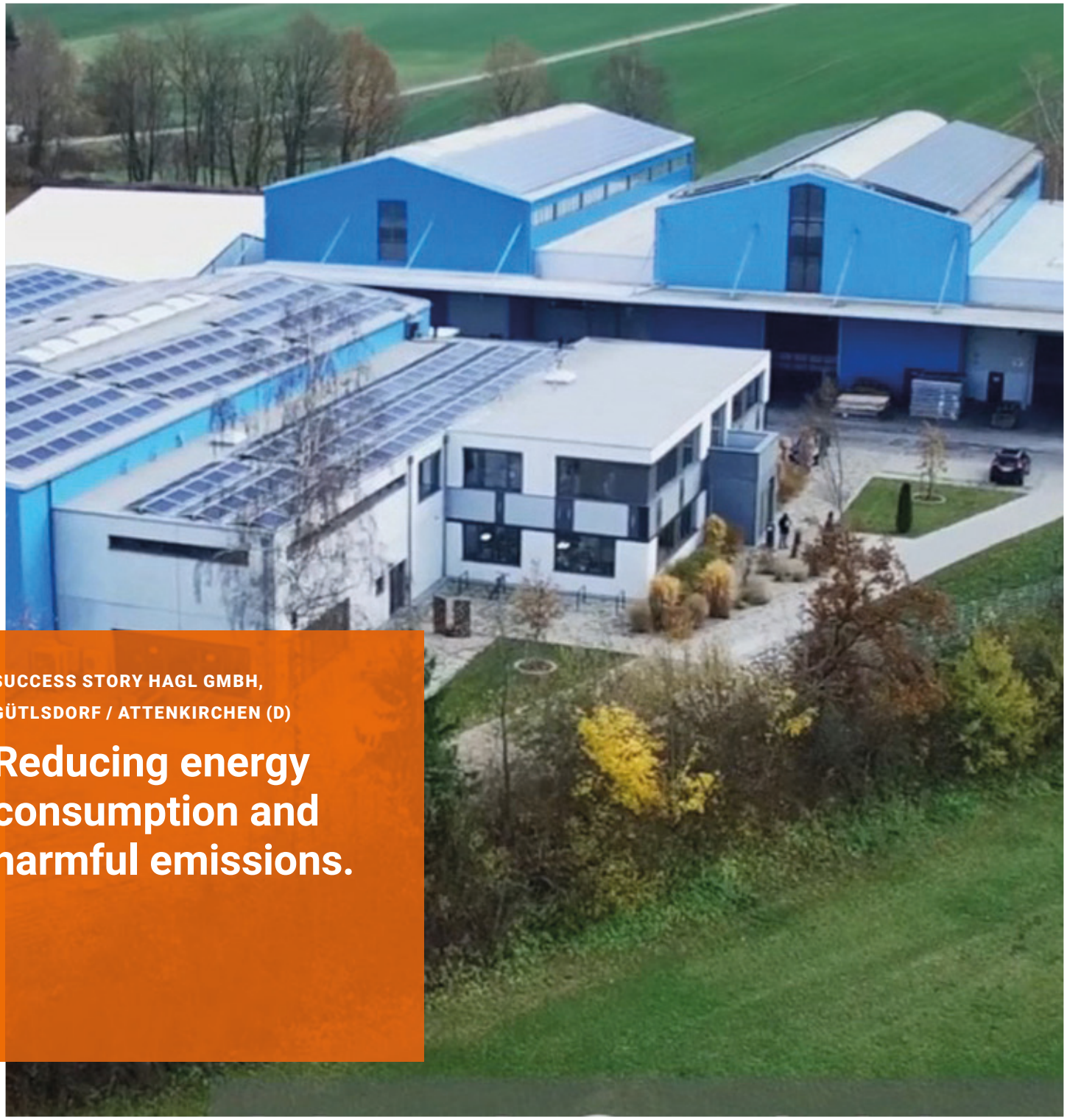


SUCCESS STORY HAGL GMBH,
GÜTLSDORF / ATTENKIRCHEN (D)

Reducing energy consumption and harmful emissions.

Bringing thermal energy to where it can be used. With Belimo Energy Valve™

It is not just the rising energy prices that is making heat recovery increasingly interesting for companies. Hagl GmbH in Gütlsdorf/Attenkirchen, which has been operating successfully for over 25 years in the sheet metal and metal processing sector with 130 employees, has shown the courage to embrace new ideas in its use of alternative energy sources and improving energy efficiency. For example, it has already installed a well system with a heat pump, a photo-voltaic system, hot-water generation via an evaporation rig cast into the baseplate and built a wall heating system for heating and cooling. The latest project at Hagl is the heat recovery system on the hydraulic presses to heat the company buildings. The Belimo Energy Valve™ is largely responsible for ensuring that the volumetric flows, supply and return temperatures and energy recovery on the presses can be regulated, recorded and evaluated.

TYPE OF BUILDING
Production plant

PROJECT
Heat recovery

TRADE
HVAC

PRODUCTS
Belimo Energy Valve™, 2- and 3-way characterised control valves, rotary actuators, sensors, Belimo MP-Bus

BELIMO

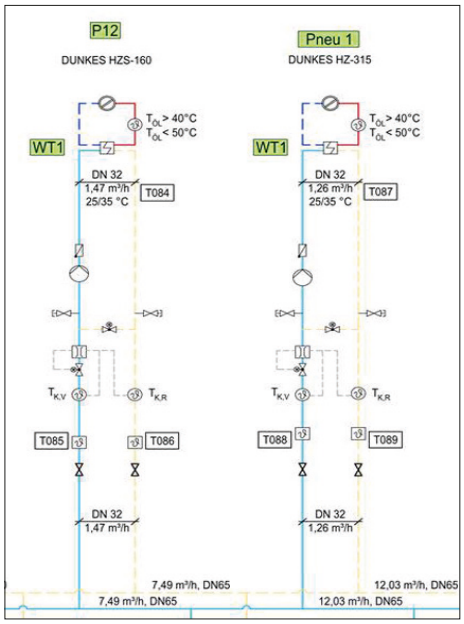
Hagl GmbH – Tradition and innovation

At the beginning of the project, two production halls on the company grounds were heated independently of one another with existing heat pumps. A third hall had just been built. The heat pump in the first hall had been decommissioned as part of the heat recovery project, and the heating circuit distributors of the three halls were connected via a long-distance pipeline. This long-distance pipeline now delivers heat where it is needed based on demand. All halls have concrete core activation, which now also stores thermal energy in addition to its temperature control function.

Decommissioning the old heat pump in the first hall also meant that the water heating system installed there could no longer be used. It requires a relatively high temperature level, which adversely affects the heat pump efficiency. As a result, a new water heating system using heat extracted from a compressed air plant was installed and configured to deliver a set output temperature of 75°C. However, as it does not generate heat continuously, but only when compressed air is withdrawn, the company had a 2000-litre buffer storage tank installed. This heat is available to heat water at all times. Thanks to the low water consumption, the waste heat of the compressed air system can also be fed into the heating system around the clock. Heat is recovered via a heat exchanger connected to the presses' hydraulic oil circuit. A normal 3-way mixing valve was to be used here.

In contrast to the originally planned conventional solution via a 3-way mixing valve in a mixing circuit, this was broken down into two 2-way control valves. The Belimo Energy Valve™ installed in path A to AB controls volumetric flows, records supply and return temperatures and optimises the system to ensure that it always works in an energy-efficient range. The optional connection via MP-Bus, the bus protocol developed specially by Belimo, is another benefit of these intelligent valves. This reduces the complexity of cabling significantly. The second valve in the bypass of the mixing circuit (path B to AB) is a Belimo characterised control valve, which is also controlled by MP-Bus and actuated inversely to the energy valve.

Comparing the costs of using the conventional 3-way mixing valve and the Belimo Energy Valve™ quickly showed that the additional costs of the energy valve are compensated via the significantly greater benefits. Additional components like Belimo sensors integrated via MP-Bus actuators, change-over valves in the heating circuits or a butterfly valve at the well feed etc., permit perfect communication with the superordinate control technology. And the fact that Hagl GmbH has a single contact for the field devices also has a positive impact on planning, lead times, support and costs.



"Have the faith to go your own way." The mentality of founder Helmuth Hagl is still alive today. And that refers not only to the spirit of innovation and the state-of-the-art production methods for sheet metal and metal processing.
The complex evaluation of the status quo and precise planning and use of high-grade and intelligent components by Belimo were the key factors for this project.

Hagl GmbH's company motto

The first heating season, 2017/2018, went well

The trend has been recorded since the end of October 2017, including all relevant temperatures and volumetric flows. Initial figures are available: by the end of April 2018, roughly 35,000 kWh had been extracted from the cooling system (and rising), with slightly restricted operation due to construction work. The heat generator running time was reduced accordingly. There were no unexpected hall temperatures and the heating load was fully covered by two heat pumps and the heat recovery system. New purchases like presses and laser cutting systems, for example, which permit heat recovery from their cooling system, will be incorporated in the project in future and used for energy purposes.

Key instruments created

The question of amortisation of the entire system, which is important to Hagl GmbH cannot be considered holistically due to the system variability, the individual stand-alone solutions and plant connections. What can be said is that the individual measures pay for themselves within a period of between two and five years. The preceding energy study created mechanisms and tools to visualise the heating and cooling energy flows transparently. In the long term, these instruments can produce evaluations and detect and implement optimisations.

THE PROJECT STAKEHOLDERS, FROM LEFT TO RIGHT:
Harald Joachimsthaler (MSR Crew, Haag a.d. Amper), Martin Froese-Peeck (IB Vogt GmbH, Freising), Swen Gasch (BELIMO Stellantriebe Vertriebs GmbH, Stuttgart), Thomas Holsten (Holsten Systems GmbH, Garching), Jürgen Hagl (Hagl GmbH, Gütlsdorf / Attenkirchen)

ADVANTAGES OF THE BELIMO ENERGY VALVE™
The Belimo Energy Valve™, which is comprised of an air bubble-tight closing 2-way characterised control valve, volumetric flow meter, temperature sensors and an actuator with integrated logic, combines the five functions of measuring, controlling, balancing, shutting and energy monitoring in one easy-to-install unit.

- Quick and reliable dimensioning as well as simple commissioning
- Energy-saving thanks to the automatic, permanent hydronic balancing
- Ensuring the correct amount of water with differential pressure changes and with partial load
- The Delta-T management always optimises and guarantees efficient operation

The Belimo Energy Valve™ is also an Internet of Things device (IoT). Users can create their own account in the Belimo Cloud for full transparency on the energy consumption of the cooling/heating application anytime and anywhere.

All inclusive.

Belimo is the global market leader in the development, production, and sales of field devices for the energy-efficient control of heating, ventilation and air-conditioning systems. The focus of our core business is on damper actuators, control valves, sensors and meters.

Always focusing on customer value, we deliver more than only products. We offer you the complete product range for the regulation and control of HVAC systems from a single source. At the same time, we rely on tested Swiss quality with a five-year warranty. Our worldwide representatives in over 80 countries guarantee short delivery times and comprehensive support through the entire product life. Belimo does indeed include everything.

The "small" Belimo devices have a big impact on comfort, energy efficiency, safety, installation and maintenance.

In short: Small devices, big impact.

- 5-year warranty
- On site around the globe
- Complete product range
- Tested quality
- Short delivery times
- Comprehensive support

EN – 10.2018 – Subject to technical modifications

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