Horticulture - clever heating

ENERGY COSTS REDUCED!

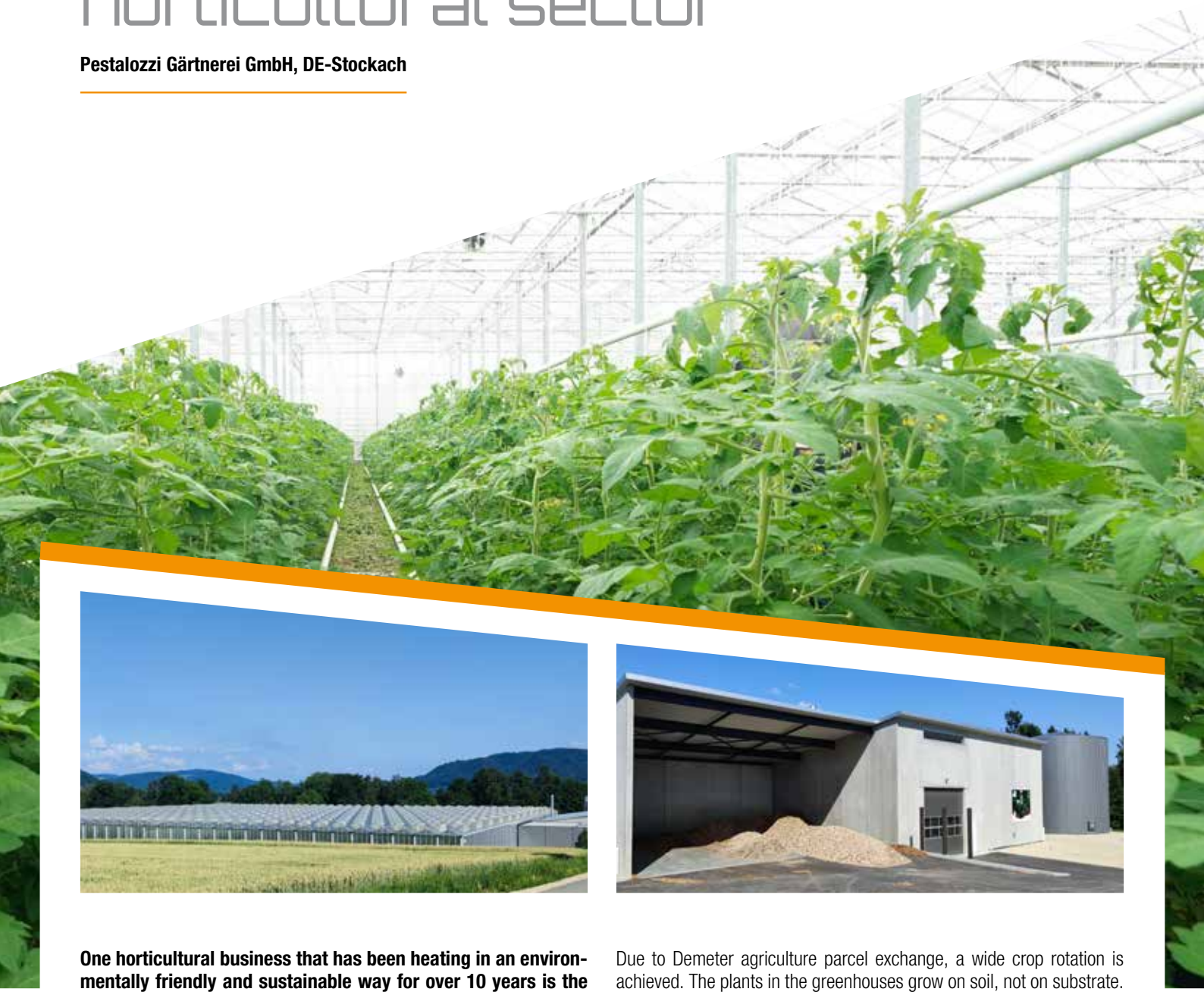
Schmid energy solutions is the largest Swiss manufacturer of wood furnaces and has been at the forefront of developing technology for decades. Today, the company is one of the world's leading companies in the industry. Schmid systems are in use all over the world.

CO_2 levies on fossil fuels, rising energy, disposal and recycling costs call for additional measures in the area of environmental management. Added to this is the increasingly unstable supply of fossil fuels, which is causing many companies to look for new energy solutions. Wood as a heat source is a good choice - the fuel is available regionally and inexpensive. This is also interesting for the horticulture industry. Many customers in this segment already rely on the long-standing expertise of Schmid energy solutions. The references presented here show the successful transition to modern wood firing.

SCHMID
energy solutions

Wood energy for the horticultural sector

Pestalozzi Gärtnerei GmbH, DE-Stockach



One horticultural business that has been heating in an environmentally friendly and sustainable way for over 10 years is the Pestalozzi Demeter nursery in Stockach (DE).

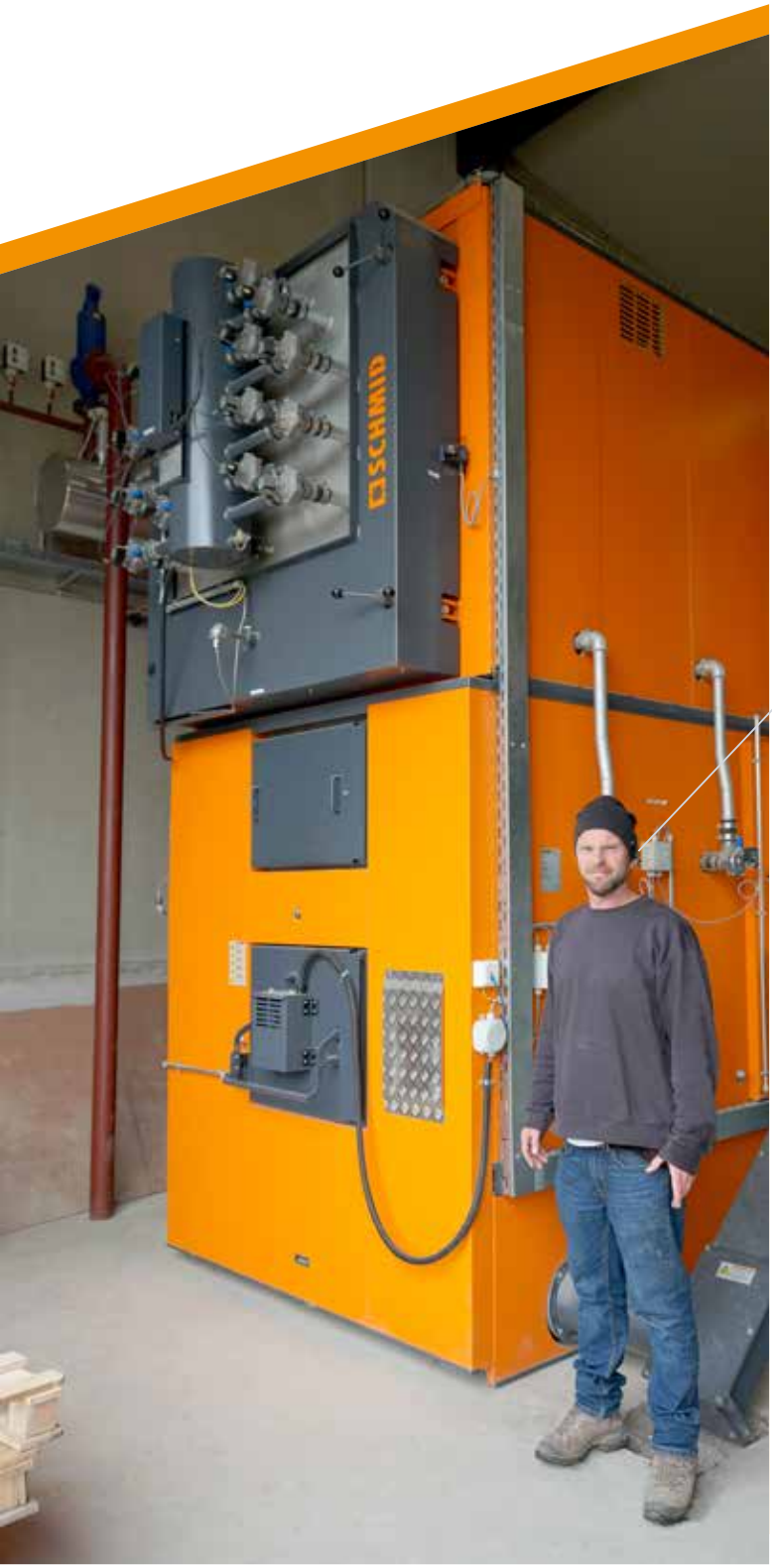
Master gardener Birger Richter and his team grow up to 35 types of seasonal lettuce and vegetables. In addition, there is a colourful assortment of garden and balcony flowers. A special feature are the teas and aromatic herbs, which are offered in over 20 varieties and as blends. At the Pestalozzi nursery, almost everything from cultivation to quality control and packaging is done by hand.

The Pestalozzi nursery operates according to the guidelines of the Demeter Association. Annual certification confirms that the special requirements for biodynamic cultivation have been met.

Due to Demeter agriculture parcel exchange, a wide crop rotation is achieved. The plants in the greenhouses grow on soil, not on substrate. Our own intensive compost management promotes the liveliness of the soil as a basis for natural plant growth.

Training centre with a special mission

The Pestalozzi nursery is a training centre of the Pestalozzi children and village youth. The focus is on training young people with special needs. Horticulturalist in the field of vegetable gardening is a recognised vocational training with examination by the regional council of Freiburg. The theoretical requirements are reduced according to the abilities of the young people. In addition, in-company full training as a Horticulturalist in vegetable cultivation is also offered. Each trainee is involved in the operational process according to their personal skills. The Pestalozzi nursery trains 6-10 young people per year.



“We feel very well looked after by Schmid AG energy solutions and appreciate the competent cooperation.”

Birger Richter, Pestalozzi Gärtnerei GmbH

BRIEF INFO

Site	Pestalozzi Gärtnerei GmbH, DE-Stockach
Application	Heat for greenhouses
Project planning	Schmid energy solutions
Fuel	Wood chips (P100 / M 60 %)
Type of furnace	Schmid moving grate combustion systems 2 x UTSR-1200.32-1 visio
Output	1.7 MW total
Discharge	Push floor
Flue gas dedusting	Electrostatic precipitator with integrated economiser
In operation since	the 2021/2022 heating season

Wood energy for the Pestalozzi nursery

The team cultivates a total of 25 hectares of rain-fed open land and approx. 4.0 hectares of high-glass area, which is heated with the latest environmentally friendly combustion technology.

Two Schmid wood firing systems with a total capacity of 1.7 MW are installed on the Pestalozzi nursery premises. With two wood chip furnaces, the greenhouses are heated to approx. 18°C, depending on the plant crop.

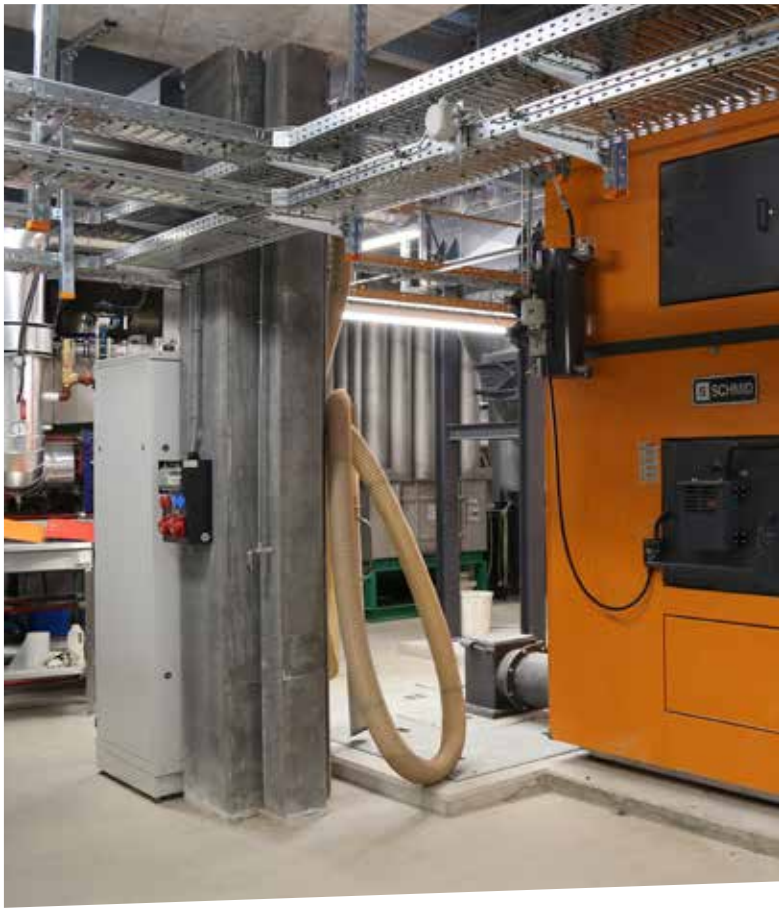
The biomass furnaces that have been installed are the only alternative for an environmentally friendly and economical heat supply for glass houses. Thanks to state-of-the-art combustion and filter technology, the current emission limits can be significantly undercut.

The biomass is procured from regional wood industries with short travel distances. To a large extent, the fuel mix consists of beetle-infested and landscape wood.

Birger Richter is enthusiastic: “The two UTSR visio woodchip combustion systems guarantee a reliable energy supply with maximum availability. We feel very well looked after by Schmid AG energy solutions and appreciate the competent cooperation.”

Biotta AG and Rathgeb Bio: Wood combustion for heating and process steam

Biotta AG, CH-Tägerwilen



Biotta AG and Rathgeb Bio companies have worked for years on a partnership joint venture. Since September 2019, the two companies have also been jointly operating a wood heating centre.

For 65 years, Biotta has stood for a colourful range of vegetable and fruit juices - 100 % natural, 100 % organic. With every bottle of Biotta juice, a bit of tasty nature is sent out into the world. The close cooperation with regional organic farmers is part of the holistic company philosophy. One of these partners is Rathgeb Bio. This company, run by the third generation, has developed from a simple family business into a leading supplier of organic products. Today, Rathgeb produces over sixty different varieties of vegetables and potatoes.

State-of-the-art condensing steam heating plant in Tägerwilen

The Rathgeb company operates various greenhouses in Tägerwilen, right next to Biotta AG, which has its head office in Tägerwilen. Four years before the project completion, the neighbouring companies were discussing the possibility of a joint heating centre for the first time. A feasibility study for a heating centre including steam generation for process heat was commissioned. External energy experts addressed the energy-related questions and came to the conclusion that a wood combustion system with high utilisation throughout the year was the best possible fossil-free option.

After a long planning phase, the plant was commissioned in September 2019. Markus Gschwandtner, Biotta CFO: "The Schmid company advised us competently at all times in this demanding project and enjoys our full trust". Christian Rathgeb, Rathgeb's current Managing Director, seconds this vote of confidence: “Thanks to the extraordinarily competent and committed project team of Schmid AG, the wood combustion plant was successfully realised”.

Heating and process steam with maximal efficiency

Installed is a highly efficient Schmid UTSR-2400.42 moving grate combustion system with a Denox combustion chamber for additional reduction of NOX values.

The plant supplies 3.4 tonnes of steam per hour and an additional 600 kW of heat from the condensation plant. The wood combustion plant permanently supplies Biotta AG with process steam for production (processing of vegetables incl. decanter for juice extraction, pasteurisation and filling of juices) as well as heat for the office and production facility. At Rathgeb, keeping the plants frost-free in winter and healthy in summer are central, which is ensured by the climate regulation of the greenhouses.

BRIEF INFO

Client and	Biotta AG, CH-8274 Tägerwilen
Operator	Rathgeb Bio, CH-8274 Tägerwilen
Application	Heating / process steam
Project planning and	Durena AG, CH-5600 Lenzburg
Installation	Hälg & Co. AG, CH-St. Gallen
Fuel	70 % wood chips, Residue: Landscape wood / Thinning residual wood
Type of furnace	Schmid moving grate combustion system UTSR-2400.42
Output	3.4 T / h steam 600 kW heat
Fuel logistics	Push floor / auger systems
Heat recovery	Save Energy (direct) flue gas condensation
In operation since	October 2021

First Schmid furnace in Canada

Centre de Formation Agricole de Mirabel / Mirabel QC (CAN)

Founded in 1991, the Centre de Formation Agricole de Mirabel (CFAM) is located in Mirabel, Quebec and provides technical training for agriculture. In February 2021, the first Schmid plant in Canada was commissioned for the customer CFAM.

The agricultural training centre is located in a suburb of Mirabel. In addition to the agricultural school, the CFAM also includes the Mirabel Agri-Food Research Center. The Research Institute aims to promote the development of organic farming and to strengthen the competitiveness of farms.

Cooperation with Combustion Expert Energy

Combustion Expert Energy, Schmid's distribution partner, was awarded the project in the second half of 2019. Combustion Expert Energy was originally a wood-fired boiler manufacturer itself and has already installed 35 biomass boilers in the output range from 500 kW to 30 MW. The existing local know-how offers the best prerequisites for market entry in the northern part of North America.

Best technology prevails

Since the customer CFAM has high quality requirements, the Schmid technology and the developed concept were adopted as the basis for the tender.

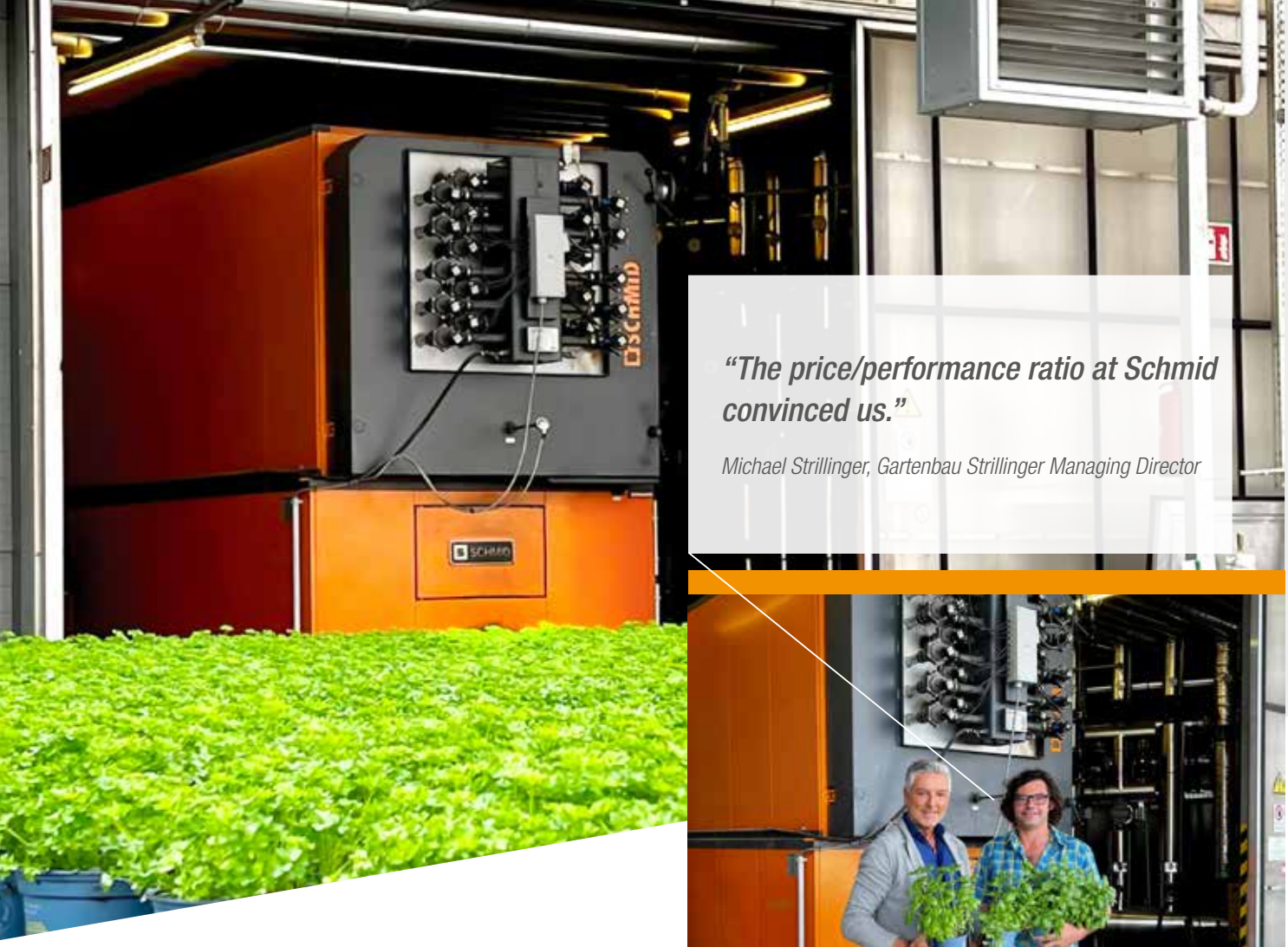
François Laroche, Quality Control Manager and Technical Advisor at Combustion Expert Energy, is very pleased with the successful project: "Not only is the customer thrilled, but we at Combustion Expert Energy are also impressed with the quality of the control system and the boiler. It went live within a few days without a hitch, which was surprising for a new installation. Our team is looking forward to the next project with enthusiasm."

The funding programme Bioenergy Program

The project is supported by the "Bioenergy Program Quebec". The aim of the support programme is to reduce greenhouse gas emissions and the consumption of fossil fuels. The Bioenergy Program is offered to businesses, institutions, and municipalities that use fossil fuels and commit to measurably and sustainably reduce their consumption by switching from fossil fuels to bioenergy.

BRIEF INFO

Building owner	Centre de Formation Agricole de Mirabel Mirabel, QC, Canada
Site	Mirabel, Quebec, Canada
Application	Heat for buildings and greenhouses
Project Planning	Combustion Expert Energy Trois-Rivières, QC, Canada
Fuel	Pellets
Type of furnace	Underfeed firing UTSP-360
Output	360 kW
Discharge	Vertical silo with auger discharge
Flue gas dedusting	Multicyclone
In operation since	February 2021



“The price/performance ratio at Schmid convinced us.”

Michael Strillinger, Gartenbau Strillinger Managing Director

Strillinger Herbs from Tirol

Gartenbau Strillinger, AT-Söll in the Tyrol

In 2012, the first Schmid boiler was installed at the Strillinger nursery. The business of son Michael and father Johann Strillinger is ecologically oriented and has been producing potted and cut herbs at 600 meters above sea level at Söll in Tyrol for many years. In the meantime, the greenhouse area has grown to over 14,000 m², and in 2019 the nursery was expanded with a second Schmid 900 kW boiler. According to Michael Strillinger, there is still further potential for glass house extensions at the location. He is optimistic about the future. On average, around 450,000 herb pots are processed every day and grown until the plants are ripe.

The use of beneficial insects for biological pest control, for example, has long been standard here. “We decided on the Schmid boiler because of the good price/performance ratio," reports the junior, Michael Strillinger. The UTSR-1200 was the first system that the Schmid team Austria sold exactly 10 years ago.

BRIEF INFO

Site	Gartenbau Strillinger AT- 6306 Söll im Tirol
Application	Greenhouse heating
Project Planning	Schmid energy solutions
Fuel	Wood chips and forest chips
Boiler type	1x moving grate firing UTSR-1200.32 1x underfeed firing UTSK-900.32
Power	1,200 and 900 kW
Discharge	Push floor
Flue gas dedusting	Multicyclone
In operation since	2012 (UTSR) and 2019 (UTSK)

Photos from TASPO projects May 2022 / Andreas von der Beeck

Löwer relies on green heat for the new building

Löwer Grün Erleben, DE-Aschaffenburg

Founded in 1877 as a traditional plants expert, the Löwer Group now has 5 garden centres in the Aschaffenburg area (DE). Centrally located for all five Löwer sales nurseries, a state-of-the-art and future-oriented cultivation with around 21,000 m² of cultivation greenhouses has been created in Aschaffenburg. Every year, around 2.5 million plants are now grown in these greenhouses under the best ecological conditions.

The heat supply for the new company is completely sustainable and CO2-neutral via a wood chip heating system. The installed heating has a rated output of 850 kW. Natural forest chips from the region are used as fuel. In order to allow maximum flexibility with regard to the moisture content and size of the wood chips, great importance was attached to a robust and trouble-free fuel conveying system and an efficient firing system.

The fuel store has a volume of 150 m³, which corresponds to approx. 6 to 7 days of operation. The hydraulic push floor discharge can be accessed by truck or front loader. The fuel is fed to the horizontal feed grate of the furnace via a double chain conveyor in combination with a hydraulic insert. In combination with the stepped air flow, a large combustion chamber volume and a large rust surface allow a wide range of biomass fuels even with high humidity. The rated output can also be used with wet wood chips and continuous load operation.

In terms of operating costs, the Löwer Group also did not want to compromise. In order to meet the high demands on the automation of the entire plant system, a central ash removal system was installed on an ash top trough, for example. A flue gas heat exchanger increases the efficiency of the system. The modulating power control takes place in connection with an intelligent buffer storage management.

Löwer particularly appreciates the system monitoring offered by the Swiss manufacturer SCHMID. The system is monitored by the boiler supplier, operating data is archived, evaluated and reported to the customer at regular intervals.

“Especially in view of the current developments on the global energy market, we are glad that we made the right choice for heat supply 2 years ago. With SCHMID company we have chosen a competent partner who gave us professional advice from the application for the subsidies to the final system concept.” summarizes Martin Löwer, owner of Löwer Grün Experience.

BRIEF INFO

Site	Löwer Grün Erleben, DE-Aschaffenburg
Application	Heat for greenhouses
Project planning	Schmid energy solutions
Fuel	Wood chips (P100 / M 60 %)
Type of furnace	Schmid moving grate firing UTSR-900.32-1 visio
Output	850 kW
Discharge	Push floor / auger systems
Exhaust gas dedusting	Multicyclone / electrostatic precipitator
In operation since	October 2021

Ecological heat for tree nursery and buildings in the cold north

Holmen Skog AB, SWE-Gideå

Holmen Skog AB is a business unit of the Holmen Group and is responsible for forest management and the procurement of wood for the Swedish sawmills as well as paper and cardboard factories of the company. The nursery in Gideå has been heated with wood chip firing since the beginning of 2020.

The project was awarded to Bioptima AB, Schmid's sales partner, and includes the heating plant, storage tanks, fuel storage, boilers, district heating piping, temperature control in the greenhouses and connection to the surrounding buildings. In winter, when nothing is grown, the greenhouses hardly need any heat. During these months, the boiler supplies heat to the surrounding buildings, which enables a high utilisation all year round.

BRIEF INFO

Site	Holmen Skog AB, Örnsköldsvik, Sweden
Application	Greenhouse heating
Project planning	Bioptima AB, Gammelstad, Sweden
Fuel	Dry sawmill waste material (M 10%), wet wood shavings (M 50%), fresh forest chips (M 55 - 60%)
Type of furnace	Schmid moving grate furnace UTSR-3200.32-1 visio
Power	3,200 kW
Discharge	Push floor
Exhaust gas dedusting	Multicyclone / Electrostatic precipitator
In operation since	February 2020

Want further references?

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