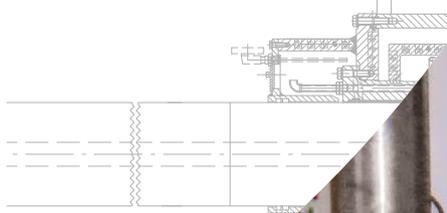


Services



Make what the Planet Needs!



Welcome to **VAPTECH!**

VAPTECH is a project oriented global provider of products and services for hydropower, sheet metal forming, biomass processing and automation. For more than 100 years of existence VAPTECH

has established the worldwide known trade mark **VAPHYDRO** which stands for quality, reliability and precision of custom made products and solutions for new and existing hydropower plants (HPPs).



VAPTECH is certified:

ISO 9001:2008

Quality standard

ISO 14001:2004

Environmental standard

BS OHSAS 18001:2007

Occupational health and safety standard

Hydro Services

VAPTECH is specialized in the field of Hydro Power. It offers a comprehensive range of products and services for new plants and for the modernization of existing ones, namely overhauls, substitute, retrofit and rehabilitation works, among others.

PRODUCTS AND SERVICES FOR IMPROVED PLANT PERFORMANCE:

- Consultancy
- Plant assessment
- Risk assessment
- Residual life analysis
- Substitute and retrofit (MBoP and EBoP)
- Rehabilitation of equipment
- Equipment supply
- Management control for mechanical and electrical balance of plant (MBoP and EBoP)
- Repairs
- Overhauls
- Site inspection
- Spare parts supply
- Technical assistance
- Maintenance
- Installation and commission
- Professional trainings

Benefits:

- Single source of supply
- Project management with single point of contact for project follow-up
- Customized solutions and products according to customer' requirements
- Reduced outage
- Extended spin life of equipment
- Reliability of production equipment
- Low investment cost
- Control over the performance

References



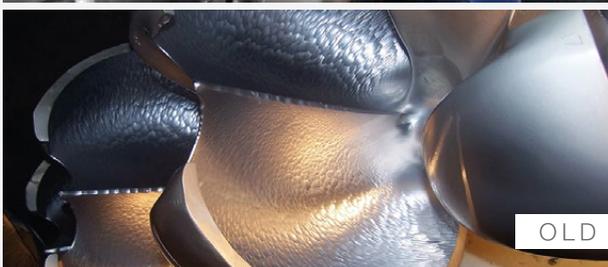
HPP Klisura, Bulgaria

- Rehabilitation of complete Francis turbine, generator (generator shaft and bearings), complete governing hydraulic system of turbines; lubricating oil system of bearings; cooling water system; pressure relief valve
- New radial axial turbine bearing
- Redesign of shaft line bearing system



HPP Tomsani, Romania

- Design, production and delivery of 3 new sets horizontal Francis turbines, Butterfly valves
- Hydraulic governor system
- Synchronous generators
- Supervision and installation



HPP Birkipli, Turkey

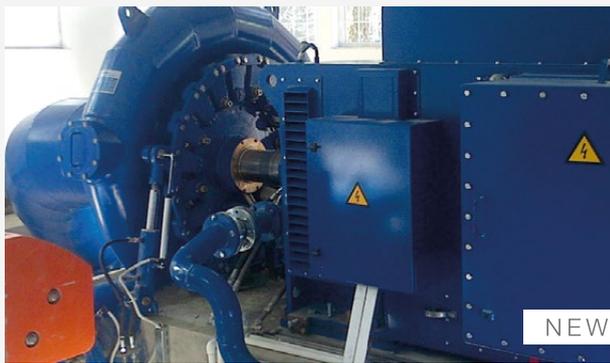
- Replacement of existing Pelton runner by a redesigned interchangeable runner
Turbine output 60 MW



HPP Ladjanuri, Georgia

- Replacement of 2 spherical valves DN 2100 PN 18 bar by redesigned ones with hydraulic system and automation

References



HPP Dikance, Albania

- Modernization of guide vane regulating system, hydraulic speed governor, hydraulic operating system for main inlet valves for 2 existing turbine units
- Upgrade of HPP – new Francis unit x 2.64 MW
- Automation and control system for turbine governor



HPP Ivailovgrad, Bulgaria

- Overhaul services including rehabilitation of bearing system
- Butterfly valve DN 4000 PN 9 bar
- Machining/upgrading of generator shaft



HPP Radac, Kosovo

- Replacement of existing turbines by new ones, including complete electromechanical equipment



HPP Rashmaya, Lebanon

- Replacement of existing Pelton runners by new identical ones
- 3D mechanical design
- Turbine output unit 1 x 5.9 MW, unit 2 x 3 MW

Overhauls, Modernization & Renewal

VAPTECH is honored to work hand in hand with every investor in a hydropower plant in order to protect and maximize its valuable assets. Being aware of the multitude of factors that influence

the operation and output of a hydro installation, VAPTECH supplies highest quality solutions thus providing the best return of investments for its clients and partners.



VAPTECH aims to preserve and extend HPP life and to improve its output where and when possible. With its know-how and experience in the Hydro Power machinery building sector, with its own mechanical workshop located on more than

40 000 sq.m. and its team of highly qualified experts and professionals, VAPTECH provides customized products and services for every plant requirement with the due care and excellence that very few other industry providers can match.

VAPTECH provides services for the complete range of equipment. This includes:

TURBINES

- Francis turbine
- Pelton turbine
- Kaplan turbine
- Pump turbine

AUTOMATION

SCADA system and online monitoring and diagnosis of equipment

Refurbishment of automation and control station system, mechanical protection devices, electric generator protection system and switchgear

VALVES & GATES

- Butterfly valve
- Spherical valve
- Johnson needle valve
- Radial gate
- Stoplock
- Flat gate
- Gate valve

GENERATORS

- Bearing system
- Cooling system
- Oil lubrication system
- Brake system
- Excitation system

ELECTRICAL EQUIPMENT

Solutions and services for all electrical devices in HPP

- Medium voltage
- Electric Balance of Plant (EBoP)



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