

The background is a composite image. On the left, the Brandenburg Gate in Berlin is shown at dusk, illuminated with warm lights. On the right, a large, powerful waterfall cascades down a rocky ledge, surrounded by lush green trees. The two images are separated by a diagonal line.

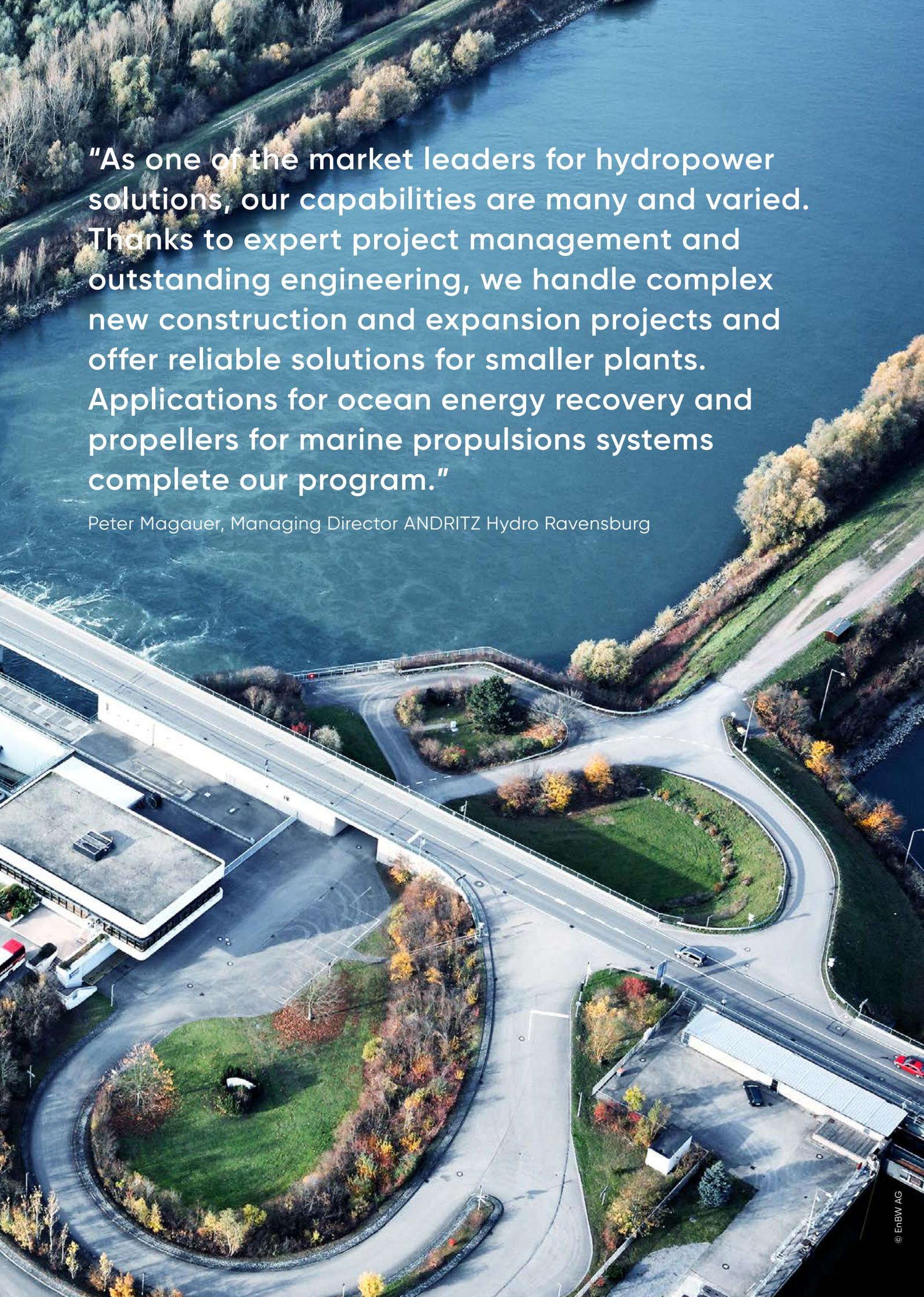
# MADE IN GERMANY

ANDRITZ HYDROPOWER SOLUTIONS

**ANDRITZ**

ENGINEERED SUCCESS





**"As one of the market leaders for hydropower solutions, our capabilities are many and varied. Thanks to expert project management and outstanding engineering, we handle complex new construction and expansion projects and offer reliable solutions for smaller plants. Applications for ocean energy recovery and propellers for marine propulsions systems complete our program."**

Peter Magauer, Managing Director ANDRITZ Hydro Ravensburg

# 16% energy from water

Approximately 70% of the earth's surface is covered with water – the source of all life. It stands to reason that we use this water for many of our fundamental needs like energy and agricultural irrigation. With economic progress and a growing population, the demands on energy from water are increasing daily.

## THE GLOBAL HYDROPOWER MARKET

One of the most proven and best-developed forms of energy production available today, hydropower makes a lasting contribution to the health of our blue planet. It also creates jobs and promotes economic and social development. In many cases, its infrastructure supports water supply, irrigation and ensures flood protection alongside its clean and environmentally friendly energy. In addition, broad trends in energy production indicate that in future, only those energy concepts that most effectively combine various renewable resources will succeed. Hydropower is trendsetting here, for as well as power generation it offers a broad spectrum of applications in energy storage supporting grid stability and peak load coverage, for example.

At just under 4,000 TWh per year, hydropower currently produces approximately 16% of the world's total electricity production, but the technically feasible global hydropower potential is an unbelievable 16,000 TWh a year. Around the world people are working to exploit this potential by building new hydropower plants as well as modernizing and improving existing ones. In regions where energy demand will increase dramatically in the next few years – such as in Asia, South America, and Africa – a multitude of small hydropower projects will be implemented in addition to new large hydropower installations. There is also an increasing refurbishment and rehabilitation market in Europe and North America, where around half of all the hydropower systems are

more than 30 years old. Updated and modernized, such facilities can continue to make a significant contribution toward future energy supply.

## HYDROPOWER IN GERMANY

In Germany, there are more than 7,000 hydropower systems with an installed total capacity of approximately 5,500 MW, not including pumped storage power. The majority of these have an output of less than 100 kW but, even so, collectively around 1,400 MW of these smaller plants receive compensation under the terms of Germany's Erneuerbare Energien Gesetz (EEG) Renewable Energy Law.

In 2016, national production from hydropower was approximately 20,500 GWh of electricity, which corresponds to about 3.5% of Germany's gross consumption or about six million households. Thus, hydropower avoids the production of approximately 14.5 million tons of carbon dioxide (CO<sub>2</sub>) greenhouse gas emissions. However, in Germany the potential for new conventional hydropower plants has already been largely exploited. An exception is found in the pumped storage power sector where – due to the expansion of variable output renewables like wind and solar – longer-term and higher-performance energy storage is increasingly required.

For the traditional hydropower market in Germany the focus is on the modernization and rehabilitation of

## Hydropower – a sustainable and renewable form of power generation

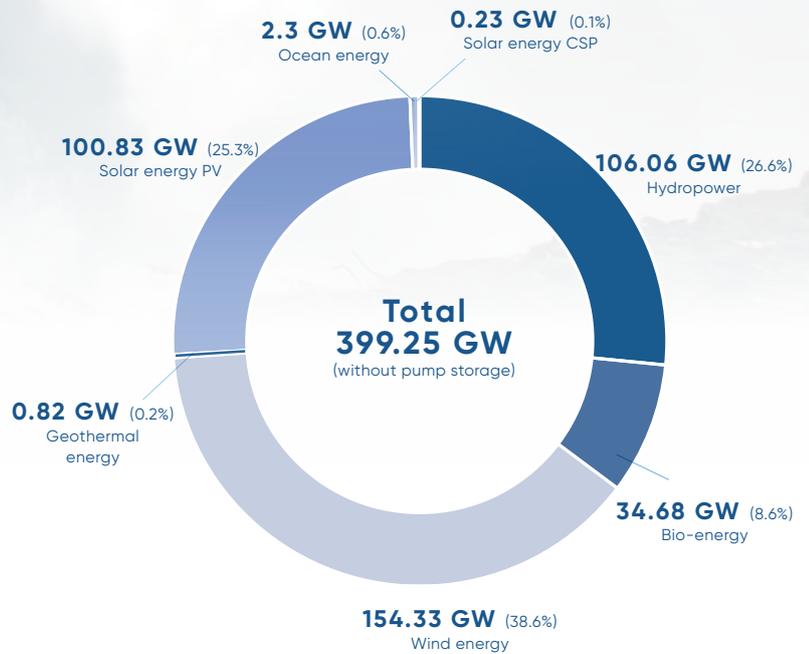


existing plants. The majority of German hydropower plants over 1 MW entered into service between 1920 and 1960 and now such aging systems must be refurbished. The passing of new laws covering water, the environment, and the market conditions for renewable energy always pose new challenges for power plant operators and technology suppliers that can typically only be met with additional investment.

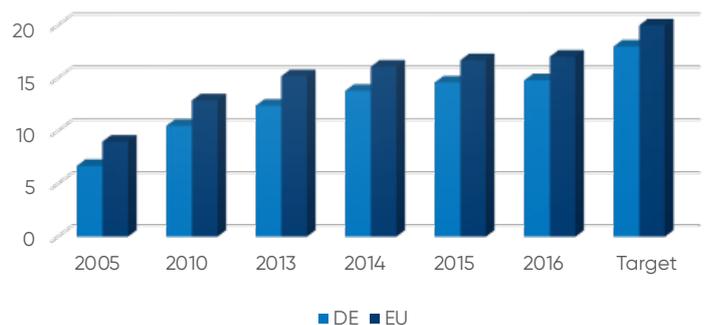
An important instrument for implementing the EU-directive for encouraging the use of renewable energy sources came from the Renewable Energy Law reforms of 2017. Under the terms of the directive, Germany must achieve an 18% share of gross energy consumption from renewable resources by 2020. The hydropower sector plays an essential role here.

In Europe, the directive has resulted in an increased share of renewable energies in gross power consumption from 9% in 2005 to 17% in 2016. At the end of 2016, the installed capacity for power generation from renewable energies in the EU was 399 GW. Across Europe, the installed capacity of hydraulic power generation is almost 400 GW while pumped storage power plants account for close to another 25 GW. Therefore, hydropower is an important component of the existing renewable energy portfolio. Furthermore though, due to its controllability and flexibility, it makes an essential contribution to the broader clean energy revolution.

### TOTAL EU INSTALLED RENEWABLE POWER GENERATION CAPACITY IN 2016



### PERCENTAGE OF RENEWABLE ENERGY IN TOTAL GROSS FINAL ENERGY CONSUMPTION IN GERMANY AND THE EU



Sources: BDW e.V.; BMWi; Eurostat



# ANDRITZ HYDRO GmbH in Ravensburg stands for tradition and innovation

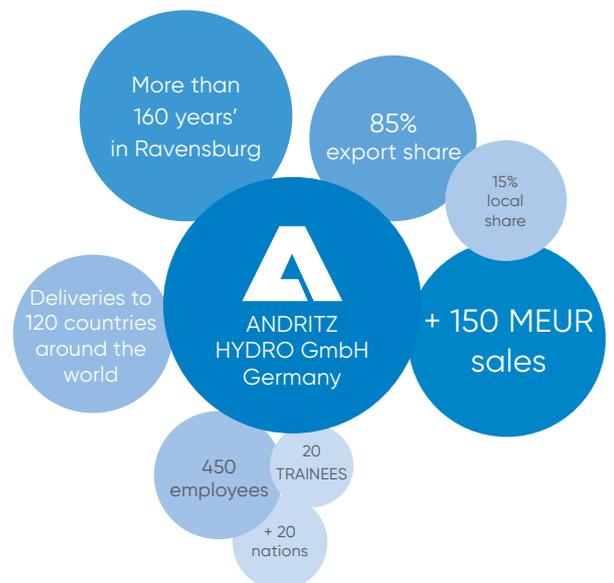
Today, state-of-the-art hydropower equipment and technology from Ravensburg is delivered to more than 120 countries around the globe. In-house manufactured and tested turbine components, as well as related services and products, are among the best in the industry. Indeed, for more than 160 years the history of hydropower technology has been written in Ravensburg.

The ANDRITZ Group headquartered in Graz, Austria, is one of the world's leading suppliers of systems, equipment, and services for hydropower plants. ANDRITZ also serves the pulp, paper, and steel industries, the metal-processing industry, as well as communal and industrial solid-liquid separation. With more than 250 production locations and service and sales companies around the world, ANDRITZ is always close to its customers.

The hydropower division of the ANDRITZ GROUP is a global supplier of electro-mechanical equipment and services "from water to wire" for hydropower plants and one of the world's largest suppliers on the hydraulic power generation market.

With more than 175 years' experience in turbine technology and over 120 years' in electrical engineering, we offer a broad portfolio. The cornerstone of ANDRITZ was laid by the European and North American turbine and generator pioneers of the 19<sup>th</sup> century. Over time, growth, mergers, and cooperation agreements have created a state-of-the-art technology group that is today's world leader, employing well over 7,200 people.

The foundation of our Ravensburg location reaches right back to the 1800s. Our products and services make a significant contribution to environmentally friendly, renewable power generation. Today, the latest modern ecological concepts are combined with 160 years' of extensively documented experience of building hydropower plants. Our 450 employees at Ravensburg not only provide a beneficial service, they come from a wide variety of countries and therefore also speak the language of our international customers.



**2017**

Structuring and implementation of two new production areas (MicroGuss\* and SXH\* coating)

**2011**

Inauguration of the new office building

**2009**

Renaming to ANDRITZ HYDRO GmbH

**2006**

ANDRITZ AG, Graz, acquires VA TECH HYDRO  
Anniversary: "150 years Escher Wyss  
in Ravensburg"

**2000**

VA TECHNOLOGIE AG, Linz, acquires  
Sulzer Hydro -> reorganisation as  
VA TECH Escher Wyss GmbH

**1995**

From Sulzer-Escher Wyss GmbH  
in Ravensburg emerge Sulzer Hydro, Sulzer Turbo,  
Sulzer Chemtech, and Sulzer International



**1994**

Joint venture between Voith AG and Sulzer AG  
Establishment of Voith Sulzer Papiertechnik –  
with companies, among other places,  
in Ravensburg

**1984**

Reorganization as Sulzer-Escher Wyss, Ravensburg

**1967**

Sulzer AG Winterthur acquires the  
Escher Wyss companies in Switzerland,  
Italy, and Germany

**1856**

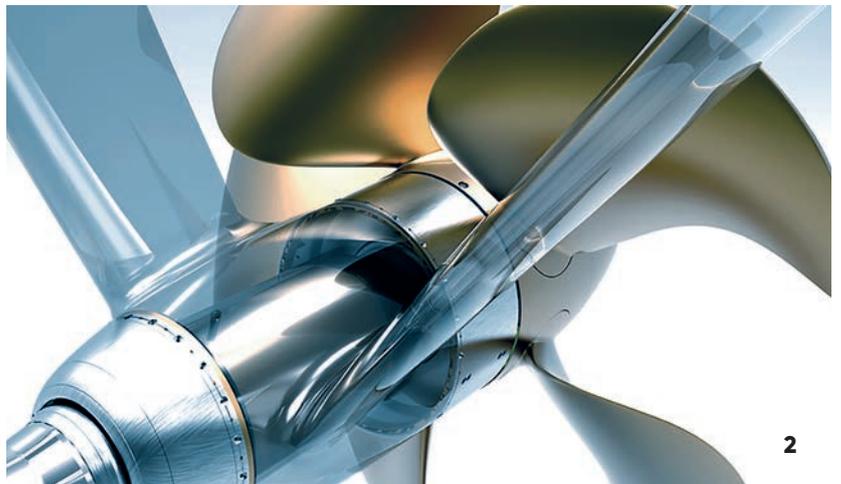
Establishment of  
Escher Wyss in Ravensburg

**1805**

Establishment of Escher Wyss & Cie in Zürich,  
Switzerland

**ESCHER WYSS MASCHINENFABRIK  
GESELLSCHAFT MIT BESCHRÄNKTER HAFTUNG  
RAVENSBURG**

"From water to wire,"  
everything from a single  
source – this is ANDRITZ



- 1 Hydropower plant (Dnipro, Ukraine)
- 2 Controllable pitch propeller
- 3 Large pumps
- 4 Automation
- 5 Turbo generator



# Comprehensive expertise leads to extraordinary solutions

The core competencies of ANDRITZ HYDRO GmbH in Ravensburg are the construction and manufacturing of Kaplan, Bulb, and Francis turbines, pump turbines for storage power stations, and turbines for high and low heads. The Ravensburg site also produces controllable pitch propellers for naval vessels and commercial ships. In addition to its products, the company's range of services includes project management, engineering services relating to all aspects of systems and automation, as well as installation and commissioning.

## HYDROPOWER EXPERTISE

As a comprehensive supplier, we provide turnkey hydro-mechanical and electro-technical equipment for large new installations and we are the world's leading provider on the small and mini hydropower market. ANDRITZ develops solution-oriented service and rehabilitation concepts and our innovative modernization measures and state-of-the-art technologies increase the profitability and extend the lifespan of our customers' assets. All while taking into account basic economic, ecological, and legal frameworks and conditions.

In hydraulic steel construction we are positioned as a global market leader, setting records and offering a wide range of products and an extensive service portfolio for hydropower plants, water supply, and irrigation systems.

Our employees' in-depth experience in electrical energy systems allow for the implementation of project-specific customer specifications for fully functional hydropower plants in a target-oriented way.

Our expert knowledge of digitalization and modern automation solutions also enables fully-automated operation, low investment costs, simple commissioning, and quick system replacement.

## PUMP EXPERTISE

There is a constantly growing need for ever larger and more powerful pumps for irrigation, drainage, desalination, flood control, and drinking and industrial water supplies. ANDRITZ successfully develops, produces, tests, and supplies both standardized and custom-tailored large pumps.

## CONTROLLABLE PITCH PROPELLER EXPERTISE

Since 1934 our Escher Wyss controllable-pitch propellers have provided outstanding performance for naval and coast guard vessels, mega-yachts, and special marine vessels.

## THERMAL EXPERTISE

High-performance turbo generators are the heart of gas-fired combined- and open-cycle power plants. As one of the leading suppliers of air-cooled turbo generators, we provide units that fulfill the highest technical specifications and requirements for thermal power applications and elsewhere.

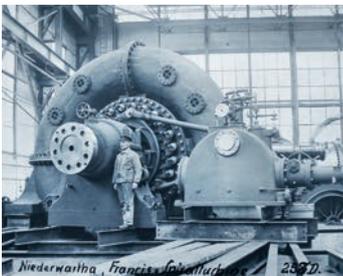


# The world of ANDRITZ Hydro Germany

## **GOLDISTHAL**

Germany (1997)

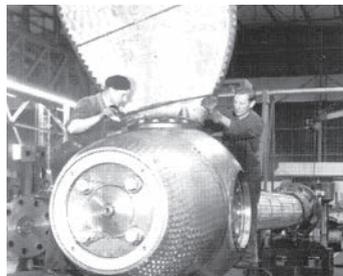
Delivery of the first asynchronous, variable speed pumped storage units outside of Japan.



### **Niederwartha, Germany**

1929

Electro-mechanical equipment for the world's first commercial pumped storage power plant



### **Freighter MS Linzertor**

1958

Controllable pitch propeller with 4.95 m diameter and 4,000 kW power input



### **Erzhausen, Germany**

1964

A 60 MW storage pump for a pumped storage plant (220 MW in total)

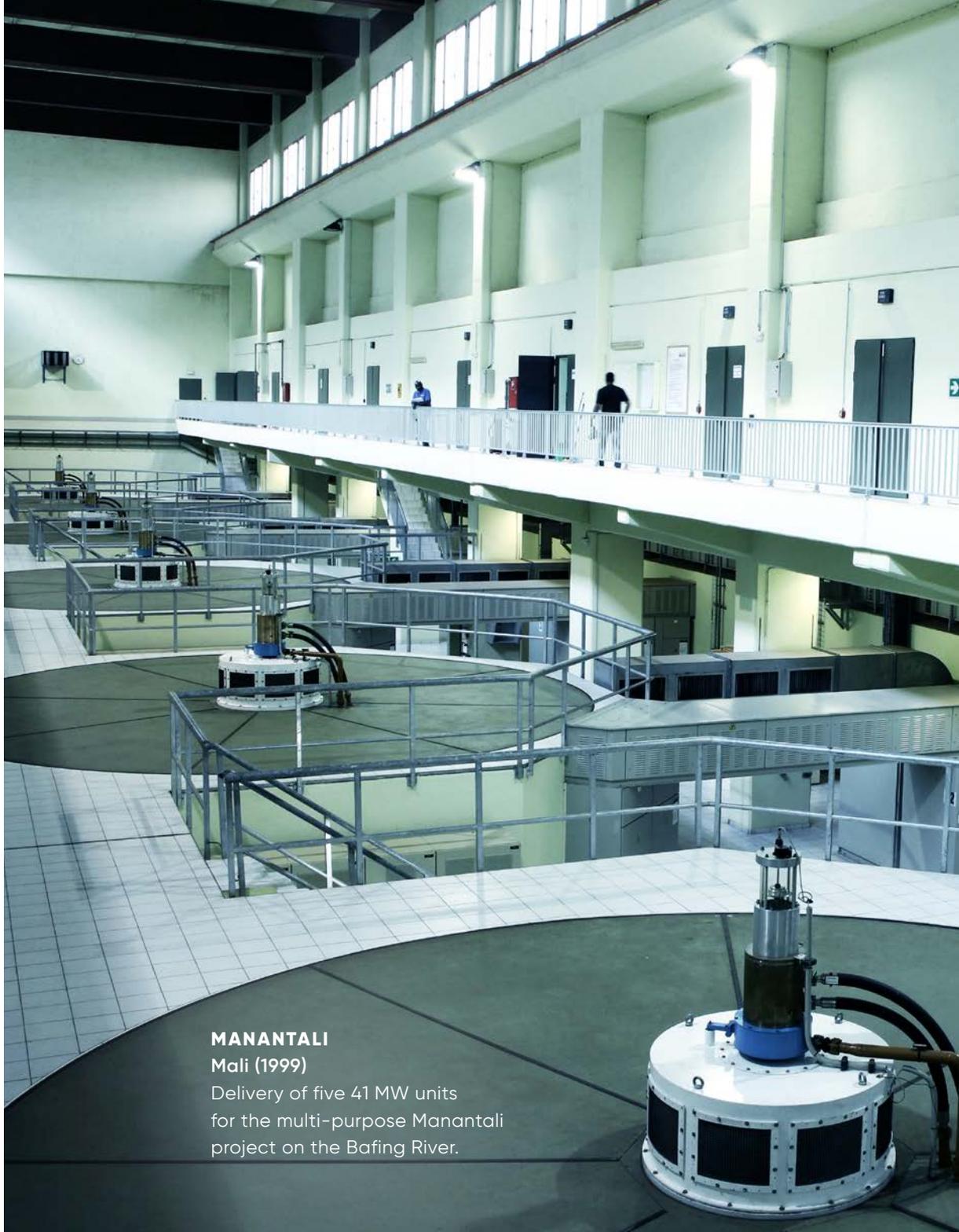


### **Rönkhausen, Germany**

1969

Delivery of the complete 79 MW pump turbine (pump capacity 67.5 MW)





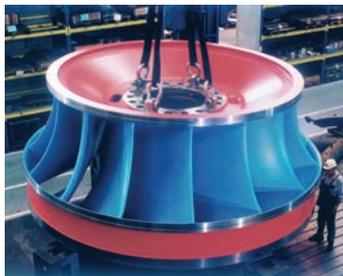
**MANANTALI**  
 Mali (1999)  
 Delivery of five 41 MW units  
 for the multi-purpose Manantali  
 project on the Bafing River.



**Jebba Dam, Nigeria**  
 1980  
 One of six 100 MW  
 propeller turbines on the  
 Niger River (7.1 m diameter)



**Walchensee, Germany**  
 1992  
 Digital software solution for  
 the new surge tank regulation  
 of the high pressure storage plant

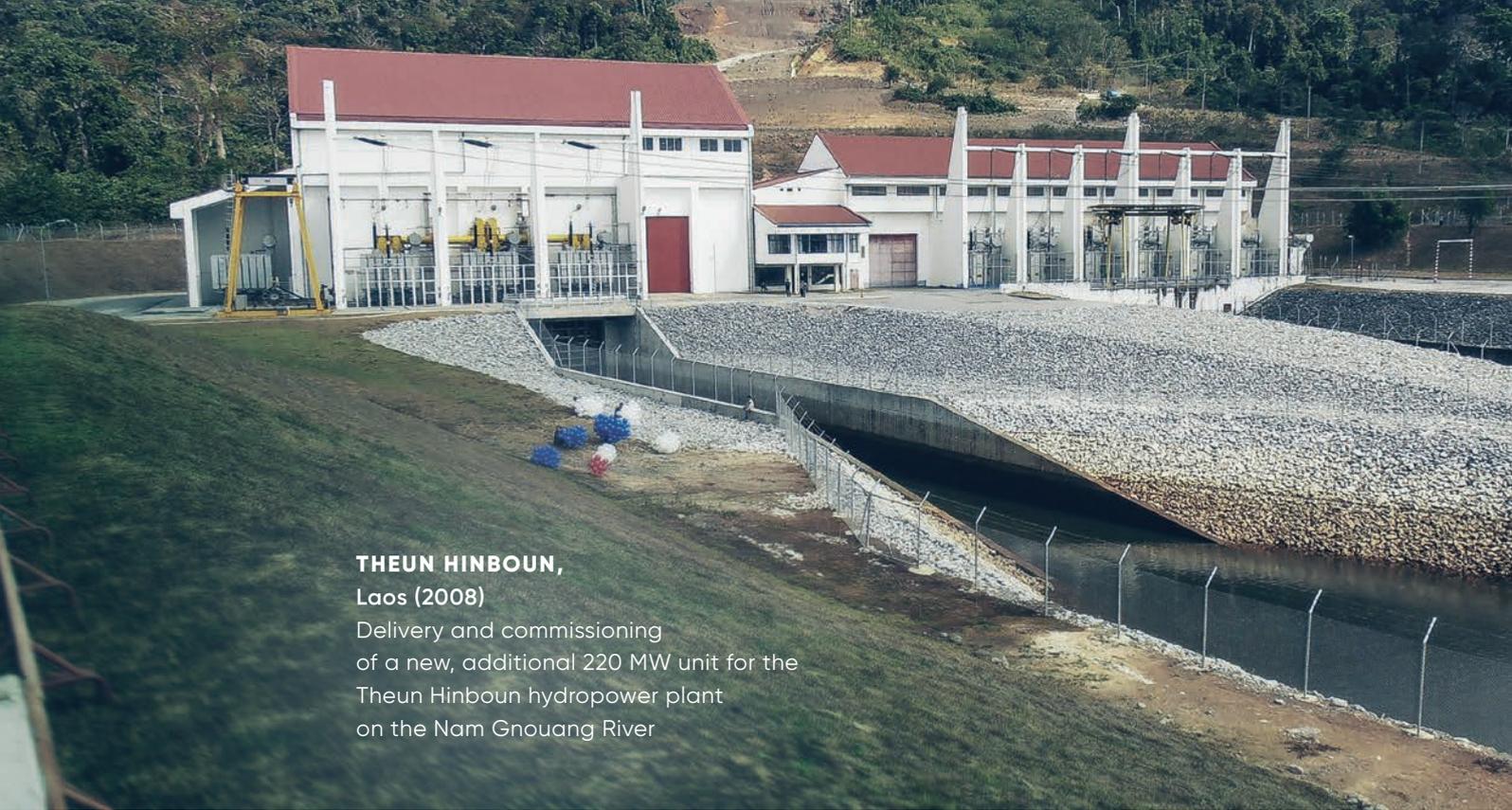


**Sirikit 3, Thailand**  
 1995  
 Output increase due to a new  
 Francis runner and flow-optimized  
 lining of the guide vanes



**Geesthacht, Germany**  
 1999  
 Delivery of three new  
 pump impellers, each with  
 a power input of 32 MW





**THEUN HINBOUN,  
Laos (2008)**

Delivery and commissioning of a new, additional 220 MW unit for the Theun Hinboun hydropower plant on the Nam Gnouang River



**MARKERSBACH  
Germany (2008)**

Modern digital control, protection, and excitation system technology for the second-largest pumped storage plant in Germany.



**Cleuson-Dixence, Switzerland  
2002**

Two world records for the most powerful Pelton turbines (3x 423 MW) and highest head (1,883 m)



**Tongbai, China  
2003**

Four reversible pump turbines, each with 322 MW on the Baizhang River



**Aittokoski, Finland  
2003**

New Kaplan runner for the plant on the Emäjoki River (4.7 m diameter)



**Keselstrasse, Germany  
2006**

Electro-mechanical equipment for a modern, urban small hydropower plant





**SIMON BOLIVAR (GURI),**  
Venezuela (2008)  
Delivery of five of the world's  
most powerful Francis turbines  
(770 MW apiece).



**Karcham Wangtoo, India**  
2007  
Four erosion-resistant 300 MW  
Francis turbines for one of the  
largest hydropower plants in India

**Albruck-Dogern, Germany**  
2007  
A 24 MW Kaplan Bulb turbine for  
one of the most important run-of-river  
power stations on the Rhine

**Bajina Basta, Serbia**  
2009  
13% output increase of the four Francis  
turbines (now each 108 MW) in the  
second-largest hydropower plant in Serbia

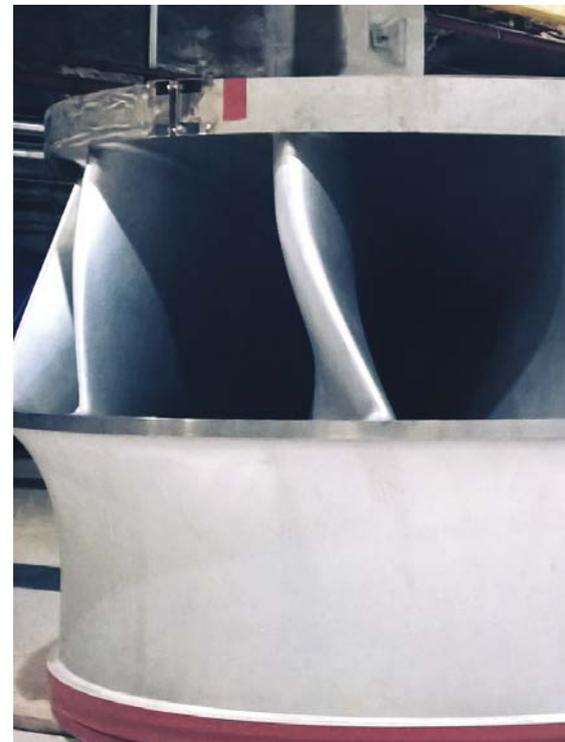
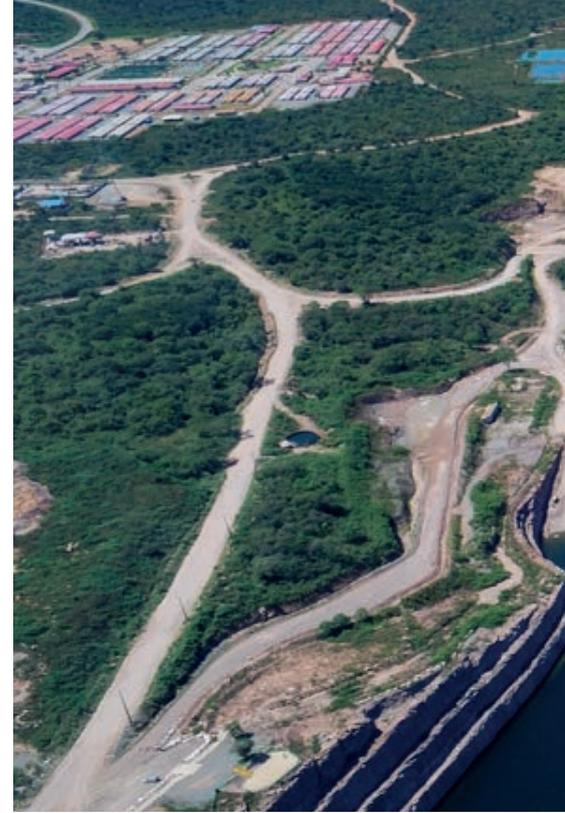
**75 years Controllable Pitch Propellers**  
2009  
MS Etzel (Lake Zurich) has been  
running since 1934 with original  
Escher Wyss propellers





**LANGENPROZELTEN,  
Germany (2015)**

Modernization of the world's two most powerful hydropower single-phase motor generators (94 MVA apiece).



**Vanden, Luxembourg  
2012**

An additional 200 MW unit (#11) for the third-largest pumped storage plant in Europe



**Manolo Fortich 1, Philippines  
2015**

Four units for the cascading small hydropower plant (total 44.4 MW)



**Korvette, EU  
2015**

Controllable-pitch propeller with very high power density and very low noise level



**Stortemelk, South Africa  
2015**

Electro-mechanical equipment for a new small hydropower plant (4.4 MW total)

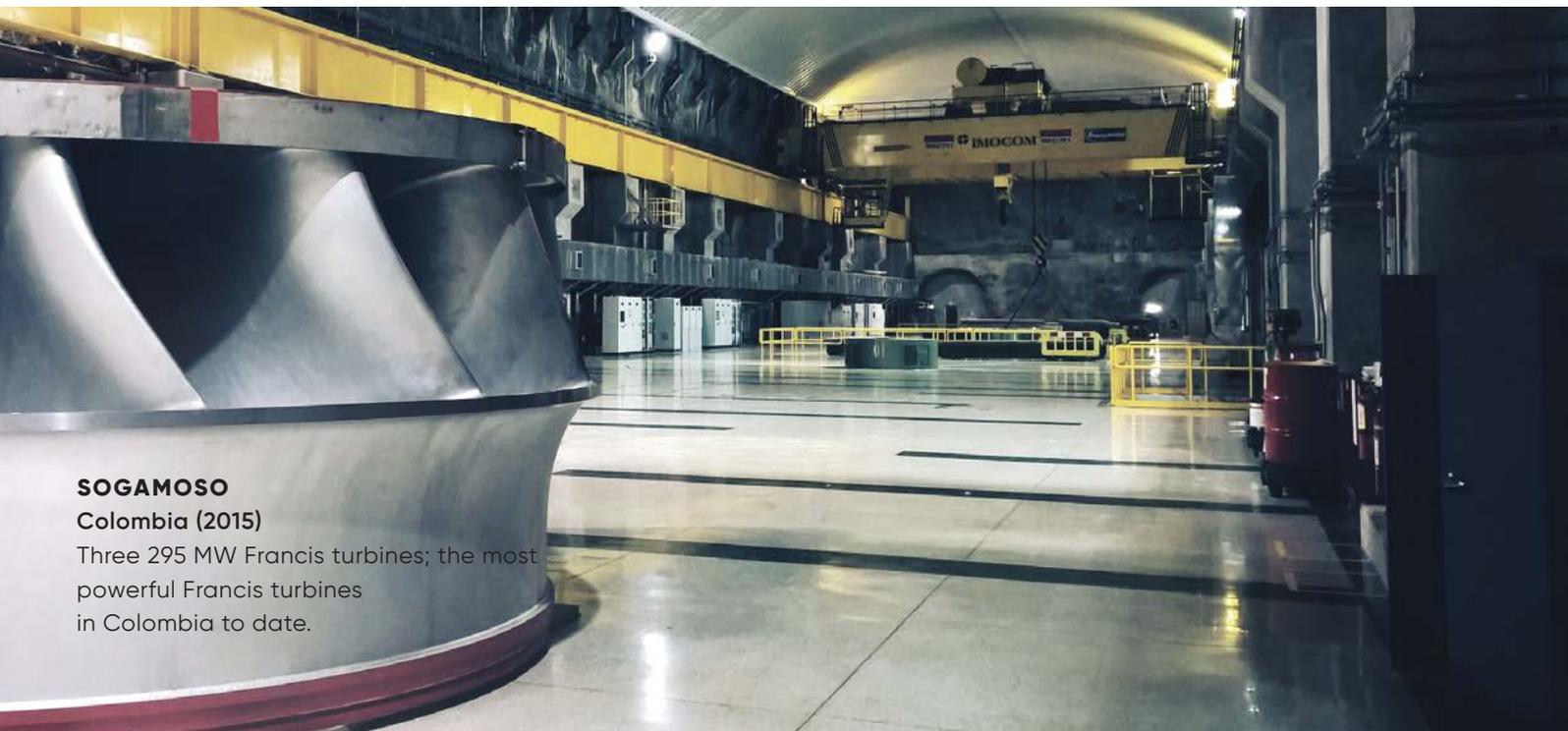




**LAÚCA**

Angola (2016)

Electro-mechanical equipment for two power houses, six 340 MW Francis units, and an eco-flow unit for the first and most important hydropower plant on the Kwanza River.



**SOGAMOSO**

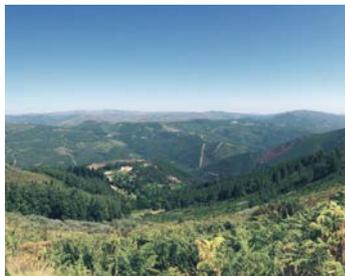
Colombia (2015)

Three 295 MW Francis turbines; the most powerful Francis turbines in Colombia to date.



**MeyGen, Scotland**  
2016

Three 1.5 MW tidal stream turbines for the world's largest commercial tidal stream energy project



**Gouveas, Portugal**  
2016

Electro-mechanical equipment for the largest hydropower complex under construction in Portugal



**Landshut, Germany**  
2016

Digital equipment for a new central control room for the connection of 170 hydropower plants



**Abdelmoumen, Morocco**  
2018

Two reversible 175 MW pump turbines for rapid load change



# State-of-the-art production capacities for a global market

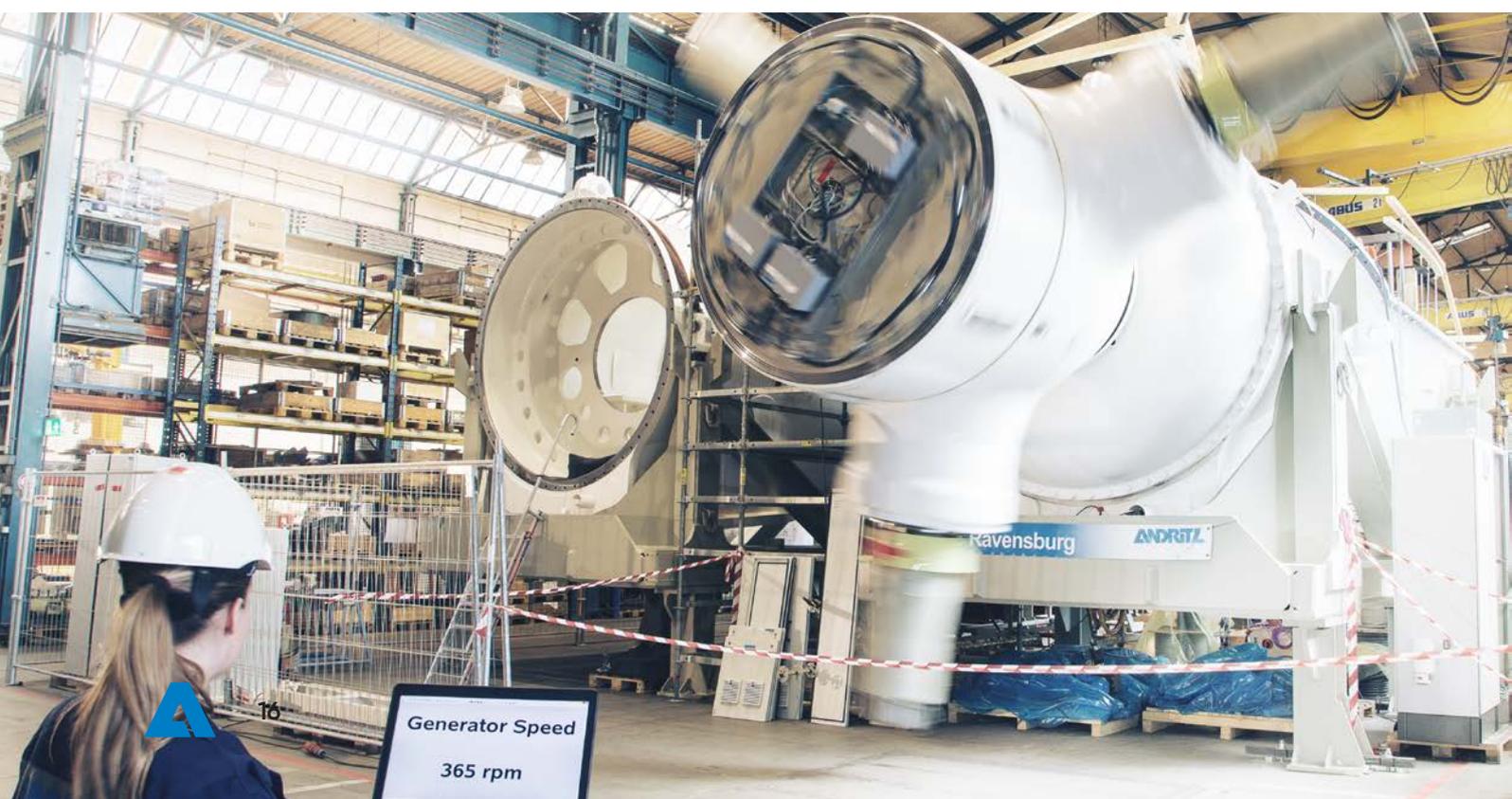
Unique dimensions require extraordinary manufacturing expertise. Some of the individual components produced at Ravensburg weigh as much as 200 tons and are more than eight meters high. Therefore, ANDRITZ Hydro Ravensburg is one of the most important manufacturing locations in Western Europe for core hydraulic components.

In the Ravensburg manufacturing halls, complex Kaplan, Francis, and Pelton turbines are produced daily. Revision and assembly of large main inlet valves, all kinds of servicing, controllable pitch propeller production, manufacturing orders for large components, and manufacturing of large shafts are also among our strengths.

Furthermore, continuous process development guarantees innovative design expertise. As a result, our engineers are able to optimize both manufacturing technology as well as customer-specific solutions. To achieve an optimal project solution, different

technologies may be used during manufacturing. Thus, a Pelton runner can either be produced with automated "3D printing" of the bucket (MicroGuss\*), by welding on pre-machined buckets (HiWELD\*) or through the fully automated CNC processing of a single forged block (fully forged).

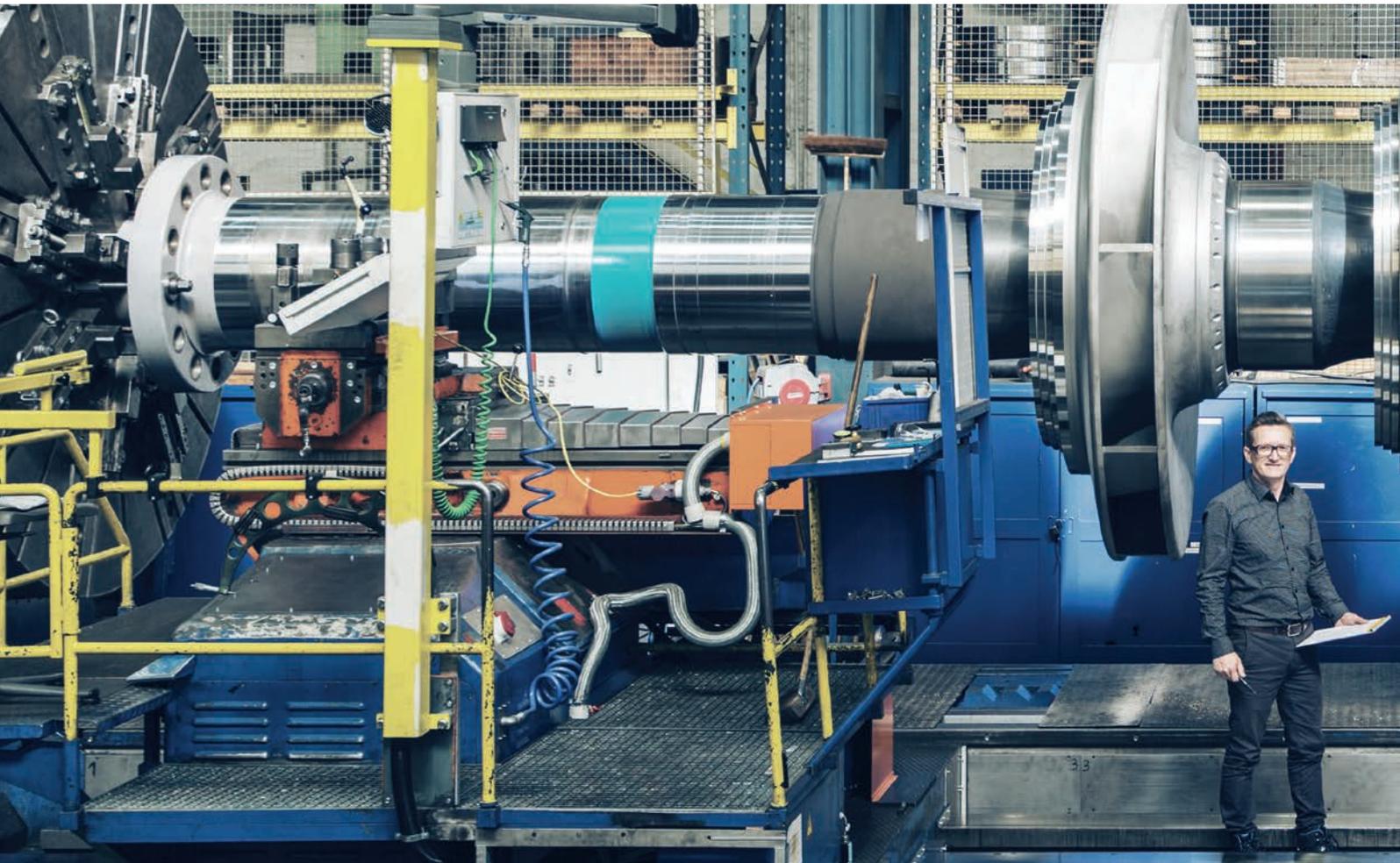
ANDRITZ' solutions for erosion-resistant coating of hydropower components are also used around the world. ANDRITZ' SXH\* coating allows for the highest abrasion protection, a prolonged life span, and reduced maintenance costs.





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Ausbildung  
Mechanische Fertigung





2

- 1 Francis turbine runner
- 2 Heavy transport shortly before departure
- 3 Spherical valve
- 4 Pelton turbine runner
- 5 Storage pump



3



4



5

# We are living in a digital world

Digitalization is one of the omnipresent and essential factors in the rapidly changing global economy. The urgent identification, collection, and evaluation of process data are decisive elements for competitiveness. Digitally linking individual components with intelligent communication and information technology makes a significant contribution to designing value-added chains so they are more stable, productive, profitable, and sustainable.

ANDRITZ is proactively shaping this process in order to make optimal use and maximum gain from these developments. Usually, digitalization in energy management is associated with new services and distributed applications, and seldom with conventional large-scale generation such as hydropower. But it is precisely the hydropower business where for many years there have been major efforts to develop digitally supported products and solutions that can

equip customer systems with the greatest degree of automation, efficiency, interconnectedness, and intelligence. An outstanding example of this process comes from the central control room of the Uniper power plants in Germany. Here 170 hydropower plants are controlled from a single location. The digital HIPASE platform is also equipped with state-of-the-art safety features for communication and data storage.



## DIGITAL SOLUTION FOR OPERATION AND MAINTENANCE

Maintenance and servicing account for a considerable proportion of the operating costs of a hydropower plant. Digitalization is an important tool for optimizing these activities and curbing expenditure. Metris DiOMera is a digital solution specially developed by ANDRITZ for monitoring and optimization. It assists with decision-making and helps to determine if and when specific components must be overhauled or replaced.

## DIGITAL SPECIAL SOLUTION

Auto-oscillation is a relatively rare but dangerous vibration phenomenon that can occur in hydropower plants. ANDRITZ has developed a new digital system in order to detect this as early as possible and take suitable measures to protect people, the environment, and equipment. The system thus increases the operational safety of our customers' hydropower plants.

## DIGITAL ENGINEERING WITH CFD AND FEA

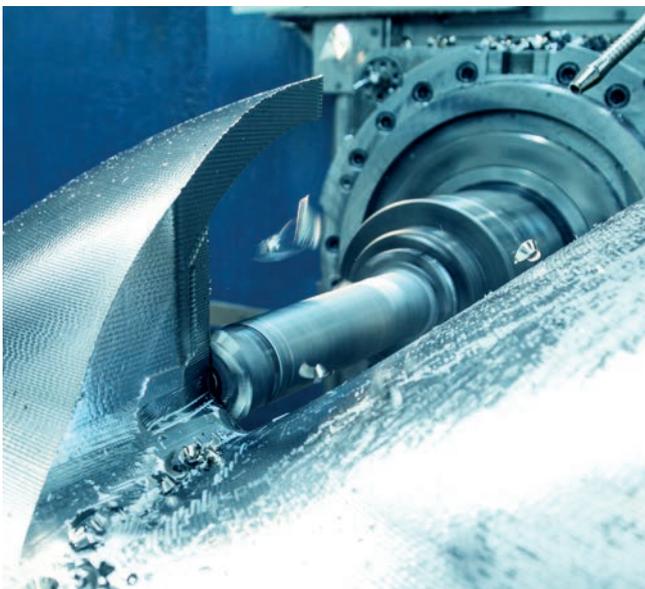
Hydraulic design and thermal distribution analysis requires a deep understanding of complex physical phenomena. Computational fluid dynamics (CFD) and

finite element analysis (FEA) provide essential insights into flow and the mechanical structural properties of hydrodynamic parts. For research and development in particular, but also in engineering, ANDRITZ has been using CFD and FEA for optimal design approaches for many years.

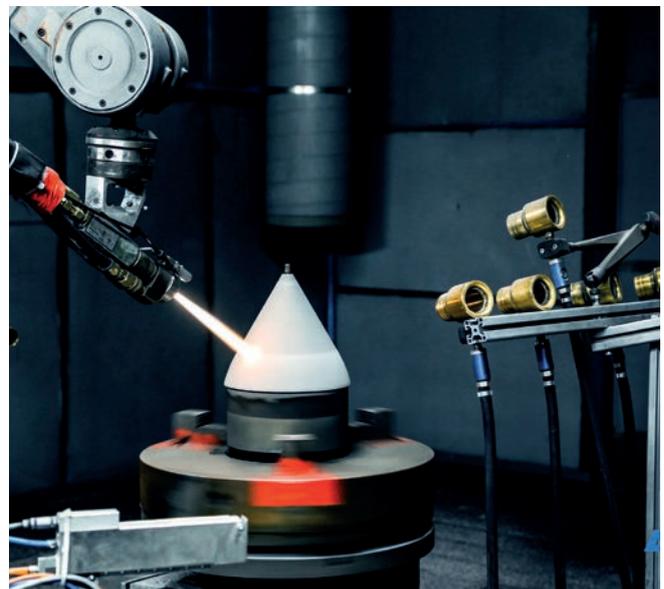
## ROBOT DEPLOYMENT IN MODERN MANUFACTURING

Of course, digitalization and automation are also becoming part of the modern manufacturing landscape when coupled with modern robotic technology. ANDRITZ Hydro Ravensburg is Europe's most modern manufacturing location for large hydropower components. Conventional manufacturing technologies are enhanced constantly and our engineers have developed technologies and secured patents to meet not just current challenges, but also future international market requirements. Whether the MicroGuss\* patented welding process for Pelton turbines or the SXH\* coating process for heavy-duty parts or the use of modern five-axis CNC machines to manufacture fully-forged parts, ANDRITZ has deployed fully-automated manufacturing processes for many years.

Automation in manufacturing



Fully automated coating process



# Successfully reaching goals and making training fun

Based on experience spanning many generations, innovative product and employee-oriented development is a key part of our long-term business success. This includes modern tools and research institutions, but also the further development of a beneficial corporate culture.

Our team of ambitious engineers and highly motivated employees focuses on optimizing existing technologies and blazing new paths toward regenerative energy production, always in conjunction with the elemental force of water.

Within our broad qualification training, we ensure that junior employees develop across industrial, technical, and commercial sectors. Part of a strong training network, together with our sister company Schuler Pressen GmbH in Weingarten we offer many and varied training and work-study possibilities. Meanwhile,

working in cooperation with the Duale Hochschule Baden Württemberg, junior academic employees receive training in order to gather practical experience. The worldwide network of ANDRITZ locations and the international character of the company's projects also offers trainees significant scope for experience in foreign countries.

The social services of a large company, the possibility of individual, flexible working hours, and the location in the inspiring Lake Constance region make ANDRITZ Hydro Ravensburg a very attractive employer.



# Social responsibility for a future worth living

## SOCIAL PROJECT HYDROPOWER IN RAVENSBURG, GERMANY



The "Social Project Hydropower in Ravensburg" is a charitable project developed and run by our employees. With the objective of recommissioning obsolete turbines in the Ravensburg community, the profits from the sale of the environmentally friendly power are used for social causes in the Ravensburg region. The first turbines, built in 1907 and 1937, respectively, have already been returned to service under this social program.

About 50 ANDRITZ employees participate in this project in their free time while the company bears the costs for consumables, tools, and the use of processing machines. Trainees are also invited to participate. The management is convinced that this way, young people get novel insights into the technology and design of turbines that they do not typically get to enjoy in their daily work.

**"Our corporate culture is appreciative, solution-focused, and team-oriented - in all areas of the company."**

**TRAINING CENTER IN LAÚCA, ANGOLA** ANDRITZ takes Corporate Social Responsibility (CSR) very seriously. During work at the Laúca hydropower plant in Angola, important CSR measures were adopted. With the goal of qualifying technicians for both the commercial operation of the power plant as well as operation and maintenance work, and to prepare people on-site for future power generation and transmission projects in Angola, a permanent training center was set up directly at the Laúca hydropower plant. As part of this training center ANDRITZ completely equipped three laboratories.



# Fit for the future - tomorrow's answers today

The digital revolution, Industry 4.0, intelligent power generation – just a few of the many keywords that are increasingly important for the world today and tomorrow. The concern is always to develop new technologies that benefit people and keep the German economy internationally competitive. In addition, mega trends such as urbanization, shifts of economic power, demographic change, climate change, scarcity of resources, and technological development are important aspects for both the near and long-term future.

## ENERGY REVOLUTION

The energy revolution is a global phenomenon and includes power, heat, and mobility. Essential elements of the revolution are the expansion of renewable energies associated with the construction of energy storage; increasing energy efficiency; and the implementation of energy savings measures. Renewable energies include hydropower, wind and solar energy, as well as ocean energy, bioenergy, and geothermal.

There are studies which suggest that in order to be able to achieve the ambitious goals set out under the Paris climate accord, at least six times more renewable energies must be added to the global generation portfolio. As a consequence, renewable energy sources would have to account for two-thirds of energy consumption and 85% of power generation by 2050.

Renewable energies are already the most important source of power in Germany and their expansion is a central pillar of the energy revolution. For example, 2017 saw an increase of 8.3 GW. In future the national power supply should become both more climate-friendly and at the same time more independent from imported of fossil fuels.

## HIGH-TECH

Pumped storage plants unite state-of-the-art technologies with low risks and low operating costs. Currently, they are the most economic technology for the long-term and efficient storage of large quantities of energy. They play an essential role in stabilizing the power grid in case of bottlenecks, and they are cost-effective to operate. Their great operational flexibility makes them an outstanding solution for successfully integrating intermittent renewable energies such as wind and solar.

In striving to exploit alternative energy sources, naturally people are turning to the oceans. There are many possibilities for gaining energy from the ocean – whether through waves, streams or tidal lift. For each geographic



**“We live in a world that is changing rapidly. Some of these changes may take years, but they are long-term and fundamental. They will design the future of all continents, countries, communities, and each one of us. And they are taking place today.”**



location there are optimized solutions. These include bulb turbines that exploit the tidal lift in bays or estuaries, tidal stream turbines on the ocean floor near the coast that make use of the underwater tidal stream, and offshore applications such as tidal lagoons.

#### **DIGITAL AGENDA**

In the future, digitalization - also known as Industry 4.0 - will play an ever greater role in the economy. It already has a wide-ranging influence on our society.

The value created with the help of technology, especially internet-based technology, is enormous.

Automation, networking, cloud services, and Big Data will be decisive

for industry. Digital solutions can be optimally adapted to customers' needs and are already important components of a future-oriented strategy for success in the digital era.

ANDRITZ constantly examines various future scenarios, trends and topics in order to find tomorrow's answers today. Proven technologies are progressively being adapted to changing market conditions so that our customers' systems will do justice to increasingly challenging future requirements. We supply long-lasting, environmentally-friendly and economically-efficient solutions for hydraulic power generation.



THE LARGEST ECONOMY  
IN EUROPE AND THE  
FOURTH-LARGEST IN THE WORLD  
(GDP: 3.26 BILLION EURO IN 2017)

## FOCUS GERMANY



6,385 kWh  
ANNUALLY PER CAPITA (2016)  
POWER CONSUMPTION

EUROPE'S **SECOND-LARGEST**  
**ENERGY CONSUMER**

SEVENTH-LARGEST IN THE WORLD

GROSS **POWER PRODUCTION**  
FROM RENEWABLE ENERGIES  
31.7 % IN 2016

60% PLANNED  
BY 2050

## EU INTEGRATED GRID

DIRECT POWER EXCHANGE  
WITH ALL 9 NEIGHBOURING  
COUNTRIES

INSTALLED  
HYDROPOWER



7.5 GW  
PUMPED STORAGE



**PSW GOLDISTHAL**  
LARGEST HYDROPOWER PLANT  
1,060 MW

Sources: BDW e.V.; BMWi; Eurostat, Wikipedia, CIA Factbook



# ANDRITZ IN GERMANY



**+6,300**

EMPLOYEES  
FROM MORE THAN 20 COUNTRIES

**+1.2 BILLION EUR**  
SALES TOTAL

**+450 MEUR**

LOCAL SHARE  
OF TOTAL SALES



MORE THAN **30**  
LOCATIONS  
INCL. MANUFACTURING  
LOCATIONS



MORE THAN

**400 TRAINEES**

IN ALL LOCATIONS

**+800 MEUR**

EXPORT SHARE  
OF TOTAL SALES

## ANDRITZ HYDRO GmbH

**+160 YEARS**  
IN RAVENSBURG



**85%** EXPORT SHARE TO MORE  
THAN **120 COUNTRIES** OF THE WORLD



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**ANDRITZ**

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