHNOLOGY ACCELERATOR



Modernized old
SHP (1922)



The implementation of Francis technology as an Energy Recovery System SHP in sewage treatment plant in Toruń - POLAND

Hydroergia has completed the investment of a new Energy Recovery System as a Small Hydropower Plant system in sewage treatment plant in Toruń. This is an innovative idea which brings better energetic, ecological and financial ratio to the company. The system distinguishes Toruńskie Wodociągi Sp. z o.o. as a very original and prestigious business.

Hydroergia as a turbine manufacturer of SHP Toruń completely fulfilled the contract which covered:

- Design, production and installation of a new Francis Turbine (D=750 mm) in spiral casing
- Design and manufacture of a draft tube made of stainless steel
- Full automation of SHP with SCADA system:
 - Automatic setup of guide vanes
 - Keeping upper water on the proper level
 - Lower water level control
 - Online service and control of the parameters
 - Automatic start and shutdown of the turbine in case of voltage disappearance



PARAMETERS OF SHP Toruń

Diameter	750	mm
Power	65	kW
Head	7,0	m
Flow	1,2	m ³ /s

The benefits of the individual solutions are:

Cash profits

Savings in buying electricity from the grid – 14 %

- *Improving the energy balance of the company*
- *Increasing the degree of energy independence*

As the only company on the Polish market, we design, optimize, and tailor each turbine to a specific location, taking into account both customer's requirements and the most economical use of the potential of the watercourse, concerned with the principles of environmental protection and to minimize interference with the local ecosystem.