

# Kössler Report

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Dear Customers,  
Esteemed Business Partners,

As international competitions prove time and again, Austria's apprentices come out on top. The basis of this success is the principle of "Dual Training." The young people attend a vocational school to learn about the theoretical foundations of their job, and simultaneously they also undergo practical training at industrial companies. During its history of over 80 years, KÖSSLER has trained countless apprentices. At the moment we have ten young men at KÖSSLER who are to complete an apprenticeship as machine tool technicians.

KÖSSLER is well aware of its responsibility as a teacher and first employer. Right from starting with us, the future skilled employees – some of whom might even become senior executives – are instructed about values such as personal accountability, quality consciousness and team spirit. In addition to the statutory apprenticeship training program, the VOITH training workshop offers fundamental tuition during the first year. From the second year, the young people are actively working in our plant on a rota system, gaining practical experience in turbine and runner construction, as well as mechanical production.

In this Newsletter we would like to give our youngest employees an

opportunity to present themselves. We therefore asked them to tell us why they choose KÖSSLER for their apprenticeship.

Apart from "technical interest in turbines" and "close to my home", the young people stated that "excellent career prospects" and "job security" were among their main criteria. Green thinking is high on the agenda of our apprentices. They can fully identify with our company's key product: hydro power as a source of renewable energy.

We also wanted to know what our apprentices like most about their training. "Our work is very versatile" and "We are allowed to join in from the first day of our apprenticeship", as well as the excellent foundation courses at the VOITH training workshop were the most frequent comments.

How do you imagine your future career at KÖSSLER? The ones who love traveling can already see themselves commissioning one of our overseas installations. Others intend to carry on learning and wish to intensify their knowledge through further courses, or aspire to become foremen.

This kind of ambition must be rewarded. Special bonus payments for good results at school are meant to motivate our youngest employees and serve as an incentive for further excellent marks.

The final question to our apprentices was: would you choose KÖSSLER again? The unanimous answer was "yes."

We think that we can look into the future with great confidence with juniors like these!

The Kössler Management Board

*Josef Lampl     Robert Doppler*



Our 10 apprentices from the first to the third year of the machine tool technician training programme

## Cakirman – High Pressure Power Station with a Head of 1 250 Meters

With 1 250 meters, the head of Cakirman power station of Yusaka Energy (part of the Besiktas family) in Erzurum, north-east Turkey, is close to breaking all records – at least in Turkey. Measures to limit the pressure surge, as well as maximum safety requirements and quality standards are, of course, the number one priority for this power plant. The exit velocity of the water jet at the Pelton nozzles is an impressive 148 m/s, the pressure increase in the 4.1-kilometer penstock must not ex-

ceed maximally 15% of the nominal pressure. In order to meet these requirements, KÖSSLER delivered a ball valve with the extreme nominal pressure PN 160 as main turbine inlet valve, whose main seal is closed by water hydraulics. The delivery also included internally controlled nozzles, as well as a Pelton runner milled from fully forged stainless steel. The location of the plant at an altitude of 1 343 meters above sea level makes high demands on the generator and the electrical equip-

ment. The plant was commissioned in December 2010. All guaranteed performance values could be proven and verified in the presence of the customer's technical consultant Mr. Öner Gülyesil.

**Data:**

- 2 horizontal, single-nozzle Pelton turbines
- Output per turbine: 3 549 kilowatt
- Head: 1 250 meters



2 single-nozzle Pelton turbines during works assembly



Location of Cakirman power station in the high mountain region around Erzurum



Turbine-generator unit after commissioning in December 2010

## Frötuna – Hydro Power Station at a Divine Location

The name Frötuna is derived from the North-Germanic goddess Freya, responsible for fertility, love and good fortune. At the Arbogaån stream itself, electric energy was generated as early as 1915 with the help of a 50 kW Francis turbine. In 1934, the plant was upgraded to 28 m³/s and 600 kW. At the time, power station outputs were calculated in accordance with

power requirements rather than to suit the available water flow. In 2009, the owner family Ahrel decided to have the power station completely modernized and upgraded with another 15 m³/s turbine. For this project, KÖSSLER delivered a Kaplan S-bulb turbine with directly coupled synchronous generator. As a result of the optimum utilization of the river's water

volume with the new KÖSSLER turbine and the intermittent operation of the old plant, the annual output of the power station could be increased by approximately 50 %.

**Data:**

- 1 Kaplan S-bulb turbine
- Output: 860 kilowatt
- Head: 6.5 meters



The Kaplan S bulb turbine is inserted



Festive opening of the power station by the owner, the Ahrel family



## Hollersbach – Power Station in Harmony with Nature

Hollersbach power station of Salzburg AG is situated at the outskirts of the Hohe Tauern National Park. It is an excellent example of resource-sparing, eco-compatible electricity generation from renewable hydro power. Built in 1949, the plant was originally located right in the middle of the small town of Hollersbach. It had an initial output of 1.320 kW. In 2009, it was finally decided to build a new power plant at a different site.

By increasing the power station head - the power house was moved nearer to the Salzach - and improving the nominal discharge, the output of the plant could be boosted to 5 353 kW. By appointing an ecological construction supervisor, Salzburg AG made sure that the company's own ambitious nature preservation goals were implemented, for example quadrupling the residual water flow into the Hollersbach stream, or the fish-friendly design

of the bottom of the power station outlet. The power station officially entered service in September 2010.

**Data:**

- 1 Vertical Francis spiral turbine
- Output: 5 353 kilowatt
- Head: 84 meters



Assembly of the turbine and the 33 ton-generator



The power station is officially opened by the Head of the Board of Salzburg AG, Dr. Arno Gasteiger



## Sisimiut – Renewable Energy for Greenland

Sisimiut power station is the second plant delivered by KÖSSLER to the prime contractor Istak hf. Greenland is making great efforts to increase its share of renewable energy from hydro power, in order to supply the often very remote and isolated towns with clean energy and close down existing diesel units. In this climate and with permafrost grounds, power station projects make high demands on technology and know-how. The

power station is supplied with water from a glacier, and especially during the long winter months maximum operation safety is a priority, particularly with a view to the cooling water system and frost protection. Due to the climatic condition, there were only brief periods of time to complete the assembly, and the entire equipment weighting many tons had to be delivered to the power station by cargo ships and/or helicopters.

The power station entered service in 2010. In the meantime, KÖSSLER has received an order for equipping the third hydro power station in Greenland: Ilulissat.

**Data:**

- 2 Vertical Francis turbines
- Output per turbine: 7 645 kilowatt
- Head: 89.5 meters



Delivery and assembly of the two Francis spiral turbines



Turbine hall after commissioning in spring 2010

## Renewable Energy from Hydro Power – More Important Than Ever!

Faster - higher - stronger: in our affluent, performance-oriented society, the demand for energy never ceases to rise. Energy supply is therefore – and particularly in the light of recent events – a key topic that is being discussed all over the world.

Compared with natural gas and oil, electric power is still a relatively affordable commodity and available more or less round the clock. But who among us is always using it consciously and economically with the intention to save energy?

Fortunately, the growth rates for renewable energy are rising in line

with our energy consumption. Hydro power, as the oldest and largest source of renewable energy, takes up a considerable share in these efforts. It is indispensable when it comes to climate protection, and its reliability in terms of generating and storing power can be regarded as almost optimal.

Both VOITH and KÖSSLER were able to continue their business activities successfully over the last few years. The expansion of our company in the form of investments and the recruitment of additional staff has progressed further.

Today, KÖSSLER employs 20 % more people than two years ago and is more than likely to increase this workforce over the next few years.

And therefore we feel encouraged in our belief that “Energy generation from renewable hydro power is more important than ever!”



The KÖSSLER team comprised nearly 100 employees - among them 10 apprentices - at the end of 2010.

### Editorial:

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