

FOCUS

2024

Customer magazine of Schmid energy solutions

Heating systems
are our passion –
solutions are our
strength.

Sustainable process heat
for the industry



SCHMID
energy solutions

Technological leader with a high level of expertise in sustainable energy solutions - a Swiss family business with a vision

Schmid energy solutions stands for innovation and has been developing sustainable combustion systems since 1936. The consistent customer focus and the passion of our approximately 520 employees make Schmid a technological leader and global player for renewable energies.

Schmid energy solutions is built on a strong foundation and is constantly evolving as a company. We research new ways to generate sustainable heat energy every day. The highest quality of our solutions is as self-evident as the development of the best technology. The robust construction and durability as well as the efficiency and operational optimization of our systems contribute significantly to sustainability. Moreover, Schmid also creates emotional and long-term connections.

From planning to implementation – our teams in technology, automation and installation planning accompany projects well established and with a great deal of expertise.



Schmid energy solutions is future-oriented and close to the customer. Close cooperation with our customers gives us the right perspective to develop and implement needs-oriented projects. This is our strategy and our key to success.

Our product range of combustion systems and heat pumps is broad, and with innovative technology, is groundbreaking in the market. We offer local and district heating solutions as well as process steam systems based on biomass to municipalities and industrial companies. Single-family and multi-family homes as well as agricultural, forestry and wood processing companies also find the right solution with Schmid energy.

We want to continue to inspire and create trust through environmentally friendly energy solutions and sustainable services.

Philipp Lüscher
CEO Schmid AG energy solutions

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Professionals in after sales – to your advantage

The heating systems from Schmid are intelligent, sustainable and reliable. Regular maintenance and professional service are the most important measures to positively influence the operational reliability and operating costs of a system.

Well-instructed and motivated system operators are essential for high efficiency with maximum effectiveness and low emissions. The resulting gentle operation significantly increases the service life of a system.

The services provided by Schmid Customer Service also make it possible to plan costs and reduce system failures and expensive consequential damage.

We work with you to determine the appropriate service package, including the scope of maintenance and intervals to suit your needs.

Our services

- Inspection of all system components such as silo filling, silo discharge, transportation systems, combustion, ash removal, heat exchangers, etc.
- Function checks of the control system and combustion control
- Individual maintenance and cleaning work
- Review of safety equipment and advice on new legal provisions
- Analysis and advice on optimizing operations
- Advice and assessment of repairs and replacement of worn and defective components
- Adjusting the system for high performance and low emissions
- Exhaust gas measurement in accordance with cantonal regulations
- Monitoring of official measurements and maintenance to ensure compliance with legally required emission values

Your advantages

- High operational reliability and system availability
- Highest technological standard
- Efficient and gentle operation
- Resource planning and scheduling
- Reduced planning and monitoring costs for plant operators
- Compliance with legal requirements

The varied and exciting tasks of our After Sales team

Commissioning – a combustion plant is started

A carefully trained commissioning engineer checks all installations, configurations and parameters to ensure a smooth start of your system. Then, in collaboration with our technical support team, all systems are optimized to ensure efficient and effective operation. Owners, system operators and employees are carefully introduced to the functions and operation of the system at the combustion plant. This structured process is the cornerstone for professional, safe and efficient operation of the system.



Competent chimney sweeps meet the legal requirements and have satisfied customers

Chimney sweeps are confronted with a variety of modern heating and combustion systems and are an important key to ensuring low-emission and therefore environmentally friendly operation. It therefore makes sense for a team of Schmid energy solutions specialists to provide practical training for chimney sweeps on the products and operationally relevant features as well as their control and regulation in order to ensure efficiency and safety during maintenance and cleaning.

Maintenance and inspection for performance and safety

Maintaining the performance, as well as safe and reliable operation of a system requires it to be in perfect condition. Maintenance and inspection by a Schmid technician helps to achieve precisely this goal. Malfunctions in heating operation and potential problems can be identified at an early stage and consequential damage and unplanned downtime can be avoided.

Ensuring efficient operation with specialist knowledge – training from Schmid

Our practice-oriented training courses are not just reserved for our employees. It is very important to us to impart knowledge and skills to owners, installers and system operators so that they can operate and maintain the system optimally. The training courses are designed to meet these specific requirements and include both theoretical and practical elements. The aim is to ensure that minor problems can be solved independently and that the system can be used sustainably.



Extend performance and service life with maintenance service

Choose a customized maintenance plan now.



Customer Service
Schmid energy solutions

Plannable costs

Regular maintenance also makes it easier to plan costs and future investments. Our team deals with the peculiarities of our systems on a daily basis and can therefore optimally assess the wear and tear and expected service life of spare and wear parts. Based on this experience, we are in a position to make a competent recommendation regarding preventive measures.

Prepared for many eventualities

With our spare parts warehouses strategically located along the A1 highway and qualified supply partners, we are prepared for all eventualities. In this way, we ensure that even unforeseen breakdowns are rectified as quickly as possible and that the supply of heat to our customers' premises is not interrupted.



Use of Telemaintenance for system and operational optimization

Our experts have the option of using a real-time secure remote connection to access the system or the system operating data stored on an internal high-security server for analysis. Remote maintenance technology makes it possible to provide advice or directly optimize operations. Faults can also often be rectified quickly and efficiently. Based on the stored operating data, we are able to carry out various analyses in order to develop measures to optimize the operating behaviour of the respective system. Technological advances, individual requirements and the goals of heat production or the customer are taken into account. Optimization measures reduce costs, save fuel, increase the production of thermal energy and have a positive effect on the environment and the service life of your system.

Hotline – After Sales telephone support

Our support team is very familiar with the specific requirements of our furnaces and is therefore able to provide reliable troubleshooting support. Our supporters are often able to discuss and resolve faults over the phone, hand in hand with our customers.



Emission maintenance to protect our environment

Thanks to our precise and reliable emissions maintenance, you can be confident that compliance with all relevant requirements and regional regulations is ensured. Should action be required, our support team will be happy to help you find a solution and optimize your system if necessary.

Warranty extension – long-term protection

Our extended warranty covers the cost of spare parts as well as the necessary travel and labor expenses. This allows you to look to the future of your system with peace of mind.

State-of-the-art technology – control and system retrofit

We are happy to support our customers in bringing their existing system up to the latest state of the art with a retrofit. By replacing outdated components and integrating modern control systems or assemblies with additional functions, the efficiency, reliability and flexibility of the system are increased. A retrofit can be a cost-effective alternative to a new purchase and significantly extends the service life of a system. Our development team works daily on individual retrofit solutions for KÖB and Schmid furnaces that are precisely tailored to the needs of our customers.



Impressions from our International Sales Conference 2024 in Poland



The fifth International Sales Conference also remains unforgettable. We had an inspiring exchange with forward-looking ideas, valuable discussions that sharpened our understanding of other markets, as well as interesting presentations with new technologies and a lot of know-how to strengthen our expertise. Not to forget the impressive factory tour. Our colleagues in Poland showed us that they put their heart and soul into production and are proud to be part of Schmid's success story.

Conference highlights

We were able to capture some of the best moments of the conference and invite you to enjoy these pictures.

Interesting presentations

Our speakers offered valuable insights and innovative ideas for new approaches.

Factory tour

The tour of our plant was a special highlight and offered a deep insight into our production processes.

Lively exchange

The conference fostered an intensive exchange and numerous good discussions that further strengthened our collaboration.

Fun and networking

In addition to highly technical topics, there was also plenty of time for fun and networking. The perfectly selected supporting program created a positive atmosphere and deepened the relationships among the participants.

Thanks to the participants

Many thanks to all participants. Their active participation and stimulating discussions made this conference a successful and lasting event. See you next time!



Maximum efficiency for biomass heating systems

Biomass heating systems are always caught in the tension between economic efficiency, ensuring security of supply and compliance with legal requirements. As a manufacturer of efficient wood-fired boilers, Schmid energy solutions strives to develop sustainable energy solutions in order to operate heating systems as economically as possible.

Biomass heating systems today face a variety of challenges that can occur individually or in combination:

1. Profitability is to be increased.
2. Sustainability targets are to be achieved.
3. More heating output is to be generated with (almost) the same building fabric, when for example there is no space for extending the fuel silo.
4. The biomass heating system is to be expanded while minimizing the additional use of resources.
5. The range of fuel quality is to be extended due to the availability of fuel, for example wood chips with a higher moisture content should also be burned.

Basically, all these challenges can be summarized under the need for maximum efficiency for biomass heating plants. Schmid energy solutions and its new partner StepsAhead want to make biomass heating plants as efficient as possible. Active flue gas condensation with an absorption heat pump increases efficiency and makes additional heat usable.

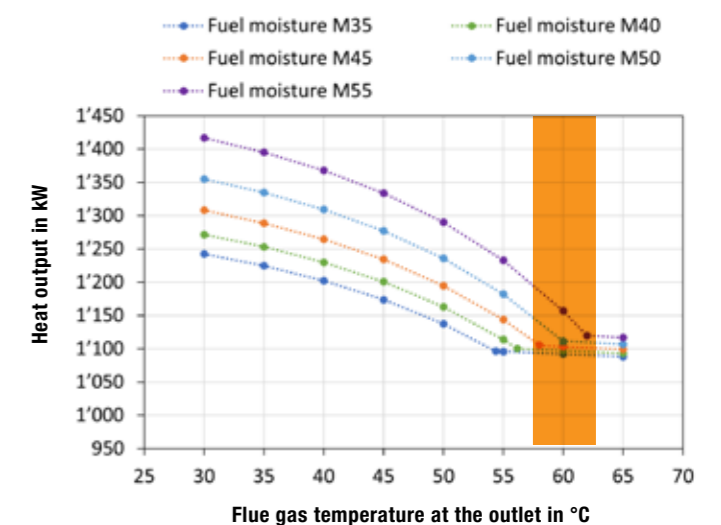


Unused energy in the flue gas of the wood-fired boiler

The flue gas from a biomass furnace contains around 10–25 % water vapor by volume, depending on the fuel moisture content. A great deal of heat is stored in this, which is why around 670 kWh of heat is released per ton of condensed water vapor during condensation.

For condensation, the flue gas must be cooled below its dew point temperature. Depending on the fuel moisture and residual oxygen content in the flue gas, this temperature is around 45–60 °C | 113 °F–140 °F. The further the flue gas can be cooled in the flue gas condensation system, the more condensation heat can be recovered.

In practice, the heat network return is often used to cool the flue gas condensation system. Its temperature is often in the range of 55–60 °C | 131 °F–140 °F and the achievable flue gas temperature is at least 3 K | 5.4 °F higher due to the coarseness in the heat exchanger and therefore close to or above the dew point temperature. Under these conditions, the water vapor in the flue gas cannot be condensed or can only be condensed insufficiently; the flue gas condensation system is limited in its performance or not functional at all, as can be seen in the following diagram (usual flue gas temperature range colored).





Active flue gas condensation with absorption heat pump – effective and efficient

The absorption heat pump is part of the flue gas condensation system with an economizer downstream of the boiler and provides the flue gas condensation system with sufficient cold cooling water. The low-temperature heat recovered from the flue gas is fed into the network return via a temperature rise, together with the heat from the boiler supply. A possible integration variant in the hydraulics of the heating plant is shown below. The temperatures are only to be understood as examples and vary depending on the operating point.

Advantages of warm water driven power – maximum efficiency when driven with hot water

The absorption heat pump uses heating water as the drive energy to power the heat pump. The solution from Schmid energy solutions and StepsAhead enables the absorption heat pump to be used economically with hot water boilers with hot water boilers (105 °C | 221 °F supply temperature) instead of hot water boilers requiring testing, which reduces investment, operating costs and expenses. As a result, efficiency increases of around 20 % can be achieved, which corresponds to an additional heat yield of 20–25 %.

With an absorption heat pump driven by hot water (150 °C | 302 °F supply temperature), an additional 5–10 % increase in efficiency can be generated.

Use of the new revolution adaptive combustion control system: Double's the benefit for the customer

Schmid energy solutions generally uses the new revolution adaptive combustion control system for systems with absorption heat pumps, with double the benefits for the customer:

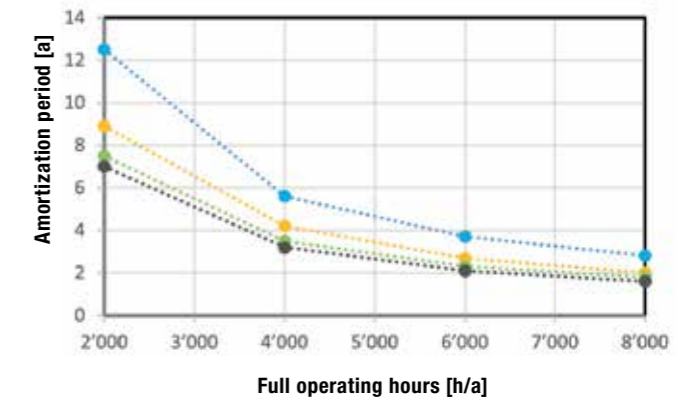
1. Combustion in the biomass boiler is reliably regulated to ensure the lowest possible residual oxygen content in the exhaust gas while maintaining a consistently high burnout and changing fuel qualities, without any intervention by the operator.
2. The low excess air means a lower dilution of the water vapor concentration in the flue gas and thus an increase in the dew point temperature of the flue gas: Condensation starts earlier and the yield of the condensation system is increased.

Rapid amortization possible

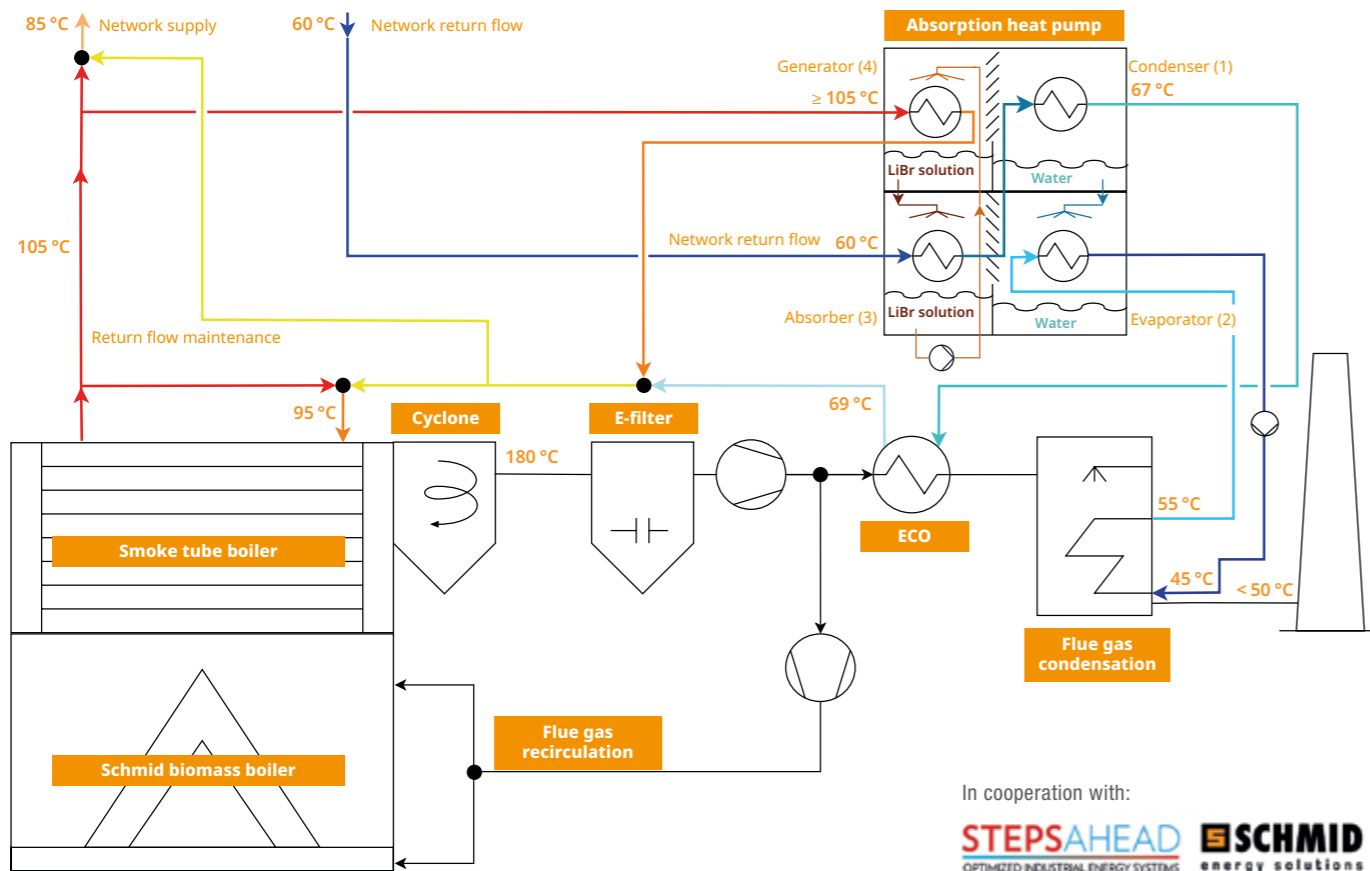
Amortization periods of less than 5–6 years can be achieved with at least 4 000 full operating hours per year, and even less than 4 years for systems with a nominal boiler output of at least 3 800 kW | 13.0 MMBH. The amortization times for various rated outputs of the UTSR series are shown opposite for the following boundary conditions:

- Wood moisture content M55
- Return temperature 55 °C | 131 °F
- Flow temperature 85 °C | 185 °F
- Financing interest rate 3 % per year
- Heat production costs 0.07 EUR | 0.75 USD per kWh

Amortization time via boiler utilization at RL/VL temperature 55 °C / 85 °C | 131 °F / 185 °F



Integration of the absorption heat pump in a Schmid biomass heating plant



In cooperation with:
STEPSAHEAD OPTIMIZED INDUSTRIAL ENERGY SYSTEMS
SCHMID energy solutions

Application areas of the preconfigured 105 °C | 221 °F systems

- Wood moisture in fuel M35–M55
- Return temperature of the mains not more than 60 °C | 140 °F

Advantages at a glance

- Pre-configured complete systems from Schmid and StepsAhead consisting of biomass boiler, economizer, condensation system and absorption heat pump with 105 °C | 221 °F hot water drive across the output range of the UTSR series from 1 200 kW to 8 000 kW | 4.1 MMBH to 27.3 MMBH
- Project-specific design of 150 °C | 302 °F hot water systems consisting of a dirty biomass boiler and StepsAhead absorption heat pump
- Stable and low residual oxygen content over a wide range of fuel moisture levels thanks to the use of the new Revolution adaptive combustion control system with significant benefits for heat recovery by raising the water dew point
- High partial load capability of the absorption heat pump (up to 10 % of nominal output)
- Low additional maintenance and servicing costs
- Power consumption: < 1 % of the heat output of the absorption heat pump > approx. 25 % of the heat output for compression heat pumps
- Safe operating materials: water and lithium bromide salt



Infos Absorption heat pump



Brochure Absorption heat pump



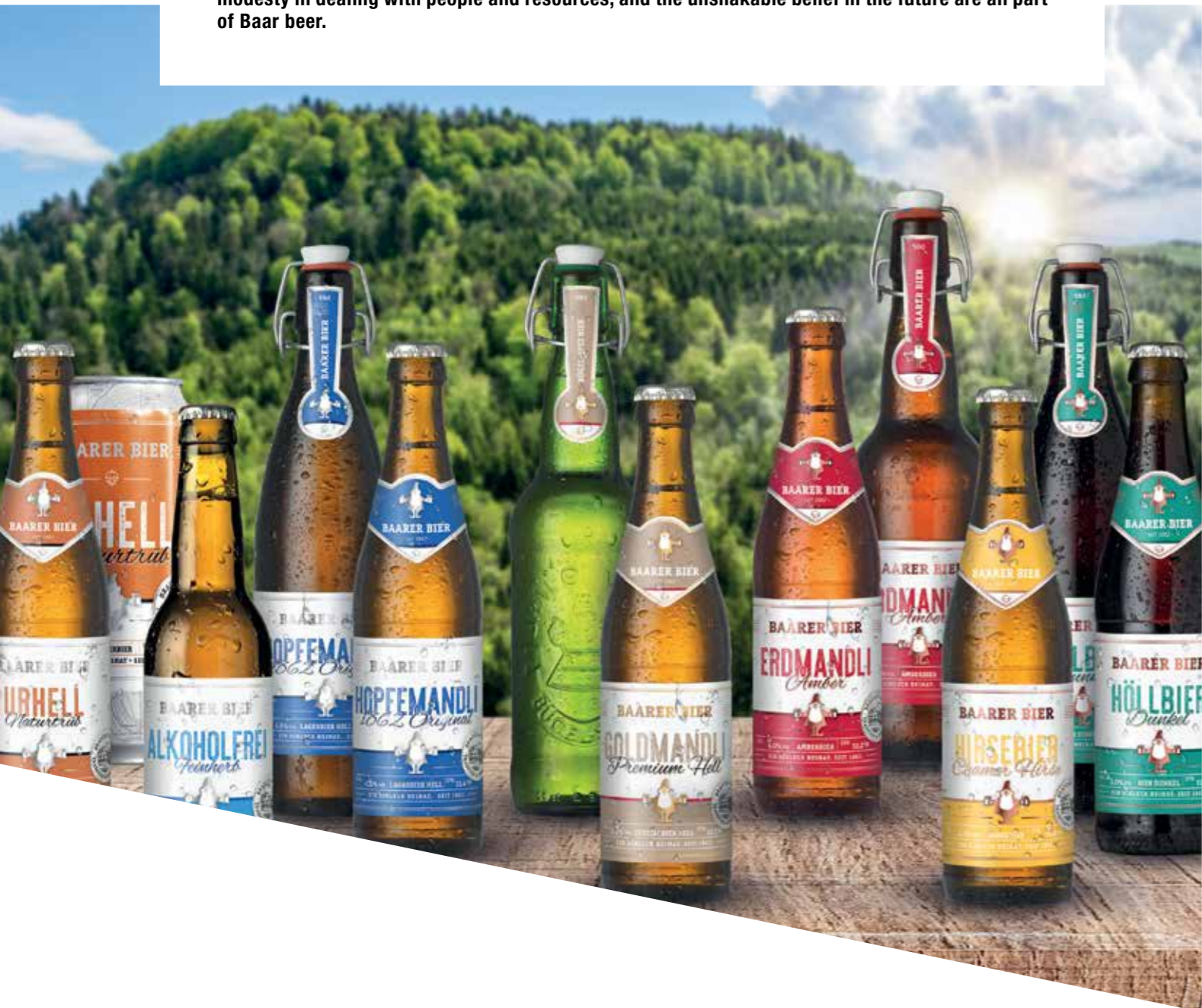
Efficiency-enhancing products

First Swiss brewery with CO₂-neutral energy supply

Brauerei Baar AG / Baar ZG / Switzerland

Baar has been wonderful since 1862 - and not just from a beer perspective. The art of brewing brought not only drinking pleasure but, also a spirit of innovation. Five generations led the brewery through the highs and lows of the fluctuating economy and two world wars. The Baar brewery has been owned continuously by the Buck-Uster beer dynasty since 1902.

Today it is "in good shape" with popular old and new beer specialties. It has strong ties to its beer friends - far beyond Baar. The pride in its own local brewing art, the persistence in quality, the modesty in dealing with people and resources, and the unshakable belief in the future are all part of Baar beer.



Connected to nature

The sustainability strategy of the Baar brewery includes a CO₂-neutral energy supply. 50 % of the electricity comes from the photovoltaic system installed on the brewery roof. The remaining 50 % of the electricity comes from Swiss hydropower. In November 2023, the brewery switched to heat energy from Swiss wood. The Schmid wood pellet furnace provides all the process heat for production as well as the comfort heat for the production rooms, the offices, the shop, the restaurant and the apartments on site.

"We are the first Swiss brewery to be able to claim that its energy supply is CO₂-neutral - and all without having to purchase any certificates. It is an indescribable feeling to actually produce our Baar beer from 100% renewable energy after 10 years of preparation." Martin Uster and Urs Rüegg, management

"We had to combine the various load profiles of our production, which fluctuate greatly, with the inertial nature of heating. The design of the storage was a challenge, as was the storage management." Urs Rüegg, Brewmaster

Schmid boilers – a reliable market leader

The brewery also relies on regional and national partners and sustainability when it comes to investments. Because Schmid is the market leader in Switzerland and is known for its safe and reliable service, the Baar brewery opted for the Schmid combustion system.

"The collaboration was very pleasant and the Schmid employees provided us with competent support. The boiler runs quietly, trouble-free and requires little maintenance. Our employees in production do not notice the energy from our wood boiler. The automatic switching on and off works perfectly and the efficiency of 93 % is remarkable" Urs Rüegg, Brewmaster

Facts and figures

Total capacity

450 kW | 1.5 MMBH

Process heat

800 000 kWh consumption for the entire production process

Comfort heat for over 2 600 m²

800 m² | 8 600 ft² living space
200 m² | 2 200 ft² restaurant
600 m² | 6 500 ft² retail space
200 m² | 2 200 ft² offices
850 m² | 9 200 ft² production area (reduced heating)

Production has now switched to renewable energies. The brewery's agenda now includes efficiency, reducing the ecological footprint of the raw materials required and optimizing the vehicle fleet.

The savings cannot yet be estimated precisely, as the boiler has not been in use for a full year and the winter of 2023/24 was mild. The goal is to save around 15–20 % energy. According to Urs Rüegg, this should be possible based on the experience gained in the first 8 months of operation.

Heating with wood - an external heat storage makes it possible

The Baar brewery is one of the first breweries in Switzerland and one of the first companies in the food industry to operate a wood-fired boiler without an additional fossil fuel peak load boiler. Accordingly, no empirical values were available for the planning. Urs Rüegg and his team therefore spent years intensively studying the weather conditions and the energy requirements of production.

This enabled them to accurately assess the biggest challenge of the project, namely the irregular energy demand, which occurs suddenly during beer production. Thanks to a heat accumulator in the form of a 30 000-liter | 7 925 gallon tank, sustainable heating with wood is still possible. This saves the brewery 100 000 | 26 417 gallons of heating oil per year.



BRIEF INFO

Product type	Underfeed grate combustion system UTSP-450
Application area	Beer production/building heating
Fuel	Wood pellets A1
Fuel requirement	180 t
Operating medium	Low-pressure hot water (115 °C 239 °F)
Capacity	450 kW 1.5 MMBH
Silo	2 former grain silos of the brewery
Discharge	Silo discharge Steiner SF30KR
Flue gas dedusting	Electrostatic precipitator (MF-8R150)
CO₂ substitution	approx. 320 t / year
Heating oil savings	100 000 l / year 26 417 gal / year
In operation since	November 2023
Owner	Brauerei Baar AG
Installation site	CH-6340 Baar ZG
Project planning	Brauerei Baar AG and Vonplon Architektur AG, Olos AG Engineers for energy and building technology
Installation	Hensler Heizungen AG

Sustainable process heat for the food industry thanks to the latest technology

Emmi Frischprodukte AG and Amstutz Holzenergie AG / Emmen LU / Switzerland

Emmi is the largest milk processor in Switzerland and one of the most innovative premium dairies in Europe.

Full-service provider in the field of wood energy

Amstutz Holzenergie AG was founded in 1987 by Albert Amstutz and has been committed to the efficient use of local wood energy for over 30 years. Its range of services covers the entire spectrum of wood energy: from energy wood production in the forest to the implementation of energy projects to the maintenance of heating systems and the utilization of the resulting wood ash. With its comprehensive range and many years of experience, it offers its broad customer base an all-round carefree package.

“At Emmi, we take care: For more than 100 years, we have been providing our products – from farm to production and delivery - with passion, tradition and craftsmanship. In this way, we create added value and focus on the needs of our employees, society and the environment.”

Emmi AG, Lucerne

Continuous measures to improve the environmental balance sheet

Emmi aims to achieve “netZERO” in terms of greenhouse gas emissions by 2050 at the latest, while at the same time driving forward the circular economy in its operations. Emmi has been working steadily towards this goal since 2005.

Close and structured cooperation

Emmi was the main initiator of the wood-burning steam plant at the time and commissioned its construction. The project was accomplished in cooperation with EWL (Energie Wasser Luzern) and Amstutz Holzenergie AG.

EWL (Energie Wasser Luzern) acted as contractor and was responsible for the implementation of the system. After the contracting period had expired, Emmi took over the system. Amstutz Holzenergie AG is the owner of the building in which the steam plant is located and is responsible for the operation and maintenance of the system.

“The structured collaboration between Emmi, EWL and Amstutz ensured smooth implementation and sustainable operation of the plant.”

Dany Amstutz, Amstutz Holzenergie AG

High-quality milk processing with wood chips

The Moving grate combustion UTSR-3200 from Schmid has now been generating process heat in the form of steam for over 15 years, which is used in Emmi's milk processing. Amstutz uses the waste heat from the grate cooling for space heating and hot water preparation.

The plant utilizes 25 000 m³ | 882 867 ft³ of wood chips from “low-value” wood every year. By continuously feeding wood chips into the combustion chamber, it is possible to burn low-grade and moist wood. Sensors control the feed speed of the grate, enabling the boiler to deliver constant temperatures even in continuous operation.

The retrofitted heat recovery system recovers additional energy from the flue gas, enabling effective use of the waste heat and saving valuable fuel.



We wanted to find out from Amstutz Holzenergie AG how the operation and maintenance of the Schmid furnace over the last 15 years.

A worthwhile investment

“Since commissioning, the Schmid combustion system has proven to be a tried and tested solution. Practically trouble-free, the combustion system is very reliable. The boiler is a quality product from a Swiss company that is known for its excellent workmanship and the durability of its products”

Competent and reliable

“The long-standing collaboration with Schmid has proven to be extremely positive. The robust and reliable products in combination with the comprehensive support have contributed significantly to successful and sustainable energy production.”

Versatile processes

“Working with a Schmid boiler is very versatile. It's exciting to see how the different processes interact and how certain processes can be influenced.”



BRIEF INFO

Product type	Moving grate combustion system UTSR-3200
Control	Pyrotronic
Combustion control	BoB 72 (safety system for steam boilers, no combustion control)
Application area	Steam generation for Emmi Frischprodukte AG
Fuel	Forest wood chips
Fuel requirement	25 000 m ³ 882 867 ft ³
Operating medium	Steam
Capacity	22 000 t steam/year
Silo	300 m ³ 10 594 ft ³
Discharge	Push floor
Flue gas dedusting	Electrostatic precipitator (max. 20mg/Nm ³ fine dust)
CO₂ substitution	4 210 t/year
Heating oil savings	1.6 million l/year 422 675 gal/year
In operation since	June 2009
Owner	Emmi Frischprodukte AG in cooperation with Amstutz Holzenergie AG
Installation site	CH-6032 Emmen LU, Amstutz Holzenergie AG



Emmi Group



Amstutz Holzenergie AG





An innovative heating system with a lot of drive

Froling Energie / Keene NH / USA

At Froling, up to 100 tons of wood chips are sieved, kiln-dried and delivered to customers every day. The processing plant dries wood chips in different sizes and with varying water content. The wood chips are delivered to customers with a moisture content of 25%. This means that even moist wood chips are used instead of being disposed.

Private, municipal and commercial facilities purchase the refined wood chips (Precision Dry Wood Chips) from Froling. Schools, universities, a nursing home, a farm, a library and a prison are heated with between 100 and 25 000 tons of wood chips per year.

Froling is setting a good example by using wood chips for its own energy needs. It uses residues from wood chip production and at the same time demonstrates the advantages of a biomass heating center.

Switching to the biomass cogeneration system has increased energy efficiency by around 25% and reduced peak electricity de-

mand by 80%. In addition to cost savings, environmental factors were also a key factor in the installation of a biomass cogeneration plant.

Keene uses a biomass boiler UTSR-1600 visio from Schmid energy solutions. The plant with a nominal output of 1 600 kW | 5.5 MMBH unit currently delivers 1 000 kW | 3.4 MMBH to generate around 6.3 tons | 14 000 pounds of steam per hour for drying the wood chips.

“With the Schmid boiler, we can use bark residue, oversize, sawdust and other components of the green chips supplied. They do not have to be sorted in advance, dried or distributed elsewhere. This means we don't have to buy fuel and can produce wood chips sustainably.”

Mark Froling is the owner and managing director of Froling Energy and tells us more reasons why he opted for a Schmid combustion system.



“To dry the Precision Dry Wood Chips, we need a reliable and efficient biomass boiler that runs trouble-free 365 days a year and has a high degree of automation with low manpower requirements. The Schmid boiler is not only well thought out, it also has a constant output with low emissions. Different fuels are no problem for this combustion system. The Schmid boiler meets all our desired parameters and proves to be very efficient.”

The Schmid UTSR-1600 visio (5.5 MMBtu boiler) operates a high-pressure steam turbine that generates 100 kW of electricity for the plant. The buildings on the 28 000 m² | 300 000 ft² site are also supplied with heat. The peak load is covered by a reserve boiler, which is only used for the heating portion. The drying plant runs 24/5 to 24/7 from September to May. The plant is in continuous operation for around one month of this period.

BRIEF INFO

Product type	Moving grate combustion system UTSR-1600
Control	PersonalTouch visio with remote access
Application area	Operating turbines for drying plant and heating of buildings
Fuel	Forest wood chips
Capacity	1 600 kW 5.5 MMBH
Silo	200 m ³ 7 063 ft ³
Discharge	Moving floor
Flue gas dedusting	Multicyclone
In operation since	2022
Owner	Froling Energy HQ
Installation site	Keene, New Hampshire, USA
Project planning	Froling Energy
Installation	Froling Energy / Schmid energy solutions



“Initially, the high level of automation and control processes were unfamiliar. However, with the great support of the Schmid team, we were able to operate the system without any problems or further support after a short time.”

“We have tried to make our system as sustainable as possible. If manufacturers set an example of sustainability, customers will follow suit.”

Mark Froling, Managing Director of Froling Energy



One step closer to the environmental vision with biomass

Suntory Products Ltd. / Shinano, Prefecture Nagano / Japan

It was the year 1899 when Suntory began producing and selling wine in Osaka. Today, 270 companies belong to the group: 88 in Europe, 62 in Asia/Oceania, 68 in Japan and 52 in America.

The diverse product portfolio includes brewed teas, bottled water, carbonated soft drinks, ready-to-drink coffee and energy drinks as well as high-quality spirits, beer and wine.

Environmental vision until 2050

The Suntory Group is aiming for net-zero greenhouse gas emissions across the entire value chain by 2050. Therefore, since March 2022, the existing gas boilers that generate steam for washing and disinfecting bottles have been supported by a biomass steam boiler.

The UTSR-1200 visio from Schmid provides constant and low-emission combustion, generating one ton of steam per hour. Switching to biomass is also interesting because of the high price of propane gas. Suntory can save about 5 million yen per year (about € 30 000 | \$ 31 200 per year).

Experienced partner for energy from biomass

Tomoe Shokai Co., Ltd. from Tokyo is a boiler manufacturer with over 110 years of history. They have been selling biomass boilers for many years and are a long-standing partner of Schmid energy solutions. Based on its experience with Tomoe Shokai's reference systems, Suntory decided in favor of a steam center powered by biomass.

BRIEF INFO

Product type	Moving grate combustion system UTSR-1200 with steam boiler from Tomoe Shokai
Control	PersonalTouch visio
Application area	1 t/h steam for sterilization and washing of bottles
Fuel	P45S wood chips
Fuel requirement	455 kg / h 1 003 lbs / hr
Operating medium	Steam
Capacity	1 200 kW 4.1 MMBH
Silo	Pre-silo for controlling the fuel supply
Flue gas dedusting	Multicyclone
In operation since	June 2022
Owner	Suntory Products Ltd.
Installation site	Shinano, Prefecture Nagano, Japan
Project planning	Tomoe Shokai Co., Ltd., Tokio, Japan



The system excels

From a technical point of view in particular, Schmid's combustion system is one of the most flexible and technically advanced systems. This is of great importance for the further development of the Suntory plant. Tomoe also appreciates the possibility of special solutions such as this system. In this way, the steam center with the Schmid combustion system and the Tomoe heat exchanger could be perfectly implemented in the Suntory plant and adapted to the needs of production. Due to the rapidly increasing steam demand, which is common in food production, the operation of the plant must always be carefully planned, especially because of the use of biomass.

Trusting collaboration

"We appreciate the regular exchange of information with Schmid and the quick response to technical questions. This means we are always in a position to serve our customers courteously and competently. We receive the current parameters from the after-sales team to optimize combustion. Our collaboration has become very trusting and friendly."
Toshihito Okamoto, Adviser, Tomoe Shokai Co., Ltd.

Belvedere Vodka – a symbol of Polish craftsmanship and purity

Polmos Żyrardów Sp. z o.o. / Żyrardów / Poland

Belvedere Vodka, named after the historic Belvedere Palace in Warsaw, has stood for unparalleled quality and craftsmanship since its inception. Made in Poland from the finest Dankowskie Gold rye, the vodka undergoes an elaborate distillation process that ensures its exceptional purity and distinctive taste.

Each bottle embodies the rich and ancient tradition of Polish vodka production. Belvedere Vodka is produced without additives, with pure spring water and carefully selected ingredients, making it one of the purest and most sophisticated vodkas in the world. This dedication to quality and authenticity has secured Belvedere a firm place in the premium segment and makes it the preferred choice for connoisseurs around the world.

Groundbreaking steps towards climate neutrality

On September 9, 2021, in Poland, Polmos Żyrardów ceremoniously unveiled its biomass boiler house at the Belvedere distillery, known as the producer of the world's first super premium vodka. This project underlines Belvedere's commitment to environmental protection and future-oriented energy production.

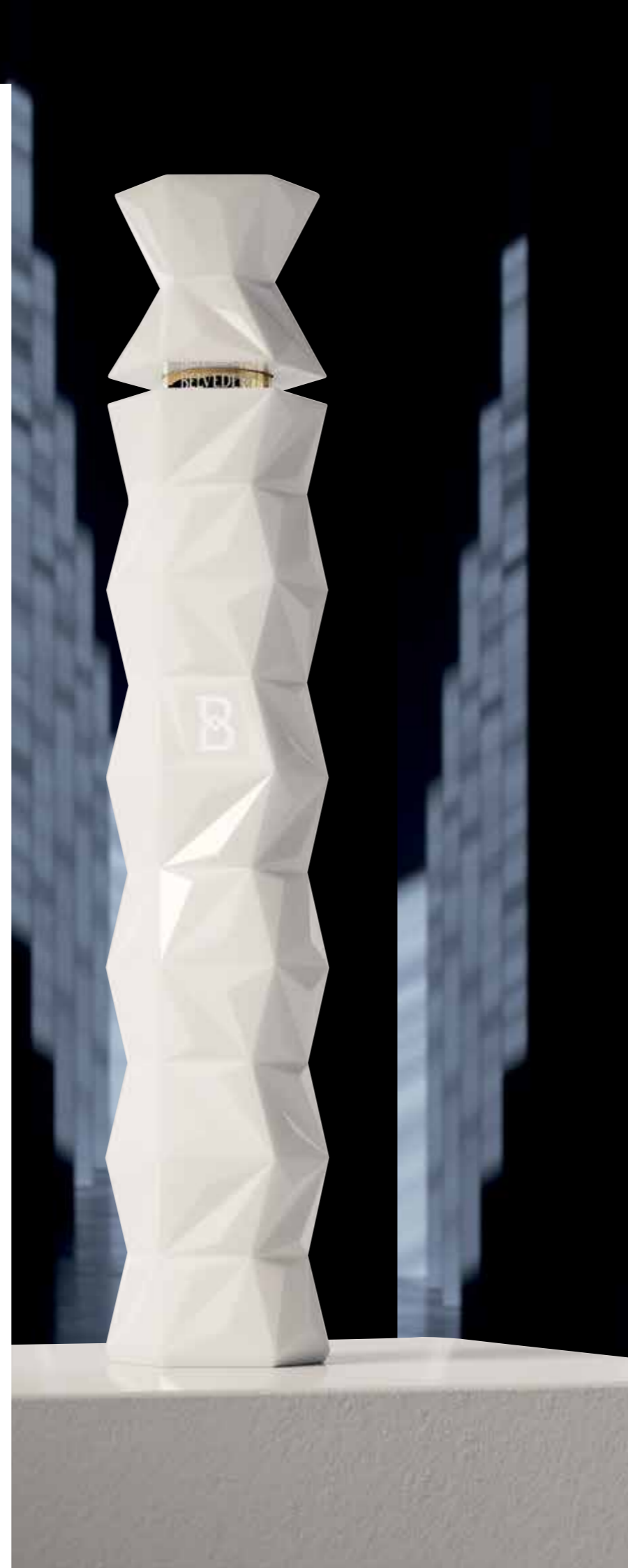
Belvedere was the first distillery to receive a grant from the National Center for Research and Development for scientific research and development in the energy sector.

The heart of the boiler house is the Schmid biomass combustion system. The Schmid technology, combined with highly efficient power generation equipment and heat recovery from exhaust gases, forms an innovative combined heat and power system that powers Belvedere Vodka's production processes.

This system enables the company to cover 100% of its heat and electricity requirements from green sources. It is also possible to feed surplus energy into the public power grid, which contributes to the company's energy self-sufficiency and climate neutrality.

Thanks to the new plant, Polmos Żyrardów Sp.z o.o. was able to reduce its carbon dioxide emissions by an impressive 97% in 2022 and 2023 compared to 2019. This represents significant progress towards climate-neutral production and shows that Belvedere is aware of its responsibility to protect our environment.

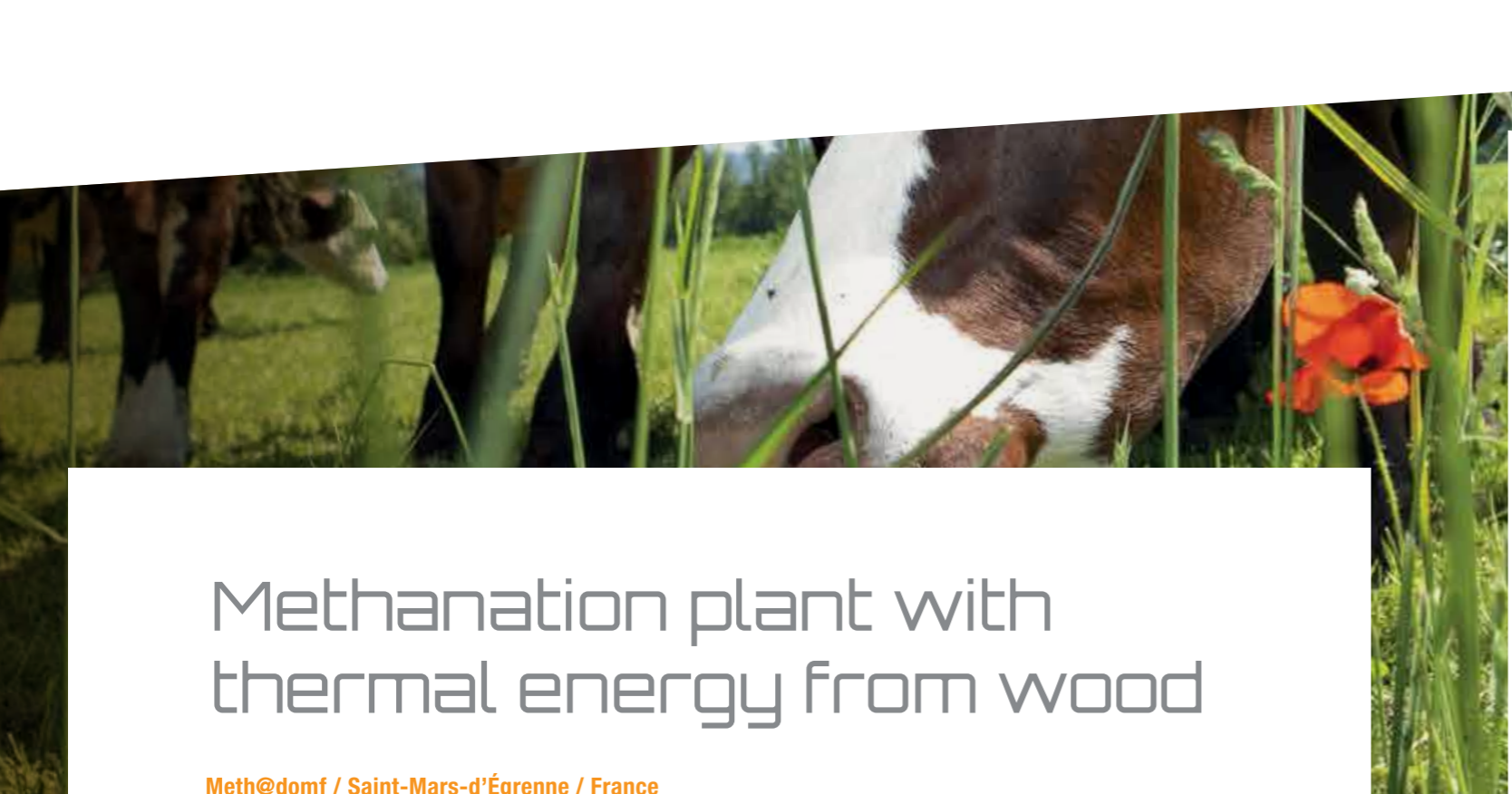
The introduction of the biomass boiler plant is an example of how companies can put their production on a more climate-friendly basis without sacrificing quality and efficiency.



BRIEF INFO

Product type	Moving grate combustion system UTSR-3800
Control	PersonalTouch visio with remote access
Application area	Process heat and electrical energy
Operating medium	Hot steam (19 bar[g], 212.4 °C 275 psi, 414 °F)
Fuel	Forest wood chips
Capacity	3 600 kW 5.5 MMBH
Capacity (electr.)	180 kW
Silo	180 m³ 6 357 ft³
Discharge	Moving floor
Flue gas dedusting	Multicyclone/electrostatic precipitator
In operation since	March 2021
Owner	Polmos Żyrardów Sp. z o.o.
Installation site	Polmos Żyrardów Sp. z o.o., Żyrardów, Polen





Methanation plant with thermal energy from wood

Meth@domf / Saint-Mars-d'Égrenne / France

Meth@domf produces and markets energy from biomass through agricultural methanation. Agricultural waste consisting of around 95% liquid manure supplied by thirteen regional farms is utilized.

Energy &+, a partner of Schmid energy solutions, was commissioned to install this huge methanation plant by Meth@domf. The project was accompanied by Energy &+ from design to planning, construction and commissioning.

Energy from manure - hygienization with wood chips
Before fermentation residues leave the methanation process, they must be 100% hygienized. The residues are heated to 70 °C | 158 °F for an hour using process heat. This requires process heat, which is provided by a Schmid biomass combustion.

Although the decision to use biomass combustion is an obvious one, propane gas was initially considered. However, Energy &+ was able to show that the profitability of a biomass combustion is significantly higher, especially because there is sufficient landscape and forestry wood available on the surrounding farms. In addition, the CO₂ savings are estimated at around 280 tons per year, which is in line with the purpose of the entire project.

Tight schedule – construction of the heating plant in record time
Construction work on the heating plant for the hygienization process began in July 2022. The UTSR-550 visio from Schmid with a capacity of 550 kW | 1.9 MMBH was put into operation in October 2023. The Schmid combustion system is supported by a 350 kW | 1.2 MMBH biogas boiler.

Thanks to the fast turnaround times of Schmid energy solutions and the prefabrication of Energy &+, which was created off-site, the system for Meth@domf was delivered in a record time of 48 hours.

"We opted for a Schmid moving grate combustion system, because it is designed for different fuel moistures and especially for landscape conservation wood. The boiler perfectly matches the DNA of the project: reliable, versatile and robust," explains Pierre Doreau, Business Development Manager, Energy &+.

"To keep the methanation process running all year round, you need a reliable, high-quality system that heats the hygienization process without interruption. "The systems of our partner Schmid energy solutions are characterized by precisely these properties", Pierre Doreau continues.

Partnership-based cooperation
"This project is the result of good cooperation. Laurent Koehl, our contact person at Schmid, and Claude Koegl, the commissioning engineer, have enabled us to implement a high-performance project and cover all customer needs." Marine Baudu, Business Manager, Energy &+

Energy &+ – a strong partner
Energy &+ is based in Brittany (western France) and has been an official partner of Schmid energy solutions for over three years. The subsidiary of Charwood Energy Group offers customized and turnkey solutions for the conversion of biomass into low-carbon energy. Energy &+ specializes in biomass heating systems, methanation and sanitization as well as gasification.

"Schmid gives us access to reliable, recognized technology that guarantees high performance. For many years, we have appreciated the quality standards and courteous partnership, and we share the same human values. We are working to ensure that our joint concept becomes the standard solution in France."
Pierre Doreau, Business Development Manager, Energy &+



BRIEF INFO

Product type	Moving grate combustion system UTSR-550
Control	PersonalTouch visio
Application area	Sanitization and drying, 1.5GWh per year
Fuel	Forest wood chips
Fuel requirements	20 m ³ / day 706 ft ³ / day
Operating medium	hot water
Capacity	550 kW 1.8 MMBH
Silo	43 m ³ 1 519 ft ³
Discharge	Vibration plate
Flue gas dedusting	Electrostatic precipitator from APF
CO₂ substitution	280 t CO ₂ /year
In operation since	November 2023
Owner	Meth@domf, Saint-Mars-d'Égrenne
Installation site	FR-61350 Saint-Mars-d'Égrenne
Project planning	Energy &+, Saint-Nolff
Installation	Energy &+, Saint-Nolff

Wood packaging becomes heat

KSB SE & Co. KGaA / Frankenthal / Germany

Pump manufacturer KSB is investing in a new heating plant and using the wood packaging material to generate heat energy.

Pumps and valves from KSB SE & Co. KGaA can be found in various power plants around the globe. Boiler pumps, condensate pumps and cooling water pumps are also used in biomass heating plants.

The foundation stone of KSB was laid in 1871 with the design of a boiler feed machine, a device that collects steam from steam engines, condenses it and lets it flow back into the boiler as water. This made it possible to circulate the process water. The company then, as now, is concerned with the efficient use of resources. The pump manufacturer therefore invests a lot in sustainability. The headquarters and production site in Frankenthal therefore invested in a new heating plant.

Wood for heating and process heat - investment for the future

KSB invested €122 | \$128 million in sustainability, capacity expansion, digitalization and production improvements last year. Daniel Geiger is KSB's energy officer. He implements the projects for a sustainable energy supply with great care and passion and also planned the new heating plant.

In order to be able to react flexibly to annual and daily cycles with fluctuating heat demand, heat generation is distributed across four boilers. The two Schmid combustion systems with a nominal capacity of 700 kW and 1 200 kW | 2.4 MMBH and 4.1 MMBH can be modulated in the range of 30 to 100 %. The two wood combustion systems are supported by two gas boilers, each with 4 MW | 13.6 MMBH, and two buffer storage tanks with a total storage volume of 56 000 liters | 14 794 gallons.

Both wood boilers supply the air conditioning technology in the company, the production and office areas, the hot water supply and the process heat for production, such as the painting systems. The drying systems, which are still gas-fired, will be converted in the near future and also connected to the biomass heating system.

Metal company works with wood energy

"It may come as a surprise that a metalworking company like ours has opted for wood as its main source of energy. Wood is a huge issue for us," assures Dirk Dehmelt, head of the metalworking shop/boiler house.



Many pumps are custom-made products that are transported in custom-made wooden packaging. This results in wood waste. In addition, there is disposable packaging from supplier parts or pumps that are delivered to the factory for inspection. This results in a considerable amount of untreated and dry waste wood. Without using it ourselves, this fuel would have to be transported away and disposed at a cost. It is therefore obvious that this material should continue to be used on site.

Multi-talented for the future

The wood combustion systems and the silo were designed in such a way that KSB could also obtain fuel from forest and landscape conservation wood with a higher moisture content than the residual wood, if required.

"In addition to the demanding and different fuels, well thought-out logistics, the current legal emissions regulations, the ongoing operating costs and a sustainable service concept were also part of our requirements profile. After a lengthy planning and tendering process and visits to reference systems, we opted for the mature and stable technology from Schmid energy solutions."

Daniel Geiger, Energy Officer, KSB



BRIEF INFO

Product type	Moving grate combustion system UTSR-1200 and UTSR-700
Control	PersonalTouch visio with remote access and remote maintenance
Application area	Process heat and electrical energy
Fuel	Wood waste
Fuel requirement	approx. 6 260 m ³ /year 221 070 ft ³ /year
Operating medium	warm water (105 °C / 10 bar 221 °F / 145 psi)
Capacity	1 200 kW and 700 kW 4.1 MMBH and 2.4 MMBH
Silo	520 m ³ 18 364 ft ³ / 7 – 8 days range at full load operation
Discharge	Hydraulic push floor, driveable
Flue gas dedusting	Multicyclone / electrostatic precipitator
CO₂ substitution	approx. 900 t/year
Heating oil savings	approx. 447 000 l/year 118 084 gal/year
In operation since	October 2023
Owner	KSB SE & Co. KGaA
Installation site	DE-67227 Frankenthal
Project planning	Diringer & Scheidel GmbH, DE-68199 Mannheim
Installation	Helmut Herbert GmbH & Co. KG, DE-64625 Bensheim





Storm “Vaia” as impulse for innovative wood processing

Legno Valsugana S.r.l. / Scurelle Trentino / Italy

The storm "Vaia" gave the starting signal for the founding of Legno Valsugana S.r.l., when the storm swept across northern Italy in October 2018. In the Trentino region alone, an estimated 18 000 hectares of forest were destroyed. From an ecological point of view, undoubtedly a catastrophe. For Società Agricola Bernardi S.r.l., Forest PEG S.r.l. and Cippolegno S.r.l. it was the driving force to re-evaluate the wood resources and rethink the processing of the valuable raw material.

The three companies are experienced timber and forestry businesses. In June 2020, they founded the Consorzio Stabile Legno Valsugana. Their goal: to recycle wood that would otherwise be considered inferior or waste and create products.

Upgrading wood waste

Legno Valsugana S.r.l. has managed to upgrade the production and supply chain in a smart and conscientious way. Among other things, Legno Valsugana S.r.l. has invested in a debarking plant and a sawmill for logs with a diameter of less than 25 cm | 9-13/16". This makes it possible to process wood that would otherwise be considered waste.

The pellet production plant was put into operation at the end of 2023. All waste from the various sawmill processes and from forest maintenance is processed into high-quality wood pellets.

Biomass boiler system operates pellet production

The pellets are dried with process heat from a Schmid biomass combustion system.

The UTSR-2000 visio moving grate combustion system with an output of 2 000 kW | 6.8 MMBH is the perfect solution for the combustion of different biomass such as wood chips, bark, wood waste, pellets and special fuels. Thanks to the feed rate, the robust combustion system can also burn different fuel moistures with an efficient degree of efficiency and enable optimum operation.

The advanced combustion technology of the UTSR-2000 visio and the ultra-modern electrostatic precipitator from Meisterfilter ensure exceptionally good emission values. The system can also be optimized remotely online via smartphone, tablet or PC using the PersonalTouch visio control system developed by Schmid energy solutions.



BRIEF INFO

Product type	Moving grate combustion system UTSR-2000
Control	PersonalTouch visio
Application area	Hot water for pellet production
Fuel	Industrial waste wood from sawmill for fuel production
Capacity	2 000 kW 6.8 MMBH
Silo	6,8 m × 10 m × 3,5 m = 238 m ³ 22.3 ft × 32.8 ft × 11.5 ft = 8 405 ft ³
Discharge	HFED direct slide valve
Flue gas dedusting	Meister filter
In operation since	2023
Owner	Viessmann Engineering S.r.l. / Legno Valsugana S.r.l.
Installation site	IT-38050 Scurelle
Installation	HOLLÄNDER S.r.l., Levico Terme (TN), and Viessmann IT



Real experiences – impressive nature – quiet luxury

5-star Hotel Krallerhof / Leogang / Austria

All this can be found at the Hotel Krallerhof. For four generations, the talents and values of the Altenberger family have flowed into the luxury hotel, making it an exceptional and unique place.

Respect and sustainability

For the Altenberger family, sustainability for the protection and preservation of nature is neither a job nor a mission - but a need. The topic of sustainability has always been a high priority and is always a focus when making decisions about new investments. For example, the hotel covers almost half of its electricity requirements with photovoltaic systems. In addition to energy from air heat pumps, waste heat from refrigeration production is also used to heat the pools. If the energy generated in this way is not sufficient to heat the water areas, the Krallerhof has been using wood briquettes from the timber construction company just 200 meters away for almost 20 years, which supplies them directly to the hotel's biomass plant.

With the construction of another biomass plant by Schmid, the hosts are proud to be almost energy self-sufficient. The installed system is environmentally friendly thanks to a 10-meter-high | 33-foot-long electrostatic precipitator that electrically charges and efficiently filters out fine particles.

The wood shavings required for the combined heat and power plant are compacted and delivered from the neighboring sawmill. This means short routes, which in turn means minimal environmental impact. Supporting regional cycles, promoting biodiversity, planting 800 trees on the hotel grounds and a spa whose building only needs to be heated for a total of three months are just a small part of the commitment.

Energy supply with wood

With the Schmid biomass boiler, which will be put into operation in November 2023, the "Krallerhof" ensures the energy supply for the ATMOSPHERE spa, including the 50-meter-long | 164-foot-long infinity pool and the existing Refuge wellness area, the 124 hotel rooms, the separate Kralleralm restaurant, four staff houses

and two private houses - a total of around 30 000 m² | 322 917 ft² of heated space.

Needs of the hotel business

The UTSR-2000 visio moving grate combustion system was easily integrated into the existing central heating system and adapts perfectly to the individual needs and the varying fuel. Thanks to the modern control interface and remote access, the system can be easily operated and optimized from anywhere.

The implementation of this project was a particular challenge due to the time pressure. The scheduling coordination of all trades and the installation had to be closely timed to ensure that the booked hotel was ready for the start of the winter season.

"We really appreciated the good communication and competent support during the implementation of the additional heating system." Family Altenberger, Hotel Krallerhof



BRIEF INFO

Product type	Moving grate combustion system UTSR-2000
Control	PersonalTouch visio with remote access
Application area	Hot water preparation for heating
Fuel	Residual wood from sawmill, bark, sawdust, wood chips
Operating medium	Hot water
Capacity	1 800 kW 6.1 MMBH
Silo	182 m ³ 6 427 ft ³
Discharge	Moving floor
Flue gas dedusting	Multicyclone/electrostatic precipitator
In operation since	November 2023
Owner	Altenberger GmbH, Leogang, Austria
Installation site	AT-5771 Leogang, Hotel Krallerhof

Sustainable heat in horticulture

Häussermann Perennials + Woody plants / Möglingen / Germany

Häussermann perennials and woody plants produces around 4 million perennials, herbs and grasses every year on 14 hectares of land, including 3 hectares of greenhouses. The extensive range of woody plants is grown on a further 35 hectares. New varieties and species are constantly being tested in order to adapt the range to current trends and climatic conditions. These are propagated in heated greenhouses, grown and potted for rooting and then transferred to the open field.

Modernization for sustainability and self-sufficiency

Häussermann has been working with a closed water cycle for 25 years, which is now fed by three storage ponds with around 40 000 m³ | 1 412 587 ft³ of water. Reusability and recycling are also taken into account when using plastics. Defective old material is taken back, processed into granulate on site and supplied to a regional pot manufacturer. Internal transportation is carried out exclusively with electric vehicles of all kinds - from electric bicycles to electric tractors.

“Not only for reasons of environmental protection, but also from a financial perspective, it is essential in the long term to make expensive investments in sustainable and environmentally friendly processes first”, says Martin Häussermann, senior director of the company.

“It is important to become as independent as possible from uncontrollable but indispensable production factors, such as the availability of water, electrical energy and the fossil fuels previously used for fuel and heating, and to strive for a high degree of self-sufficiency.”

Modernization of the heat supply

The biggest step towards sustainability was the modernization of the heating plant. Two anthracite coal boilers were replaced with an 850 kW | 2.9 MMBTU biomass combustion system from Schmid. The existing heating oil boiler could be reused as a back-up. Only a few minor adjustments were necessary to the existing structure of the central heating system.

When selecting the boiler and the conveyor technology, it was important to use a wide range of fuels. The moving grate combustion system from Schmid enables the utilization of waste from hedge and maintenance trimmings in the production of forestry wood, as well as the flexible purchase of fuels with different moisture levels.

Fluctuations in the daily heat requirement are balanced out by a buffer heat storage tank of 400 000 liters | 105 669 gallons. A flue gas condensing system increases efficiency and reduces fuel consumption by recovering heat from the exhaust flue.

With the PersonalTouch visio control unit, the operator can also control and optimize the boiler remotely. In Schmid's optional remote maintenance package, the system's operating data can also be evaluated and trends generated and made available to the customer on a regular basis.

“With the new wood combustion system, we have ended the fossil age and closed another cycle of sensible use of waste wood and wood from landscape conservation. We have replaced 300 tons of coal, which is in line with our sustainability strategy and has a positive impact on our energy costs. Thanks to Schmid's efficient heating boiler, the downstream electrostatic precipitator and the flue gas condensation system, we have almost no dust emissions and maximum energy utilization. More is not possible!” Christian Häussermann, Member of the Executive Board

“We greatly appreciate the competent assistance during the project planning phase and the support from the Schmid team when applying for funding, as well as the critical and constructive exchange during the implementation phase. An important advantage of Schmid energy solutions is that we can count on fast support during operation.”



BRIEF INFO

Product type	Moving grate combustion system UTSR-1200
Control	PersonalTouch visio with remote access and remote maintenance
Application area	Heating greenhouses, store and office
Operating medium	Hot water
Capacity	850 kW 2.9 MMBH
Fuel	Forest wood chips and landscape wood
Discharge	Drive-on push floors
Silo	180 m ³ 1 938 ft ² / 6 – 7 days range at full load operation
Flue gas dedusting	Multicyclone/electrostatic precipitator
Hard coal savings	300 t / year
In operation since	October 2023
Owner	Häussermann Stauden + Gehölze GmbH
Installation site	DE-71696 Möglingen
Project planning	Projektmanagement Mönch, DE-70374 Stuttgart
Installation	Hans van Bebber GmbH & Co. KG, DE-47638 Straelen

Sawmill with tradition, innovation and sustainability

Aecherli Holz / Regensdorf ZH / Switzerland

Once ridiculed - now systemically relevant for Regensdorf

Paul Aecherli had the idea of using waste wood sustainably and wanted to try something new. In Hans-Jürg Schmid, he found a partner who was just as interested in renewable energy and district heating as he was. Aecherli's district heating network was already being supplied by two Schmid boilers, with an output of 1 800 kW | 6.1 MMBTU each. For Schmid, the size of the boilers was not yet standard at that time. Accordingly, the project was a challenge that Hans-Jürg Schmid took on with great pleasure.

The size of the wood chip silo was also larger at 2 000 m³ | 70 629 ft³, which is still proving its worth today. Fresh wood chips can be dried in this way to achieve a better calorific value.

Over the years, P. Aecherli AG has been able to convince other customers to purchase district heating. The capacity had to be increased already in 2015. A 1 800 kW | 6.1 MMBTU boiler was replaced with a UTSR-2400 Schmid combustion system. Today, it is impossible to imagine Regensdorf's energy supply without the district heating center. In November 2023, another Schmid boiler, a UTSR-4600 visio, was commissioned.

Why was Schmid chosen again? *"The choice of efficient, reliable and robust boilers on the market is small, Schmid's services are great and our experience has always been very good. So it was clear to us that we would use a Schmid boiler again"*, Celine Hartmann-Aecherli tells us.

A mammoth project during ongoing operation and thanks to 30 years of successful experience

In addition to planning and financing the new boiler room, maintaining and developing the sawmill operations during the retrofit was a major challenge. Thanks to the many years of collaboration between Aecherli, Schmid and planning engineer Roger Balmer, many hurdles were overcome and the plant was put into operation on schedule.

"Paul Aecherli is a 'doer' and lives for his projects. Those around him can sense this in his direct words and everyone knows what's going on. The family fondue party, where all trades are welcome, is never missing, and Paul's humor is also omnipresent. I really appreciate working with Paul Aecherli. We always knew exactly what we were talking about. Thank you for the always friendly and unforgettable collaboration." Stefan Neff, Team Leader After Sales Field Service

For more than 50 years and over three generations, Aecherli Holz has grown into a modern family business and offers a wide range of products and services related to wood. For a good 30 years, Aecherli Holz has also had a wood heating plant on its premises, which supplies the sawmill and the self-built district heating network in Regensdorf with heat.

"Wood is a renewable raw material that takes time. This makes a sustainable use of wood and nature all the more important. We offer various wood processing services and have a lot of bark and waste wood from the sawmill. It makes sense to use this 'waste' for heat instead of having it transported away by truck. This is expensive and does little for the environment. With the wood chip heating system, we have made optimum use of our waste wood for CO₂-neutral energy generation." Celine Hartmann-Aecherli, Owner and Managing Director, P. Aecherli AG

Storage shed becomes a district heating center

In 1994, the world still had to be won over to the idea of district heating from wood. Paul Aecherli, on the other hand, had long been fascinated by this possibility, and the wooden storage shed on the Aecherli site was converted into a district heating plant.



BRIEF INFO

Product type	Moving grate combustion system UTSR-4600
Control	PersonalTouch visio
Combustion control	Revolution adaptive with remote access
Fuel	Waste wood and forestry wood
Fuel requirement	180 t
Capacity	4 600 kW 15.7 MMBTU (with existing boilers a total of 8 800kW 30.0 MMBTU)
Discharge and silo	Loading and unloading conveyor, with moving floor
Flue gas dedusting	Multicyclone / dry electrostatic precipitator from IS SaveEnergy
In operation since	October 2023
Owner	P. Aecherli Fernwärme AG
Installation site	CH-8105 Regensdorf ZH
Project planning	Roger Balmer, pem-gmbh

The town of Nováky replaces coal with wood

Stadt Nováky / Nováky-Laskár / Slovakia

KOOR, s.r.o. is a private Slovakian company that has been providing energy services since 2010 and, as a contractor, focuses on turnkey and sustainable energy systems. It installs modern heating systems from renewable energy, renovates old boiler rooms or develops new heat sources. Services for saving energy in buildings and increasing the efficiency of heating systems round off its offering.

Sustainable district heating

The town of Nováky relies on sustainable energy from biomass and has commissioned Prievidzské tepelné hospodárstvo, a.s. (PTH) as operator of the district heating network, to convert the coal-fired heating system to biomass combustion. The experienced company KOOR, which specializes in biomass plants, was hired to implement this project.

The system excelled

Schmid energy solutions was able to offer individual solutions for fuel supply, ash removal systems, exhaust gas purification, heat storage and efficiency improvement during the tender process.

Sophisticated system planning - efficient heating network

The total output of the two UTSR-3200 visio is 6 400 kW | 21.8 MMBTU. The flue gas condensing plant currently supplies an additional 850 kW | 2.9 MMBTU. If the boilers are in full load operation and the network return temperature is less than 45 °C | 113 °F, the condensing plant could supply 1 640 kW | 5.6 MMBTU.

With the installed heat storage tank with a volume of 100 m³ | 3 531 ft³, the heat supply increases by approximately 3 400 kW | 11.6 MMBTU. This means that the heating plant is able to achieve a higher load than nominal during the morning peak. The Nováky-Laskár district heating network has a capacity of 430 m³ | 15 185 ft³, measures 4 km | 2.49 mi to the main customer, and the annual heat requirement is 17 000 MW/h | 58 004 MMBTU.

Savings

At the moment, only an estimate of the savings is possible. Comparing the previous operation would be misleading. With Schmid's biomass boiler solution, lower emissions such as dust, NO_x, x and CO are achieved and CO₂ neutrality is reached. In addition, the operator saves fuel with this overall system.

BRIEF INFO

Product typ	2 Moving grate combustion systems UTSR-3200 visio
Control	PersonalTouch visio
Combustion control	Revolution adaptive
Application area	District heating
Fuel	Wood chips (M50, P100)
Fuel requirement	12 000 t/h
Operating medium	Hot water
Capacity	2× 3 200 kW 10.9 MMBTU
Silo	2× 100 m ³ 3 513 ft ³
Discharge	2× moving floors 2× hydraulic pusher HFED
Flue gas dedusting	Flue gas condensation system with wet integrated electrostatic precipitator approx. 6 800 t/year
CO₂ substitution	approx. 5 320 t/year
Lignite savings	November 2023
In operation since	KOOR, s.r.o. (end customer PTH Prievidza)
Owner	SVK-972 71 Nováky-Laskár
Installation site	2022 – ISENG-MONT, s.r.o., Levice
Project planning	2023 – ISENG-MONT, s.r.o., Levice
Installation	

The UTSR-3200 visio moving grate combustion system is technically perfectly equipped. Thanks to the PersonalTouch visio control system and the newly developed Revolution adaptive combustion control system, automatic operation with consistently high efficiency is possible. Sensors that measure the moisture content, oxygen supply etc., deliver the measured data to the adaptive control system, which automatically regulates the combustion parameters.

“Operating the Schmid heating plant is easy because the control system with Revolution adaptive makes most of the operating settings automatically, and without human intervention.” Ján Sadlek, CTO, KOOR, s.r.o.

“Schmid has supported us enormously in energy development and in particular, technologically. We had access to the necessary information about the scope of the effort and technical parameters at all times. This enabled us to understand the processes of the new technologies and to serve our customers competently.” Ján Sadlek, CTO, KOOR, s.r.o.



Innovative heating system for individual products

Nyfeler Holzwaren AG / Gondiswil BE / Switzerland

“We rely on a robust, long-lasting solution that the next generation will also enjoy.”

Remo Nyfeler, Managing Director, Nyfeler Holzwaren AG



The business history of Nyfeler Holzwaren AG reads like a fairy tale and is a true success story. What began on a small scale in 1937 with the manufacture of wooden rakes has developed into a precision toy manufacturer with worldwide demand. The children's toys and wooden products are made exclusively from untreated, local wood. The individual wooden elements are manufactured to an accuracy of a hundredth of a millimeter. To achieve this precision, it is necessary that the entire production process - from storage and drying to cutting, CNC milling and packaging - remains under our own control. This means that 98% of the necessary work steps come from our own production. This makes Nyfeler Holzwaren AG a unique specialist in its field.

Individual solutions make the company extremely efficient
Remo Nyfeler's business is structured accordingly: There is nothing standardized. Patent-worthy in-house solutions can be found in the workshop, during the production of the briquettes and even during the feeding into the combustion chamber of the UTSD.

What kind of fuel is used?

The toys are mainly made from high-quality, very dry beech wood. Even the slightest irregularities in the wood are sorted out. This high standard means that a lot of “waste wood” is produced from the round wood of a beech tree. But what appears to be waste to some is valuable fuel to others.

What problems did we have to overcome?

The old wood heating system had to be replaced due to the Air Pollution Control Ordinance because it no longer met today's standards. The special requirements for the existing briquettes presented many heating suppliers with insurmountable challenges, but not all of them. The Schmid company was able to develop a unique solution together with us. This was the decisive reason for the collaboration.

What was installed?

On November 14, 2023, the old heating system was successfully replaced by the new UTSD-240/200 combustion system. Three storage tanks, each with a capacity of 2,852 liters, were installed in the heating room. At Remo Nyfeler's request, an industrial moving floor discharge system was installed.

What is heated with the system?

The UTSD-240/200 is used to heat the three-generation house with an outdoor pool, the old and new workshop and a drying chamber. The wood residues and shavings from production are sufficient to operate the heating system all year round. Some briquettes can even be sold as fuel.

What tips would you give your colleagues in the industry?

In collaboration with the architect and the Schmid company, we were able to apply for and obtain subsidies. There are a few pitfalls to watch out for, especially with subsidies, which are essential for winning the contract. Approach your specialist before the work is carried out and clarify what needs to be implemented and how so that the subsidies can be obtained.

BRIEF INFO

Product type	UTSD-240/200
Control	Automatic Control 3, moving floor control, extension board AM 3
Application area	Heat and hot water for workshop, drying chamber, house and pool
Fuel	Residual wood from wood processing
Operating medium	Water
Capacity	200 kW
Silo	Push-floor discharge with feeder screws
Flue gas dedusting	e-clean
In operation since	November 2023
Owner	Nyfeler Holzwaren AG
Installation site	CH-4955 Gondiswil BE
Project planning	Lüscher Egli AG, grad. Architects ETH FH SIA, CH-4900 Langenthal
Installation	Kleeb Kurt, Sanitäre- u. Heizungsinstallation, CH-4955 Gondiswil BE

Heating system with a future

Multi-purpose facility / Schwellbrunn AR / Switzerland



Renovated in 2023, the ultra-modern multi-purpose facility offers a variety of facilities tailored to a wide range of needs. A standard-sized gymnasium can accommodate up to 560 people and is perfect for sporting events, tournaments and large gatherings. The stage can accommodate up to 50 people and is ideal for performances, presentations and conferences. The multi-purpose room, equipped with an integrated climbing wall, is ideal for small group sports activities, such as floor hockey, and can accommodate up to 300 people. A modern club room offers space for up to 100 people, ideal for smaller meetings, seminars or private events. And the modern kitchen leaves nothing to be desired when it comes to fulfilling culinary wishes.

The modernization of the heating system in the multi-purpose building in Schwellbrunn, Appenzell Ausserrhoden, is a prime example of the successful implementation of an ecological, bivalent heating solution. The project involved the complete renewal of the existing heat generation system, whereby a pioneering combination of an air-to-water heat pump for summer operation and an efficient wood chip heating system for winter operation was installed.

What was implemented?

As part of the modernization, the existing wood chip heating system was replaced to make room for a new, sustainable heating system. The existing wood chip silo and part of the discharge system will continue to be used, which has minimized costs and effort. The new heating system includes two air-water heat pumps that heat the water heater for hot water in summer and also provide heating in the transition period. In the cold winter months, a powerful UTSD wood chip heating system takes over the heat supply. This combination enables energy-efficient and environmentally friendly heating of the buildings.

Heated areas

The new heating system supplies the multi-purpose building. The adjacent school building is also connected via a long-distance pipeline. This solution ensures a reliable and consistent heat supply to both buildings.

Why Schmid?

Schmid AG energy solutions was able to prevail against numerous competitors in the tender. The decisive factor was an attractive overall offer. It is very important to mention our competent and fast 24/7 service, which enables us to reduce downtime to a minimum. We are proud to have successfully completed the heating modernization in Schwellbrunn and to be able to ensure a comfortably warm sports and cultural paradise for many children and clubs.

Conclusion

With the new, bivalent heating solution, not only were the heating costs optimized at the multi-purpose facility in Schwellbrunn, but an important contribution was also made to environmental protection. The combination of environmentally friendly heat pump technology and efficient wood chip heating guarantees a reliable, year-round heat supply.

BRIEF INFO

Product type	Wood chip combustion system UTSD-240/160 / LI 25 air-to-water heat pump
Application area	Heat and hot water
Capacity	UTSD 160 kW / LI 2x 27.3 kW
In operation since	2022
Owner	Municipality of Schwellbrunn
Installation site	CH-9103 Schwellbrunn, sports hall (boiler room in the building)
Installation	Die Klimamacher AG, CH-9320 Arbon

Idyllic and comfortably warm

The Aubert family / Niederbüren SG / Switzerland



The Aubert family's farmhouse had previously been heated with an electric air-to-water heat pump. However, as the compressor had broken down, another solution had to be found. In order to be able to use the owner's own forest, a log heating system was preferred. The new log combustion system heats the infloor heating of the

existing and beautifully renovated farmhouse, providing comfortable warmth.

The existing energy storage tank had too little capacity and was supplemented by three storage tanks of 950 liters each. The new chimney was harmoniously embedded in the existing façade.

Due to the low cellar height, there were not many products on the market that could be considered. But this is no problem for the compact Easytronic.



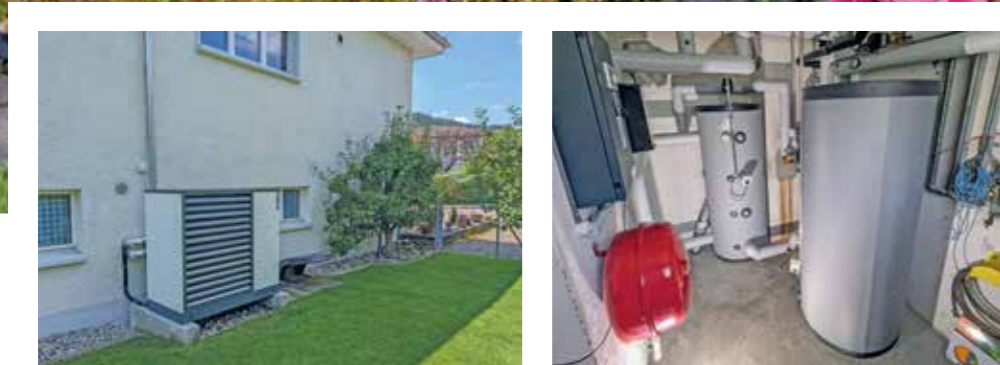
BRIEF INFO

Product type	Easytronic XV ² 30/30
Application area	Heat and hot water for farmhouse
Capacity	30 kW
Fuel	Lump wood (½-meter chips, mixed wood)
Heating room	3.73 m × 3.47 m x 1.98 m
In operation since	May 2024
Owner	Stefan Aubert
Installation site	CH-9246 Niederbüren SG
Installation	Inauen Heizung, CH-9205 Waldkirch



Environmentally friendly energy, combined with comfort

Simone Sieder / Bichelsee TG / Switzerland



In the idyllic Bichelsee, nestled in a picturesque landscape, the owner Simone Sieder lives in her single-family home. The old oil heating system was recently replaced by a modern air-to-water heat pump due to its age. This decision was not only intended to increase comfort with reduced heating maintenance costs, but also to protect the environment at the same time.

The former oil tank room has now found a new purpose, which creates additional storage space in the house. The freezer, a shoe rack and a storage box now have their place here.

When implementing her project, Ms. Sieder attached great importance to working with regional companies. The partners were carefully selected and the cooperation was exemplary in every phase of the project. The friendly and competent advice contributed significantly to her feeling that she was in good hands. Particularly noteworthy is the support provided by the company Schmid, which actively supported it in applying for funding.

Thanks to the new heat pump, the detached house is now heated efficiently and in an environmentally friendly way. The intelligent technology automatically ensures the optimal room climate without anyone having to worry about it. The decision to rely on modern, sustainable heating technology has proven to be a complete success and will ensure that Simone Sieder's home remains comfortably warm in the future.

BRIEF INFO

Product type	Air-to-water heat pump SWA 10
Use	Heat, hot water, cooling in the summer
Output	9.2 kW
Efficiency class	A+++
Sound power level	49 db(A) according to ERP (EN 12102)
In operation since	May 2024
Owner	Simone Sieder
Installation site	CH-8363 Bichelsee TG



Sustainable feel-good atmosphere

Familie Kohler / Wängi TG / Switzerland



The Kohler family has built their dream home in the beautiful, quiet town of Wängi. In their modern home, they focus on sustainability and efficiency. They therefore opted for an innovative brine-to-water heat pump, which reliably heats both the in-floor heating and the hot water tank.

The Kohler family is particularly enthusiastic about the possibility of keeping their house pleasantly cool in the summer. This function not only provides additional comfort, but also contributes to a comfortable living environment.

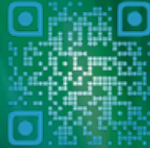
During the entire planning and construction phase, the Kohler family rely on quick and competent advice. The excellent advice they received was crucial to ensuring that the project was implemented smoothly and without complications.

The decision to install a brine-to-water heat pump proved to be ideal. Thanks to the latest technology, the Kohler family's home is heated and cooled in an energy-efficient manner, maximizing both comfort and environmental friendliness. The family is delighted with their new, sustainable home and the excellent support from everyone involved.

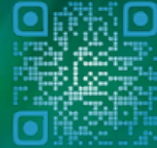
BRIEF INFO

Product type	S1155-12 brine-to-water heat pump
Application area	Heat, hot water, cooling in the summer
Capacity	12 kW
Efficiency class	A+++
In operation since	February 2020
Owner	Kohler family
Installation site	CH-9545 Wängi TG

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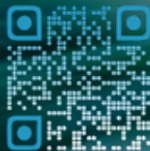
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