



GEPPERT
HYDRO

**EMPOWERING EVERYONE.
EVERYWHERE.**

FOR MORE HYDROELECTRIC GENERATION

GEPPERT HYDRO



Since 1896, Geppert has been conceiving, developing and designing pioneering power plant solutions to drive the transition to renewable, environmentally friendly energy and make us independent of polluting and threatening energy sources. Thanks to continuous technological development, as a turbine and hydropower plant specialist, we are now one of the leading full service suppliers of hydropower plant solutions.

We offer:

- ▶ **Turbines** up to a size of 30 MW per unit
- ▶ Various **Shut-off Devices**
- ▶ Container power plant – the **Hydropower Cube**
- ▶ **Automation & Control Systems**
- ▶ **Refurbishment** & modernisation of existing plants
- ▶ **After Sales Service** – for optimal support



ANNUAL PRODUCTION
~15 PLANTS

**COMPLETED PROJECTS FROM
GEPPERT FAMILY COMPANIES**

>3.000

With pride in the local engineering art, as a hydropower specialist we supply countries around the globe with innovative and individual power plant solutions, which are developed by local specialists in the heart of the Alps.

Our customers benefit from the experience we have gained over the decades in small, medium and large hydropower plants. We support you in the planning, development, repair, operation and maintenance of your plants.

From planning to manufacturing and assembly to commissioning - Geppert supplies mechanical and electromechanical equipment for hydropower plants for emission-free energy generation. The high development and production quality is ensured by leading engineering knowledge, first-class raw material, state-of-the-art manufacturing processes and quality assurance meeting the highest standards from the country of hydropower:

AUSTRIA.

GEPPERT LOCATIONS

Around the globe, our customers appreciate the excellent support provided by our local team. Our subsidiaries and partners are there for our customers all over the world.





GEPPERT GROUP HOLDING GMBH HEADQUARTERS

The first company specialized to hydropower equipment was founded in 1896 from family Geppert in Hall in Tyrol, from where it has developed into a globally active specialist for hydropower plant equipment. In order to ensure optimal customer support, additional locations have been opened all over the world in the past years. This global network, coupled with the extensive know-how of our employees, enables us to react quickly, flexibly and in a customer-oriented manner to every situation.

Due to our close ties to our home region, a new Geppert Group Holding headquarter was opened in 2016 in the founding city of Hall in Tyrol, which coordinates cross-border cooperation. This ensures smooth project handling and guarantees an operator-optimised After Sales Service.

HALL IN TYROL, AUSTRIA

The entire energy demand of the company building is covered by regenerative energy sources.





EST. **1896**

It all began in 1896, when Karl Geppert (1867-1918) purchased a property on Breitweg in Hall in Tyrol and founded the Geppert company there.

1950

Josef Geppert (1905-1994) set a milestone in the 1950s by developing the robust oil-hydraulic turbine speed governor.

1982

Under Wilfried Geppert (born 1945), the first programmable logic controllers were used.

2007

With pride in its domestic know-how in turbine construction, Geppert is developing forward-looking energy solutions in fourth generation with Guntram Geppert (born 1969).

2023

By establishing of Geppert Hydro, another future-oriented milestone was initiated in the advancement and specialization in the direction of hydropower applications.

TODAY

Geppert is already working on tomorrow's energy supply concepts in order to supply more and more people with sustainable, clean energy from hydropower.



TUMPEN-HABICHEN, AUSTRIA
3 Francis Turbines, 2022
Total output: 16,207 kW
*carried out by Geppert GmbH

GEPPERT WORLDWIDE

REFERENCES

We are proud to look back on more than 3,000 plants that have been put into operation: Produced in Austria – assembled in countries all around the globe.



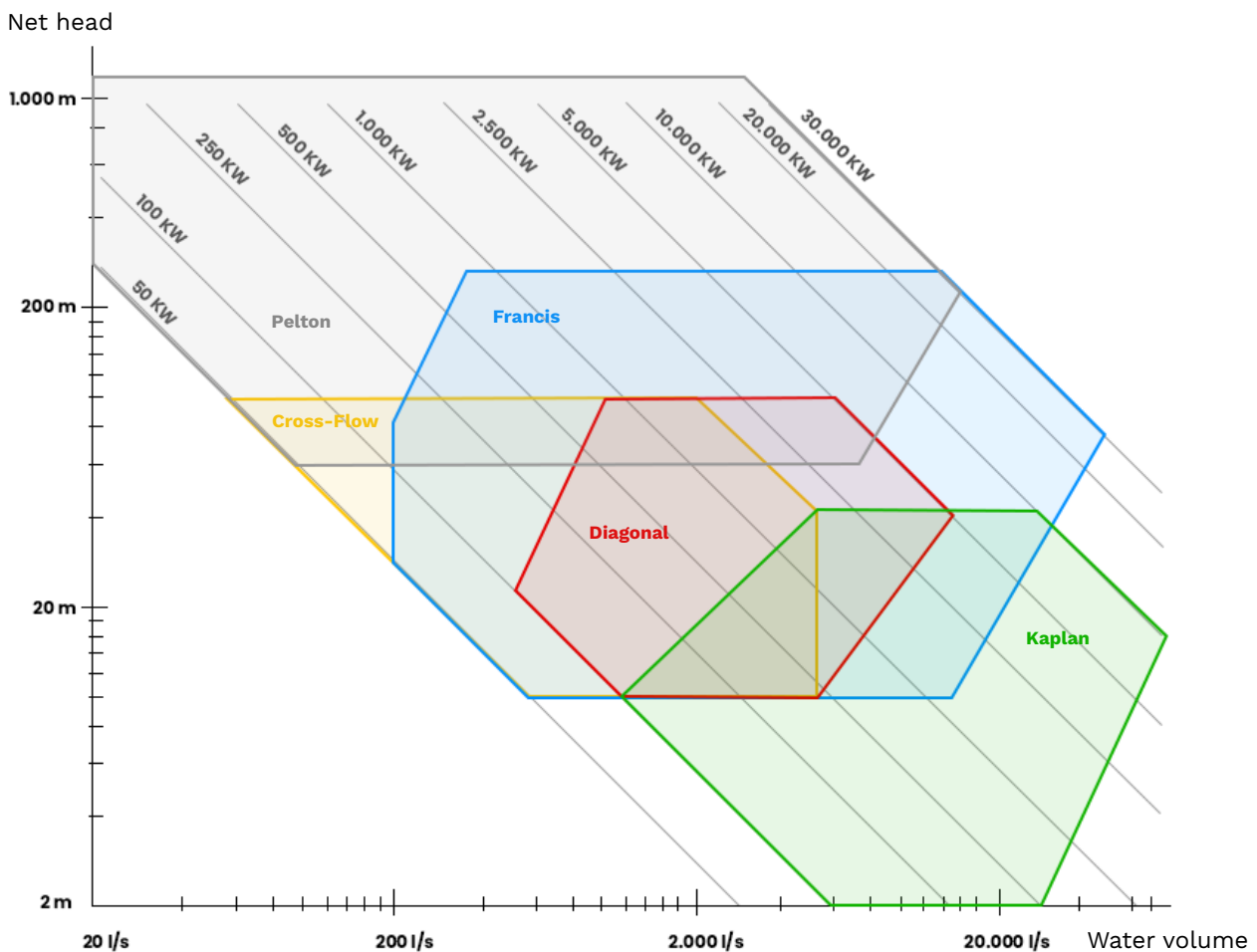
We were able to supply projects with various equipment such as turbine units, automation and control technology, shut-off devices, hydropower cubes or even revitalise existing power plants through refurbishment.

Our equipment is manufactured to the highest quality standards at the Geppert factory in Hall in Tyrol from where the turbines are delivered to countries worldwide. The products are continuously optimized through simulations and model tests, which guarantees and improves the hydraulic properties of the turbines.

OUR POWER PLANT SOLUTIONS

Innovative hydropower plants with different types of turbines:
Pelton, Francis, Kaplan, Diagonal and Cross-Flow Turbine.

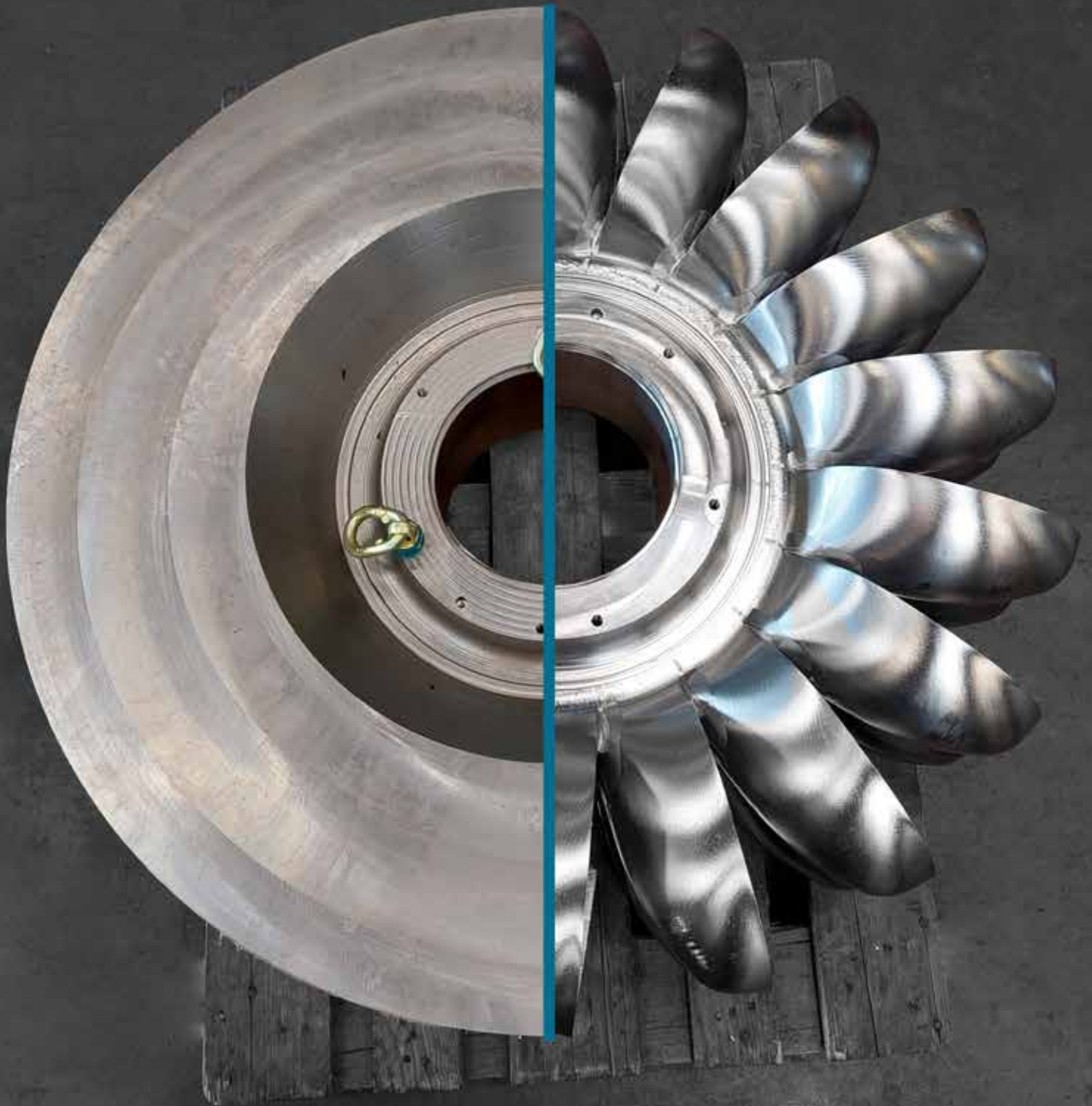
Each Geppert Hydro plant is custom-configured, fully automated and remotely monitored. Based on the project data, each turbine is individually optimised, designed and manufactured on the basis of the project data.



Find the right turbine for your power plant:
www.geppert-hydro.com/en/performance-calculator/

Our expertise is the design and supply of electromechanical equipment for hydropower plants to generate clean energy for own use or for feeding into a grid. We offer complete solutions in the form of "Water-To-Wire" as well as EPC contracting.

AT GEPPERT HYDRO WE ONLY USE PELTON
RUNNERS, WHICH ARE MILLED FROM A MONO-
BLOCK RAW MATERIAL





STANZERTAL, AUSTRIA

3 Pelton Turbines, 2014

Total output: ~13,000 kW

*carried out by Geppert GmbH

PELTON TURBINE

HIGH PRESSURE TURBINE

- ▷ Power up to 30 MW
- ▷ Heads from 40 to 1,100 m
- ▷ Sophisticated system to optimize efficiency
- ▷ Cleaning during operation
- ▷ Suitable for drinking water



The Pelton turbine is designed with internally and externally regulated nozzle sets - each consisting of one to six nozzles. Depending on the number of nozzles, one- to three-nozzle machines are built horizontally, while two- to six-nozzle machines are built vertically. Each individual nozzle is controlled separately - this guarantees optimum efficiency.

For turbines with externally regulated nozzles, Geppert offers a special plus: With the flushing stroke, any blockages, such as accumulated leaves or other foreign objects that are in the head water, are simply loosened. And it does so during continuous operation. This means that the machine does not have to be shut down or opened for cleaning.



JERZENS, AUSTRIA

2 Francis Turbines, 2015

Total output: ~5,000 kW

*carried out by Geppert GmbH



FRANCIS TURBINE

MEDIUM-PRESSURE TURBINE

- ▷ Power up to 30 MW
- ▷ Heads from 10 to 250 m
- ▷ Guaranteed hydraulic characteristics with the highest efficiency
- ▷ Compact turbine in the form of shaft or spiral turbines
- ▷ Minimal to no abrasion of the wearing parts



Geppert is able to manufacture Francis runners in various designs. This applies, for example, to the production of a one-piece, two-piece or three-piece Francis runner.

Depending on the head, Geppert offers these in the form of shaft or spiral turbines - with vertical or horizontal shafts.

The spiral turbine is usually designed as a compact turbine - the runner is mounted on the generator shaft. This allows the size of the power house to be reduced to a minimum. This 2-bearing arrangement avoids the use of a coupling or other wear parts. In addition to the ecological advantage, this is also positive from an economic point of view - running costs can thus be kept to a minimum.



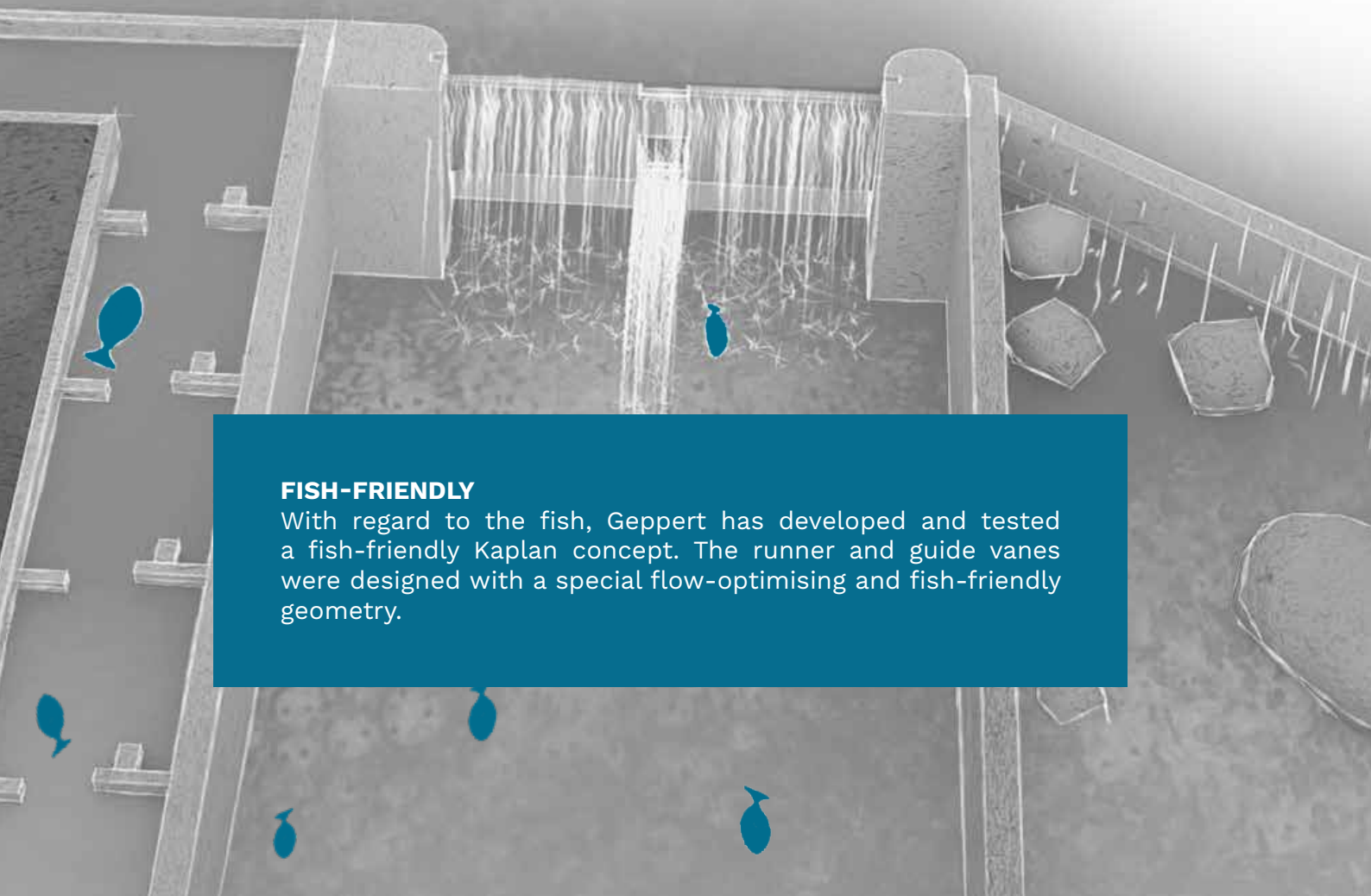
KAPLAN TURBINE



LOW-PRESSURE TURBINE

- ▷ Power up to 10 MW
- ▷ Heads up to 40 m
- ▷ Low pressure - enormous efficiency
- ▷ High-tech in duct-, pipe-, Z- and S-turbines
- ▷ Fish-friendly

Due to its mode of operation, the Kaplan turbine is ideally suited for power plants with a particularly low head. The turbine can be installed in both low-flow and high-flow waters.



FISH-FRIENDLY

With regard to the fish, Geppert has developed and tested a fish-friendly Kaplan concept. The runner and guide vanes were designed with a special flow-optimising and fish-friendly geometry.

In order to make optimum use of project conditions as well as meeting customer requirements in the best possible way, Geppert realizes Kaplan turbines in the following designs:

- ▷ as **duct-, pipe-, Z- or S-turbines**
- ▷ in **horizontal** or **vertical** design
- ▷ with **three** to **seven blades**

A special feature of the Kaplan aggregate is that the submersible generator and the runner are mounted on a common shaft. Permanent magnet or asynchronous generators are used as alternators. The advantages are a compact design and the elimination of gearbox and belt drive due to the directly coupled generator.



GROSSWEIL, GERMANY
2 Kaplan Turbines, 2017
Total output: ~500 kW
*carried out by Geppert GmbH

DIAGONAL TURBINE

DOUBLE-REGULATED OVERPRESSURE TURBINE

- ▷ Power up to 5 MW
- ▷ Heads from 10 up to 100 m
- ▷ Unique in terms of technology and efficiency
- ▷ Cost-saving - high benefit
- ▷ Insensitive to cavitation



The turbine is particularly convincing thanks to its adjustable runner and guide vanes. These give the product, which has been used frequently and successfully by Geppert since 1999, a high degree of efficiency and thus very high part-load efficiencies, comparable to Kaplan turbines.

By using the diagonal turbine, more cost-intensive variants - such as the use of several Francis turbines - can be avoided in the case of seasonally strongly fluctuating water quantities. In addition, a higher annual yield is achieved than with a comparable single-regulated Francis turbine. The diagonal turbine has the considerable advantage of being insensitive to cavitation.



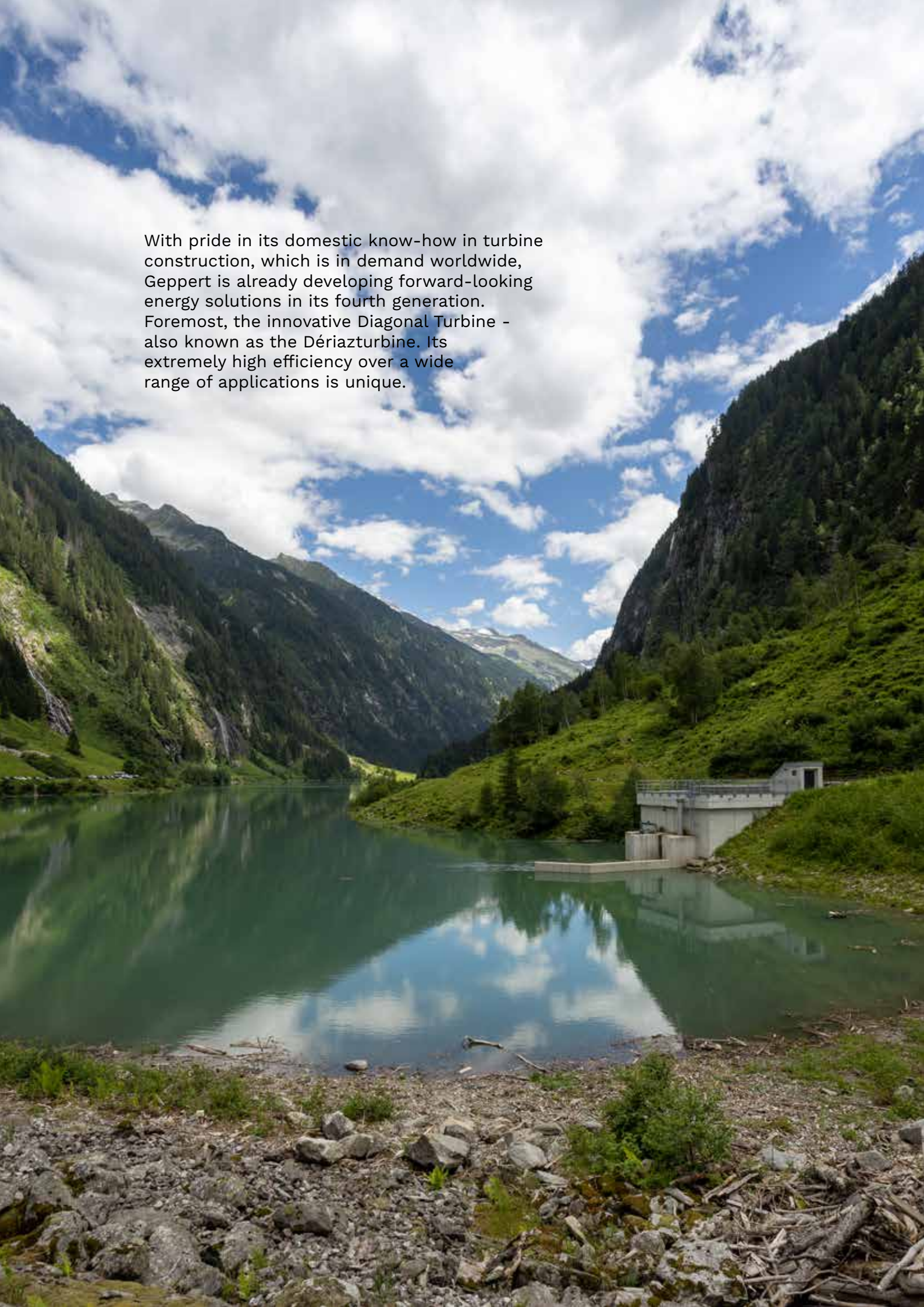
STILLUPP, AUSTRIA

Diagonal Turbine, 2019

Total output: 1,620 kW

*carried out by Geppert GmbH

With pride in its domestic know-how in turbine construction, which is in demand worldwide, Geppert is already developing forward-looking energy solutions in its fourth generation. Foremost, the innovative Diagonal Turbine - also known as the Dériazturbine. Its extremely high efficiency over a wide range of applications is unique.



CROSS-FLOW TURBINE

LOW-PRESSURE TURBINE

- ▷ Power up to 2.5 MW
- ▷ Heads from 10 up to 100 m
- ▷ Flat efficiency curve enables high annual generation
- ▷ Cost-saving and durable due to simple design
- ▷ Low maintenance requirements
- ▷ Self-cleaning



The Cross-Flow turbine is very robust and durable due to its relatively simple design. The turbine can achieve the best possible yields especially through its use in running waters. Compared to other turbines, the flat efficiency curve of the Cross-Flow turbine brings a higher annual yield, as running waters often have a weak water supply over several months. Thus, the fluctuating water volumes can be used in the best possible way.



MONTENEGRO

2 Cross-Flow Turbines, 2019

Total output: ~2,600 kW

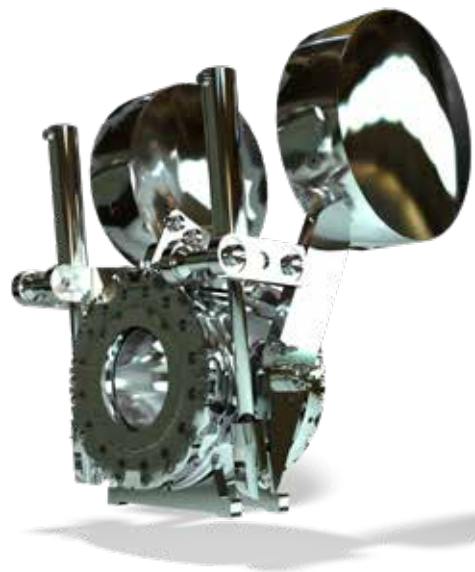
*carried out by Geppert GmbH

SHUT-OFF DEVICE

BALL VALVES & BALL GATE VALVES

Shut-Off devices for special applications in the hydropower sector are characterized by their compactness and high reliability. Geppert manufactures Shut-Off devices in the form of ball valves as well as ball gate valves. Optionally, these are also offered with inspection seal or in stainless steel - for drinking water applications.

- ▶ Hydro-dynamic and emergency closing capability
- ▶ Favorable flow co-efficients
- ▶ Size up to DN1200 /
Pressure rating up to PN160
- ▶ Optional drinking water applications
- ▶ Higher flow rates permitted



FINSING, AUSTRIA

2 Pelton Turbines, 2013

Total output: 4,630 kW

*carried out by Geppert GmbH

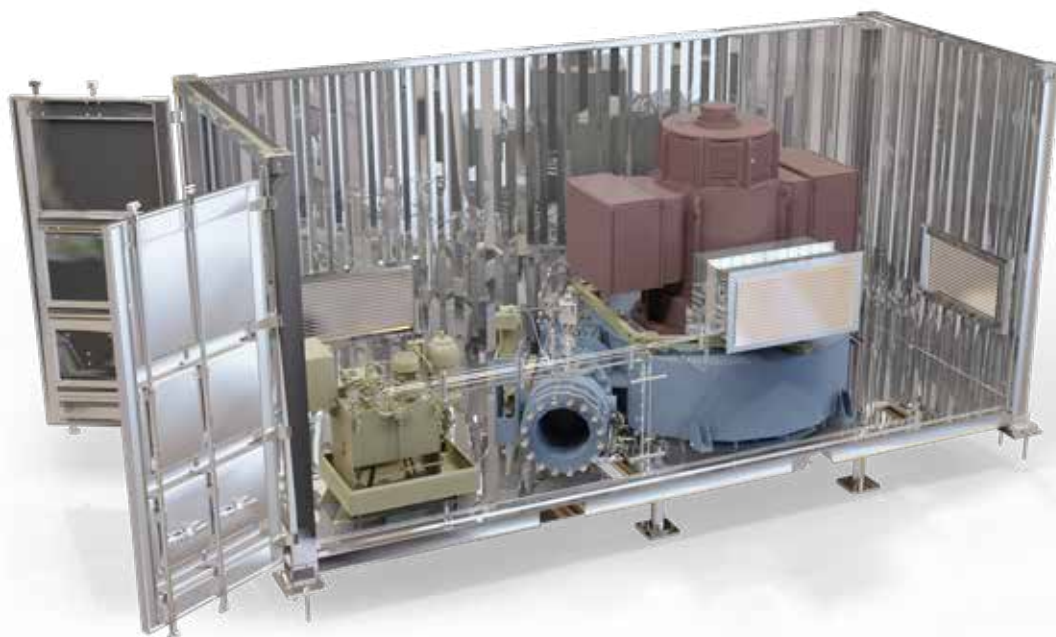
HYDROPOWER CUBE

CONTAINER POWER PLANT

- ▷ Power up to 1 MW
- ▷ Fast, economical, future-oriented
- ▷ Time and cost saving
- ▷ Possible as Pelton, Francis or Cross-Flow Turbines
- ▷ Suitable for drinking water



With the development of the Hydropower Cube, Geppert Hydropower offers a unique innovation in this design. This idea is the result of the vision to supply even regions that are difficult to access with renewable energy from hydropower. The operator saves time and costs - since both the construction of a powerhouse is not necessary and the on-site installation is reduced to a minimum. In addition, the container is suitable for drinking water. The container only has to be suitably placed on site, connected to the penstock and to the power grid.



AUTOMATION & CONTROL SYSTEMS

FULLY AUTOMATED & REMOTE-CONTROLLED

- ▷ Remote monitoring and maintenance
- ▷ Visualization
- ▷ SMS alerting
- ▷ Rotation speed, water level and power control
- ▷ Efficiency optimization for multi-machine operation
- ▷ Optimal runner-guide vane correlation

In the course of developing individual hydropower plant solutions, Geppert offers ideal concepts in the field of programmable logic controllers for small and medium-sized power plants. In addition to planning, the wide range of services also includes the installation of distribution systems in the low-voltage and medium-voltage segments. Also a holistic optimization of existing plants, always at the latest state of the art, is offered. Powerhouse data as well as data from other plant components such as main inlet valves, sluices, trash rack cleaning systems, doping devices, etc. can be integrated.



REFURBISHMENT

OPTIMIZATION & MODERNIZATION OF WATER TURBINES & POWER PLANT EQUIPMENT

In the course of refurbishment measures and partial modernizations of existing power plants Geppert brings your equipment to state of the art level in order to increase the effectiveness and efficiency of the power plant.

We offer our customers the recording of the current plant condition, development of a refurbishment concept (tailored to customer requirements), efficiency increase and increase of the annual yield as well as the peak load, partial or full automation of the existing plants, and much more. Everything from a single source - for Geppert turbines as well as for third-party turbines.

With new hydraulic flow contours and state-of-the-art automation technology, we can offer solutions to increase efficiencies, reduce susceptibility to malfunctions, and make operations more sustainable, economical, and convenient.

BEFORE



AFTER



AFTER SALES SERVICE

FOR OPTIMAL SUPPORT AFTER COMMISSIONING

For us, the handover of a turbine to the customer represents not only the successful completion of a project, but also the beginning of a long-term customer relationship. On request, we support our customers throughout the entire service life of their turbine.

OUR SERVICES:

- ▷ Availability 24 h / 365 days
- ▷ Remote maintenance
- ▷ Spare parts management
- ▷ Inspections
- ▷ Repairs
- ▷ Maintenance
- ▷ Service packages



Regular maintenance ensures availability, efficiency and operational reliability - and thus the yield security of a hydropower plant.

For optimum support of your plant, Geppert also offers three different service packages. You thus benefit from inspection, maintenance and spare parts management at a fixed price.

We are here for you!
Our sales team will be happy to advise you!
You can reach us under:

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GEPPERT
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Geppert Hydro