



VAPHYDRO

by VAPTECH



Small Hydro



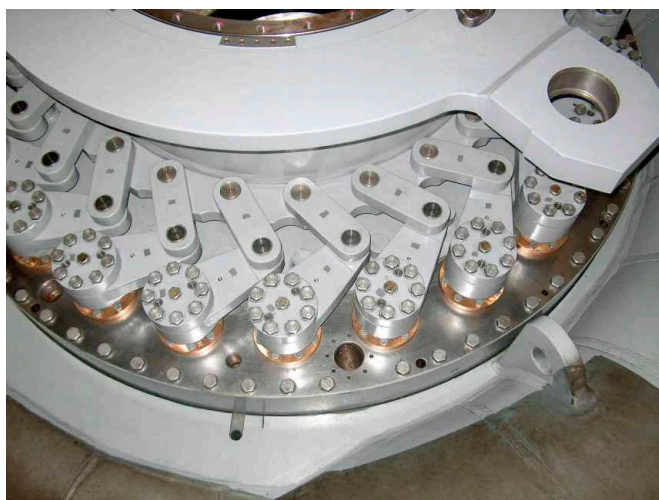
Welcome to VAPTECH!

VAPTECH is a global supplier of solutions and services for hydropower stations, the metal forming industry and plant automation. Since its creation in 1914, the company has developed from a small metal-craft workshop into a successful organization delivering cost-effective and high-quality products. The company concentrates its activities in four areas:

- HYDRO
- PRESS
- SERVICE
- AUTOMATION

IN BRIEF

- Almost 100 years of industry expertise
- Projects in more than 40 countries
- More than 400 employees
- ISO 9001:2008 certified



VAPHYDRO

VAPHYDRO is a registered trademark of VAPTECH in the field of hydropower products and services.

From single components to complete electromechanical equipment, from servicing to modernization of existing plants, VAPTECH supplies quality solutions for plant operators.

For 100 years, VAPTECH has delivered cost-effective solutions to its customers. As a reliable partner we are working closely with our clients in order to maximize the return on investment in each hydro project. Vaptech has an extensive expertise in the delivery of hydropower solutions worldwide.

Our competencies:

- Small hydro
- Turbines
- Valves
- Gates
- Automation



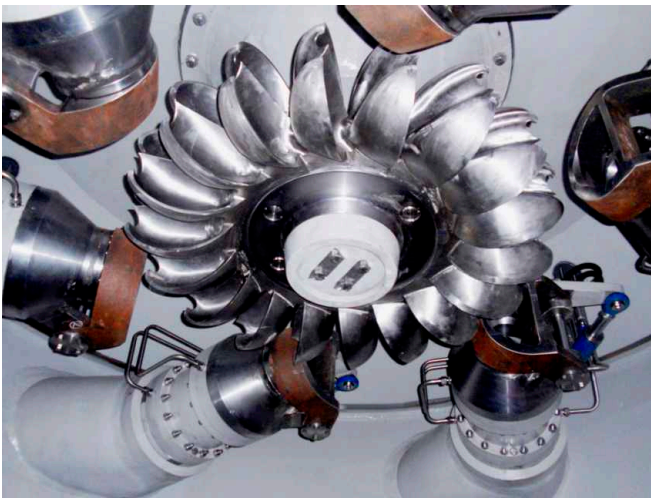
SMALL HYDRO

Complete electromechanical systems for hydropower plants with output up to 30 MW

Vaptech have an extensive experience in delivering high-quality and cost-effective solutions to power plants operators worldwide. As your reliable partner we will accompany you throughout the entire life-cycle of your small hydro project from single component to the delivery of turnkey solutions for new and existing plants.

Our small hydro competencies include:

- Project development, design and high quality manufacturing
- Modernization and rehabilitation of existing plants
- Installation, supervision and launch into operation
- Full electromechanical equipment
- Operation and maintenance
- Francis and Pelton turbines
- Automation systems
- Shut-off-valves
- Gates



TURBINES

Our high-quality equipment is a guarantee for an optimized return on investment. The design of our turbines ensures the highest energy output and a maximum reliability. We focus on delivering fast and creative solutions in line with the specific needs of our clients.

Pelton turbines:

- up to 30 MW
- head up to 1000 m
- horizontal and vertical shaft
- 1 to 6 nozzles

Francis turbines:

- up to 30 MW
- head up to 300 m
- horizontal and vertical shaft



AUTOMATION SYSTEMS

VAPTECH offers tailor-made automation for hydropower. Through careful planning, research and constant investment in the highest automation standards, VAPTECH delivers quality, reliable and affordable solutions for hydropower.

Elements of hydro automation system:

- Electromechanical equipment:
 - governing systems, oil pressure system, control equipment, instrumentation
 - protection systems, excitation systems, security systems
- Automation and Plant Control system:
 - HMI
 - Turbine governor
 - Joint control
 - Gate control
 - River control
 - Monitoring

SELECTED REFERENCES



HPP Retije 3 (Bulgaria)
Turbine type: Pelton HS2
Net head: 525 m
Discharge: 1,1 m³/s
Speed: 750 rpm
Nominal output: 5,1 MW



HPP Katunski (Bulgaria)
Turbine type: Francis HS
Net head: 97 m
Discharge: 4,0 m³/s
Speed: 750 rpm
Nominal output: 3,408 MW



HPP Mikrevo (Bulgaria)
Turbine type: Francis HS
Net head: 150 m
Discharge: 1,15 m³/s
Speed: 1500 rpm
Nominal output: 1,5 MW



HPP Garvanitsa (Bulgaria)
Turbine type: Pelton HS2
Net head: 320 m
Discharge: 0,38 m³/s
Speed: 1000 rpm
Nominal output: 1,05 MW



HPP Vodemil (Bulgaria)
Turbine type: Pelton HS2
Net head: 104 m
Discharge: 0,4 m³/s
Speed: 600 rpm
Nominal output: 0,36 MW



HPP Topolnitsa (Bulgaria)
Turbine type: Francis VS
Net head: 55 m
Discharge: 6,2 m³/s
Speed: 500 rpm
Nominal output: 3,07 MW



HPP Balea (Romania)
Turbine type: Pelton HS2
Net head: 385 m
Discharge: 0,53 m³/s
Speed: 1000 rpm
Nominal output: 1,8 MW



HPP Zla Reka (Bulgaria)
Turbine type: Pelton VS4
Net head: 83 m
Discharge: 0,4 m³/s
Speed: 600 rpm
Nominal output: 0,290 MW



HPP Radac (Kosovo)
Turbine type: Francis HS
Net head: 34 m
Discharge: 1,5 m³/s
Speed: 1000 rpm
Nominal output: 0,445 MW



HPP Dzherman (Bulgaria)
Turbine type: Pelton HS2
Net head: 259 m
Discharge: 1,18 m³/s
Speed: 600 rpm
Nominal output: 2,7 MW



HPP Burim (Kosovo)
Turbine type: Francis HS
Net head: 30 m
Discharge: 1,6 m³/s
Speed: 1000 rpm
Nominal output: 0,412 MW



HPP Dospat 2 (Bulgaria)
Turbine type: Pelton VS6
Net head: 152 m
Discharge: 1,18 m³/s
Speed: 750 rpm
Nominal output: 1,58 MW



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Make what the Planet Needs!

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