

# TURBINES AND HYDRO-ELECTRIC ENGINEERING

ALL FROM A SINGLE SOURCE



**wasserkraft**





# AUSTRIAN QUALITY

At WWS Wasserkraft, we combine a high level of technical know-how with an innovative spirit. Our family enterprise has a wealth of tradition in industrial design and production. Here, man and machine together produce the most modern hydroelectric power plant technology.

## OWN IN-HOUSE MANUFACTURING

Thanks to workshops for turning and milling, welding and hydraulics, we can offer customer-specific solutions and flexible deadlines.

## QUALITY GUARANTEE

Carefully selected supplier companies guarantee high-quality components.

## INNOVATION

WWS customers profit from the innovative development of our turbine runners to constantly improve the efficiency.



Christoph Wagner  
CEO

We are your competent partner for hydroelectric power plant projects – Consulting, planning, execution and revitalization.





# ROBUST. FRANCIS

## LONG LIFE TIME

Our turbine runners are milled out of forged solid material.  
Because: The best welding seam is no welding seam!

## HIGH-PRECISION

Experienced WWS designers continually develop proven geometries in cooperation with the renowned Technical University of Graz.

## LOW-MAINTENANCE

Our compact spiral turbine design guarantees low construction costs and low maintenance effort.

## QUIET

Innovative seals ensure calm operation.

# RELIABLE. KAPLAN



## VERSATILE

Alternative designs facilitate a broad range of applications – for heads from 1 to 40 metres: Powergate, pit turbine, spiral turbine, bulb turbine.

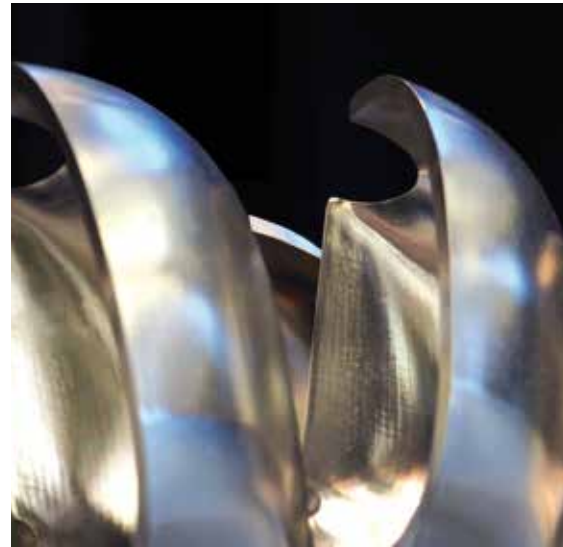
## EFFICIENT

Project-related simulations by our skilled technicians leads to top degrees of efficiency.

## EASY MAINTENANCE

Reliable WWS engineering simplifies turbine maintenance.

# INDIVIDUAL. PELTON



- FLEXIBLE  
Depending on the available discharge rate and the fluctuations of water, this turbine can be of horizontal or vertical design and equipped with up to six nozzles.
- EXACT  
WWS manufacturing standards are based on modern CNC milling technology.
- SAFE OPERATION  
The innovative currentless closing mechanism of WWS turbines provides our customers with safety.

# HYDROELECTRIC ENGINEERING CUSTOM-MADE.

- CUSTOM-DESIGNED HORIZONTAL AND VERTICAL RAKE CLEANING MACHINES
- HIGH-GRADE SLUICE GATES ACCORDING TO HYDROELECTRIC ENGINEERING STANDARDS
- HIGH QUALITY STANDARD DUE TO FULLY GALVANIZED WEIR FLAPS
- DESIGN AND MANUFACTURE OF INDIVIDUAL DRIVE SYSTEMS
- PLANNING AND EXECUTION OF EFFECTIVE FLOOD PROTECTION SYSTEMS





# COMPETENT PARTNER



## INDIVIDUAL SERVICE

Our hydro power know-how and many years of practical work in our own power plants qualified us to experienced experts. Our customers benefit from advantages like consistent project support service, efficiency checks and performance audits.

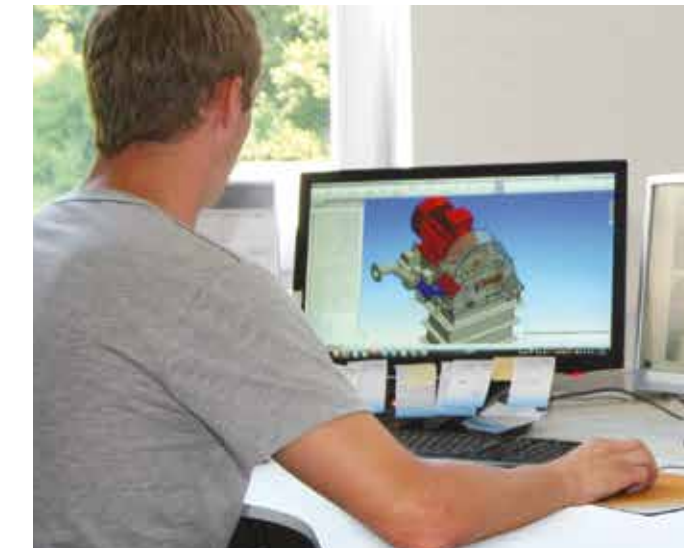
## INNOVATIVE PLANNING

Highly skilled designers are planning on the basis of modern 3D tools and innovative calculation methods in cooperation with the renowned Technical University of Graz.

## PROFESSIONAL EXECUTION

WWS customers benefit from the high quality standards of our generally Austrian supplier firms. The fact that we process our components inhouse by ourselves also facilitates customer-specific solutions with flexible deadlines. Innovative developments by WWS hydroelectric engineering are turned into efficient and modern quality products. Thanks to our detailed project documentation, WWS customers can easily follow our operational steps.

Is your plant very specific?  
Our special designs too!



# RELIABLE SERVICE

„WWS has supported me professionally in the planning of my power plant and also informed me perfectly about legal questions.“

- HIGHLY QUALIFIED INSTALLATION TEAM
- EXTENSIVE SPARE PART WAREHOUSING
- INDIVIDUAL SERVICE AND MAINTENANCE ARRANGEMENTS
- WORLDWIDE PROJECT SUPPORT

„By installing a new turbine, I was able to enormously increase the performance potential of my power plant. The WWS team has provided me with optimal consultation.“





# SUCCESSFUL APPLICATIONS WORLDWIDE

More than 110 plants and 85 MW  
performance installed worldwide

TURKEY  
Dagbasi power plant  
Francis spiral turbine  
3 x 3538 kW



AUSTRIA  
Theuerwangwehr power plant  
Kaplan pit turbine  
408 kW



ARMENIA  
Vardenik power plant  
Pelton turbine, 6 nozzles  
2 x 3270 kW



- BEST-TRAINED EXPERT STAFF
- BEST TOOLING EQUIPMENT
- MULTILINGUAL SERVICE

KWK Dagbasi 3	2013	Francis	Turkey	3 x 3.538 kW
KWK Amlan	2014	Francis	Philippines	2 x 470 kW
KWK Pranjcevic	2014	Francis	Croatia	1.152 kW
KWK Zekere 1	2013	Francis	Turkey	2 x 2.145 kW
KWK Berdu 1	2013	Francis	Romania	1.036 kW
KWK Tragöß	2011	Francis	Austria	745 kW
KWK Theuerwangwehr	2011	Kaplan	Austria	408 kW
KWK Erlau	2014	Kaplan	Germany	180 kW
KWK Chyzhovka	2014	Kaplan	Ukraine	643 kW
KWK Paulusmühle	2013	Kaplan	Germany	106 kW
KWK Czapka	2014	Kaplan	Austria	132 kW
KWK Mihoiesti 1	2013	Kaplan	Romania	1.236 kW
KWK Vialit	2014	Kaplan	Austria	140 kW
KWK Vardenik 1	2012	Pelton	Armenia	2 x 3.270 kW
KWK Racatau	2013	Pelton	Romania	1.600 kW
KWK Selici Torrents	2015	Pelton	Kosovo	3.147 kW
KWK MHC Poiana 1	2013	Pelton	Romania	589 kW
KWK Yasili	2013	Pelton	Turkey	5.724 kW
KWK Huza 1	2015	Pelton	Romania	228 kW

# OUR KNOW-HOW TOP EFFICIENCY



Know-how und experience are our advisors when it comes to selecting the right type of turbine. Our customers benefit from our knowledge in optimizing the economy and the efficiency of your plant.

- OPTIMAL DESIGN FOR EVERY REQUIREMENT
- TOP DEGREES OF EFFICIENCY – UP TO 95 PERCENT
- SIMPLE MAINTENANCE
- LOW MAINTENANCE COSTS

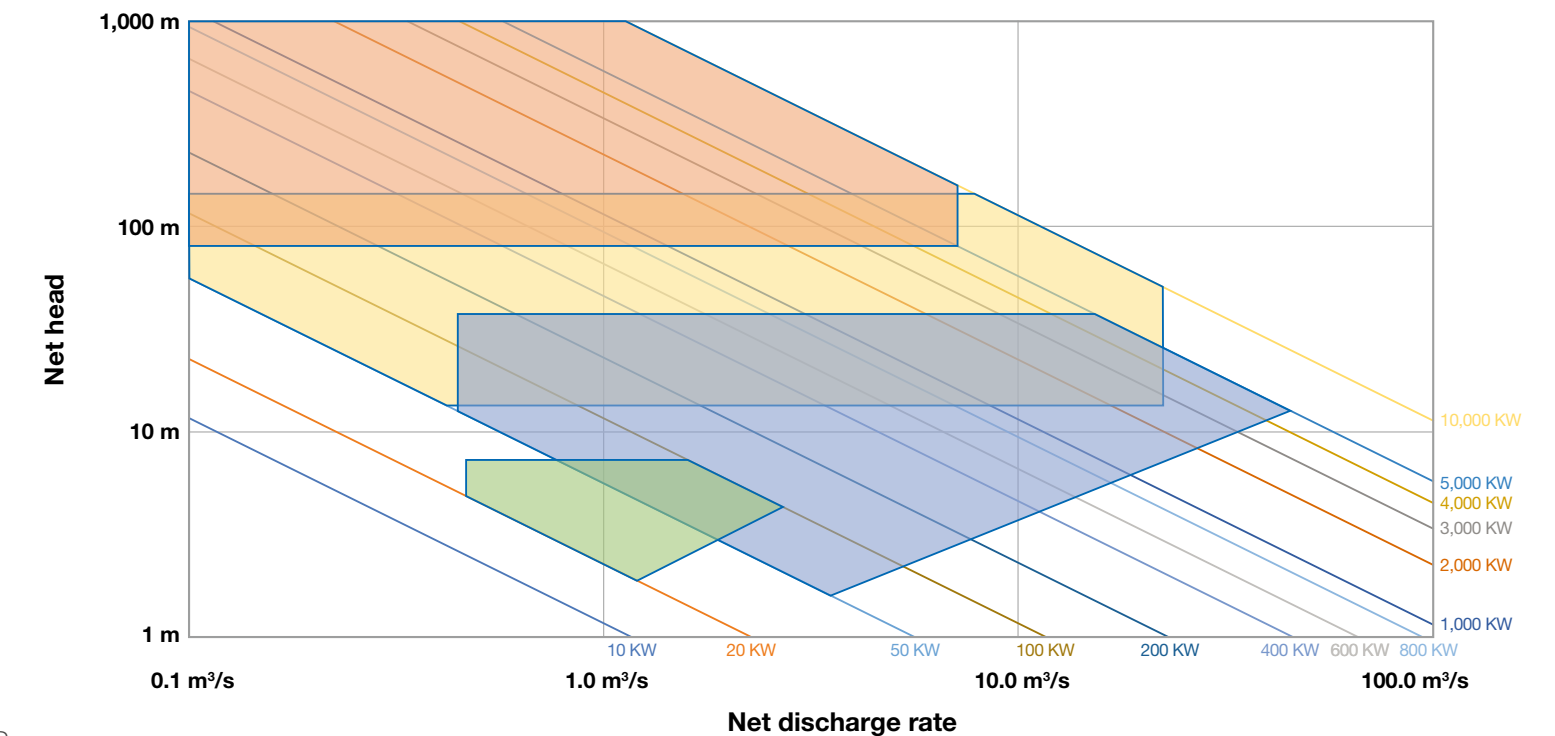
- WWS Pelton turbine
- WWS Francis turbine
- WWS Kaplan turbine
- WWS PowerGate



#### ■ ONLINE CALCULATOR

Simply and quickly find the right type of turbine for your plant:  
[www.wws-wasserkraft.at/technik](http://www.wws-wasserkraft.at/technik)

Selection chart for WWS turbines







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