

care

...



NEXT GENERATION

New heat pumps
ready

In the spotlight

Heating technology
in transition

Warm Classroom

Initiative marks
30th anniversary in China

...
of a better
climate.

Inside each home
and the world
around it.

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First aroTHERM plus for SOS Children's Village

The first aroTHERM plus heat pump from the new model series was installed at an SOS Children's Villages facility in Essen, Germany. Dr Tillmann von Schroeter (right), Managing Director of Vaillant Germany, handed over the heat pump to Head of the facility Herbert Stauber in September. The Vaillant Group has been supporting the children's rights organisation "SOS Children's Villages worldwide" in 25 countries with efficient heating technology and social projects for more than ten years.



Royal visit at the new cylinder plant in Derby, UK



In October, the Vaillant Group had the great honour of welcoming Her Royal Highness, the Princess Royal, to its new plant in Derby. The purpose of the visit was to present the new production facility and showcase the company's importance to the local community.

The production site in Derby is located just a few kilometres from the plant in Belper. The hot-water cylinders manufactured in Derby are essential components in heat pump systems. Demand for heat pumps has been growing in the UK for some time now.



WORTH KNOWING

>50% growth

Around €3.3 billion in sales revenue and growth of over 50 per cent with heat pumps. Despite the weak market environment, the 2025 financial year was a successful one for the Vaillant Group.



Senica plant receives award

The heat pump plant in Senica, Slovakia, received the “Trend – Investor of the Year 2025 Award” at the end of last year. The award is given for exceptional business investments by “TREND”, the leading Slovakian weekly business magazine.

NEXT LEVEL VAILLANT wins Red Dot Award

Vaillant has won the Red Dot Award for its exhibition at the leading trade fair ISH 2025. The rotating platform at the centre of the trade fair stand put the spotlight on the new heat pumps and attracted numerous visitors.



aroTHERM plus scores well in test

Stiftung Warentest, a German product testing organisation highly regarded by German consumers, put heat pumps through rigorous testing in October 2025. Evaluated criteria included energy efficiency, noise level, operation and user-friendliness. The results were very positive, with the top models demonstrating a high level of quality. Four of the five devices tested – including the aroTHERM plus from Vaillant – received the rating “good”.



Design that delights, performance that delivers



A jury of design experts has honoured the Vaillant Group twice. The new aroTHERM perform heat pump and the iQconnect electronics platform received the iF Design Award. With its anthracite finish and flowing lines, the heat pump is described as timeless elegant; while the iQconnect halo, according to the jurors, features a minimalist user interface that delivers precise information. The award is one of the most prestigious international accolades for design.

RoSPA Gold Award for Health & Safety

Vaillant Industrial UK has received the RoSPA Gold Award for the tenth time. In addition, the company has now also been honoured with the prestigious President's Award. The RoSPA considers around 2,000 applications from companies in over 50 countries representing a total of over seven million employees. It is the world's largest award programme for health and safety and recognises the highest standards in occupational accident prevention.



WORTH KNOWING

HKR Roding promotes biodiversity

The German Sustainable Building Council (DGNB) has awarded the Roding plant its gold certificate. The reason for the award: the outdoor areas actively promote biodiversity.

Since 2022, HKR GmbH & Co. KG has been committed to designing its company premises in a nature-friendly way. To this end, trees and hedges have been planted and flower meadows and perennial beds have been created. Nesting aids, a cistern and a nature trail complete the landscape. The site has also been generating environmentally friendly electricity with a solar power system since 2024.



Green electricity for in-house use

To reduce its carbon footprint and save energy costs, the Vaillant Group is modernising its buildings and sites with heat pumps and solar systems. The photovoltaic modules installed on the roofs of the factories and office buildings already supply 1.3 million kilowatt-hours of electricity per year for in-house use. The necessary installations for generating an additional 2.3 million kilowatt-hours are currently being planned and implemented.



NEW PRODUCTS



Next generation

Heat pump



Vaillant is constantly reinventing the heat pump – the latest models are more flexible, quiet and efficient than ever before.

Higher energy efficiency, more powerful performance, lower operating costs. Greater flexibility when it comes to installation. Solutions for all types of buildings, from new builds to older properties. Not to mention opportunities for system integration and digital networking.

The new generation of Vaillant heat pumps meets all these requirements.

The new **aroTHERM plus** shows how it's done: it is available in output sizes from 3 to 12 kilowatts and has a particularly wide range of possible applications. The heat pump is suitable for use in single-family homes and smaller apartment buildings – whether newly built or existing properties. Its elegant design in anthracite turns it into an eye-catcher. But its clear unique feature is its flexibility.

Due to its small required safety distances, the **aroTHERM plus** can also be installed in places where this would not be technically possible with conventional heat pumps. This advantage already attracted a lot of attention when the model was presented at the leading international trade fair ISH in 2025.



ENVIRONMENTALLY FRIENDLY
Natural refrigerant
R290 for high
efficiency at
low cost

arotherm plus

FLEXIBLE

Patented safety concept offers freedom of installation



QUIET

Triple-decoupled refrigerant circuit for minimal noise levels

aroTHERM pro



VERSATILE
For smaller single-family homes or project-specific heating solutions



COMPACT

Can also
be installed in
small spaces



Vaillant

RETROFITTABLE

Suitable for
new builds and
renovations

The **aroTHERM pro** is a real space saver in Vaillant's new heat pump range: it is available in 5-, 7- and 11-kilowatt output classes, takes up the least space of all models in comparison and is a cost-effective solution. Another advantage: despite its compact design, it is ideally suited for supplying single-family homes.

Technically, the aroTHERM pro achieves high flow temperatures of up to 65 °C, ensuring comfortable heating even in extreme sub-zero temperatures. The model combines efficient performance with easy installation and high flexibility in terms of where it can be fitted. This makes the heat pump ideal for modernisation and renovation projects.

aroTHERM perform

**QUIET AS
A WHISPER**

Very low noise emissions due to special design and integrated night mode

**FUTURE-
PROOF**

Economical, efficient solution for apartment buildings

ROBUST
 Durable
 construction for
 trouble-free
 operation




The new **aroTHERM perform** is a powerful air-water heat pump. It was specifically designed for larger residential buildings and multi-family homes. With its high heating output and efficient operation, the heat pump is ideal for both new and existing buildings. Thanks to its high flow temperatures, it is also compatible with existing radiators. The integration of the new iQconnect electronics platform also makes it particularly easy to cascade up to six heat pumps. Despite its high performance class, the aroTHERM perform runs very quietly and is also suitable for use in noise-sensitive residential areas.

Vaillant also offers innovation in the field of ground source heat pumps: the new **geoTHERM exclusive** and **geoCOMPACT exclusive** models feature high ETA values and exceptionally low operating costs. They are suitable for both new and existing buildings – with underfloor heating or radiators.

The geothermal heat pumps combine maximum comfort, ease of installation and state-of-the-art technology. They are available in output sizes from 5 to 17 kilowatts. They too use the natural, environmentally friendly refrigerant R290. Thanks to an activated carbon box developed by Vaillant and the Fraunhofer Institute for Solar Energy Systems ISE, safety measures such as exhaust air pipes or leakage sensors are not needed in the installation room. This saves costs.

A key advantage of the new generation is the optimised operation via the innovative touch display, allowing for quick commissioning and convenient set-up.



CONNECTIVE
Fast communication,
remote maintenance
and targeted energy
management

**EASY
TO INSTALL**
No additional safety
measures required –
simple, safe and
compact

geoCOMPACT exclusive

 Vaillant

HIGHLY EFFICIENT
Reliable and powerful heating performance – in existing buildings, too



GETTING THE MOST OUT OF IT



It's never been easier. With smart energy management and individual remote configuration, Vaillant heat pumps run even more efficiently and cost-effectively.

With EnergyPLUS, owners get the most out of their heat pump. This is because digital energy management ensures that the heat pump always operates when it is energetically and financially most effective. At the same time, OptimisationPLUS remote management ensures that the heat pump always automatically operates in the best possible performance mode.

EnergyPLUS Smart heating pays off

In practice, appliance owners have two options: if the house is equipped with a photovoltaic system, the self-generated electricity can be used to power the heat pump. Alternatively, the heat pump can be operated based on dynamic electricity tariffs. Using precise weather data and smart algorithms, the system recognises when there is a particularly large amount of solar power available or when electricity prices are low. Then, it shifts the heat pump's runtime to these specific time windows. Doing this boosts self-consumption and lowers grid power consumption. Or, the heat pump runs more when electricity prices are low and avoids expensive time windows.

Either way, heating costs are reduced. The service can be activated without on-site installation, is easy to integrate into existing systems, and can be used directly via the myVAILLANT app. Operation is fully automatic – no additional hardware is required.

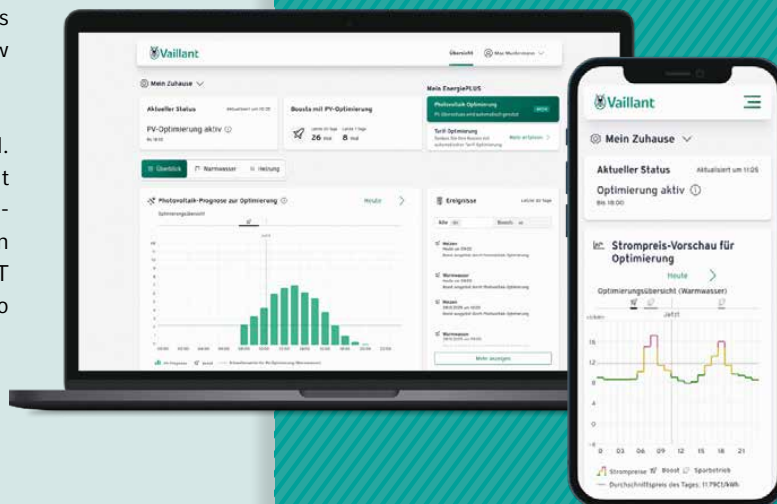
OptimisationPLUS Efficiency in permanent operation

While EnergyPLUS uses electricity intelligently, OptimisationPLUS ensures that the heat pump is permanently set to the best possible operating mode. The service constantly analyses the system's operating data and remotely adjusts relevant parameters – for example, when usage habits or weather conditions change. The result is not only efficient operation with lower energy consumption, but also a longer service life for the heat pump.

For owners, optimisation means up to 15 per cent reduced energy costs without having to make manual adjustments or schedule service calls. Full transparency is particularly convenient. The monthly energy report keeps track of energy consumption as well as any changes in operating conditions.

ADDED VALUE AND GREATER COMFORT

- Up to 15 per cent less energy consumption thanks to automatic optimisation
- Operating data always available at a glance with the monthly energy report
- Lower energy costs through self-generated photovoltaic electricity or dynamic electricity tariffs
- Energy management is compatible with all photovoltaic manufacturers and electricity providers
- Easy integration into existing systems and ready for immediate use



FROM THE FRINGE TO THE SPOTLIGHT

The shift toward heat pumps continues in many countries across Europe. The technology is becoming mainstream.





JOHANN VAILLANT
TECHNOLOGY CENTER



HEAT PUMP PLANT
SENICA



ELECTRONIC CENTER



Heat pumps are exposed to extreme climatic conditions in the test chambers at the **JOHANN VAILLANT TECHNOLOGY CENTER**.

Royal flair for the heating transition: Her Royal Highness, The Princess Royal, visited the Vaillant Group's new cylinder plant in Derby at the end of October 2025 – immediately after its construction was completed. "It was a great honour for everyone in the team," says Plant Director Joe Dunn, "from the engineers through to the trainees."

The snapshot in Derby represents a prolonged course of development. It is yet another step in a transition process with heat pump technology at its core. What began with initial R&D projects around 25 years ago has since evolved to become the most important technology for the future of heating in Europe.



The **FACTORY IN NANTES** has been producing heat pumps since 2008.

From niche market to standard

In the early 2000s, heat pumps were considered a high-efficiency technology. They occupied a niche market. Environmentally conscious and tech-savvy consumers were interested. Since then, heat pumps have gradually become the new standard – first in new buildings, then in existing homes undergoing renovation. Technical advances and industrialisation in the form of volume production have made this possible. In Germany, one of the largest heating technology markets in Europe, the technology outsold all other heating systems for the first time in 2025. This trend is also evident in other European markets.

At the beginning of the 2000s, it was not yet obvious that heat pumps would come to play a central role in heating technology. “With the moderate number of research and development projects, the focus was on laying the groundwork,” recalls Dr Rainer Lang. As a senior developer, he has helped shape the advancement of heat pump technology at the Vaillant Group since that time. “In the beginning, the team consisted of just a few members. Today, the division is internationally organised, with around 300 highly qualified specialists. Several dozen of these projects are being implemented simultaneously.”

Building new skills

The technology required more than just engineering ingenuity. It also demanded strategic focus. Decades of expertise in the development of gas boilers had to be expanded with new skill sets. “The heart of a heat pump is the refrigeration cycle. The thermodynamic processes differ from those of heating technology based on fossil fuels,” explains the developer. The refrigerant also plays an important role. The decision to use the natural refrigerant R290 – as one of the pioneers in the industry – marked a milestone in 2019. R290 enables higher flow temperatures. This meant that the heat pump models could now

The **ELECTRONIC CENTER** manufactures several million electronic devices per year.

Heat pumps undergo acoustic testing at the **JOHANN VAILLANT TECHNOLOGY CENTER**.

The Vaillant Group's R&D projects, product portfolio and manufacturing network are geared toward heat pumps.



The series production of the aroTHERM perform heat pump takes place at the REMSCHEID PLANT.



The ELECTRONIC CENTER supplies around 300 different modules and components.



also be used efficiently in older buildings for the first time. A large new market segment opened up.

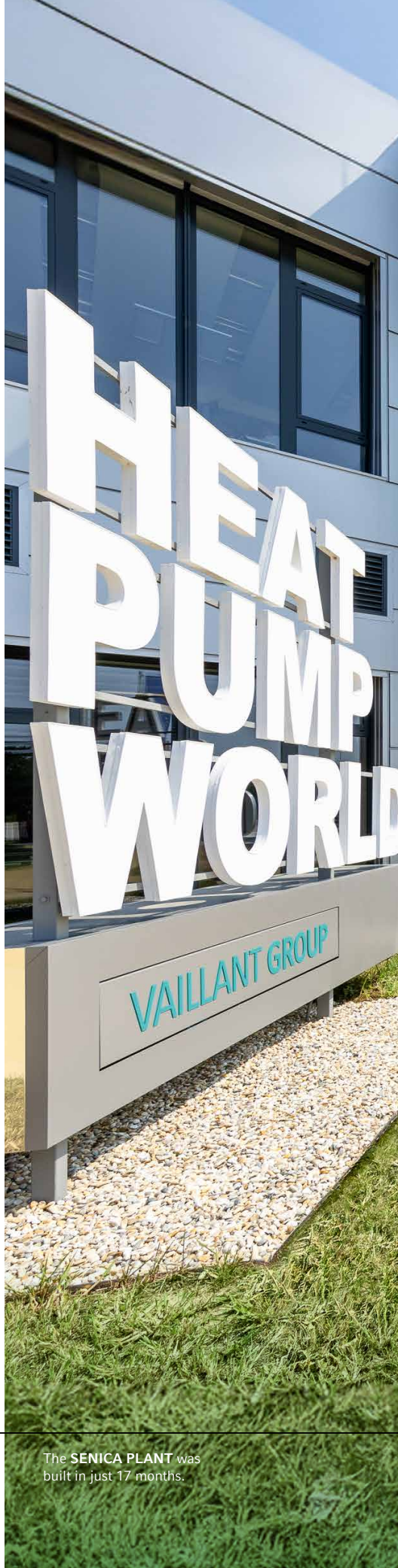
Lang formulates clear customer priorities for today's product features: "Efficiency and acoustics are crucial. Efficiency does not happen by chance, but as a result of many details in the refrigeration circuit and thermodynamic improvements." Another focus of development is on reducing noise emissions. After all, heat pumps nowadays are installed in densely populated residential neighbourhoods.

Transition of the production network

The Vaillant Group's manufacturing network has changed along with the development projects and the product portfolio. Nantes in France has been at the forefront of this. Heat pumps have been produced there since 2008. The plant has retained and expanded the expertise gained over the years, according to Plant Director Yuna Josse: "Today, a good 70 per cent of our production is exported throughout Europe." The most recent step: since the end of January 2026, the latest generation of the best-selling aroTHERM plus heat pumps has been rolling off the production line in Nantes.

Around 1,300 kilometres by air from Nantes, the momentum of the transition is also evident. In Senica, Slovakia, a mega factory for heat pumps was built in just 17 months. Production has been underway there since the autumn of 2023.

The plant was designed to be able to adapt flexibly to market demand. "Two to three production changeovers can be carried out per week," explains Plant Director Pavol Zuscik.



The SENICA PLANT was built in just 17 months.

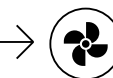
From development to series production

At the Vaillant Group headquarters in Remscheid, the proximity of the research and development centre and the plant offers advantages for scaling new products with a seamless transition from development to series production. Before that, new developments undergo over 100 different quality tests for function and service life at the Johann Vaillant Technology Center.

The Electronic Center, which opened at the end of 2024, is also located in Remscheid. The factory supplies all Vaillant Group plants and produces around five million electronic components annually. The expansion of production capacity was necessary because heat pumps contain about five times as many electronic components as gas heating appliances.

The circle is closing ... for now

The heat pump market is on the move in the United Kingdom as well. That is why heat pump production at the Belper plant has been running for several years. Local production is carried out for the local market. The newly opened factory in nearby Derby now supplies the necessary storage tanks. This makes it possible to serve the UK market independently and flexibly with a complete line of system technology.



GREEN THINKING, SMART PACKAGING

Not only the product itself, but also its packaging plays a role in the environmental balance. A new packaging concept introduced in 2025 shows that environmental responsibility can have economic benefits, too.

Less is more: the packaging for the Vaillant aroTHERM Split plus and aroTHERM plus air-water heat pumps has been cleverly designed to reduce the amount of material used. Less packaging material, less packaging volume, more compact dimensions. The new design enables more efficient storage and better use of truck capacity for transporting products.

6

lower carbon footprint
of packaging

20%

lower total weight

0%



Paper instead of plastic. A paper honeycomb cushion replaces polystyrene (EPS) plastic. The new material is inspired by nature. It is lightweight, stable and made from a renewable raw material. It is also fully recyclable in the existing waste paper circular system. Nevertheless, it is robust and provides reliable protection against damage where necessary.

The design already meets the requirements of the upcoming EU regulation on packaging and packaging waste – especially with regard to the permissible empty space. The new packaging not only scores points for its sustainability and the fact that it meets all functional requirements – it has also already won a prize: it impressed the German Packaging Institute’s packaging award jury with its comprehensive advantages in the “Logistics and Material Flow” category.

The packaging of other Vaillant Group product families will gradually be converted to the new design or introduced with it at market launch. These include the aroTHERM plus, aroTHERM pro, aroTHERM perform, geoCOMPACT exclusive and geoTHERM exclusive heat pump models.

23%

fewer truck trips from the plants to the central warehouses and distribution centres

25%

lower packaging volume

弱者坐待时机。
强者制造时机。

Ganzi Prefecture School,
Garzê Tibetan Autonomous
Prefecture, at 3,000 metres
above sea level





30 SCHOOLS TO MARK THE
30TH ANNIVERSARY

WARM CLASS- ROOMS

In 2025, the Vaillant Group celebrated yet another anniversary. The company has been present in China as a leading European heating technology manufacturer for 30 years now.



T

he Vaillant Group has been active in the People's Republic of China for 30 years now. In 2025, to mark its 30th anniversary, Vaillant China launched a special initiative: "Warm Classroom". The focus was on schools in remote regions or in places where basic infrastructure is missing; in particular, schools that don't have reliable heating and hot-water systems.

The Chinese Vaillant team decided to provide modern heating and hot-water solutions for a total of 30 educational institutions across the country that had to cope with cold classrooms. The aim was to give the children a healthy and motivating learning environment.

Getting started in Henan

The official launch of "Warm Classroom" took place on 29 April 2025 at **Heihumiao Primary School in Henan Province**. The school is located in a remote mountainous area where winters are particularly harsh. Despite continuous efforts by dedicated teachers, the primary school did not have dependable heating for its classrooms until recently. Before proceeding with the installation, Vaillant technical experts first assessed the heating requirements and the condition of the buildings. This was followed by developing a customised solution based on heat pump technology. This has made the winter cold a thing of the past and also improved the school's environmental footprint.



The programme kicked off at Heihumiao Primary School in Henan.



Ganzi Prefecture
School, Garzê
Tibetan
Autonomous
Prefecture



Efficient heating
technology for
classrooms

The grand opening ceremony was attended by school headmaster Yugun Zhang, Kevin Pu (Director of Vaillant China Technical & Training Center), the marketing and local sales teams, and numerous teachers and students. Volunteers from among Vaillant's employees organised a fun-filled programme for the day. The children were able to conduct science experiments, paint and do crafts. A professional basketball player fascinated the students with his moves.

Headmaster Zhang emphasised at the inauguration ceremony: "The equipment donated by Vaillant will significantly improve our living conditions in winter. We are very grateful for the support." Kevin Pu also underscored the importance of the project: "We hope that Vaillant technology will help support the children in their education."

Next milestone in Sichuan

In October, "Warm Classroom" reached the **Garzê Tibetan Autonomous Prefecture in Sichuan Province** – a highland region located over 3,000 metres above sea level with early, lengthy and bitterly cold winters. Here, **Yin'en No. 1 Village Primary School** and **Jiasikong Central Primary School** kindergarten in Dawu County received wall-hung electric boilers and radiators to reliably heat the classrooms. Vaillant sales and service employees as well as dealers also joined the initiative.

"The equipment donated by
Vaillant will significantly improve
our living conditions in winter."

Yugun Zhang, headmaster of
Heihumiao Primary School





Warm classrooms are more than just a comfort. They protect health and increase the ability to concentrate.

SOS Children's Village Yantai. The Vaillant Group also supports the children's rights organisation "SOS Children's Villages worldwide" in China.

The connection to Garzê Prefecture dates back to 2024, when Vaillant, in cooperation with local dealers, provided wall-hung heating appliances for **Jiasikong Central Primary School**, alleviating acute heating problems. The idea of equipping schools to combat the cold therefore originated as early as 2024.

Dai Bin, Sales Director of Vaillant China, together with Yu Lili, Service Director Vaillant China, and Vaillant dealers attended the on-site handover ceremony. At the ceremony, khatas – traditional white scarfs from the Tibetan cultural region – adorned the appliances as a symbol of purity and gratitude.

Health and participation

Warm classrooms are more than just a matter of comfort. They protect health, increase concentration and boost motivation. In rural areas, where families and schools often have to rely on makeshift solutions or cope with a lack of supplies, reliable heating means stability and predictability.

"Warm Classroom" is directly linked to the Vaillant Group's SEEDS sustainability strategy, which has been in place since 2011. In addition to the environment, employees, development & solutions, the SEEDS strategy also focuses on social engagement. Perhaps the most important activity in this context is the company's long-standing partnership with "SOS Children's Villages worldwide". In China, Vaillant has already supported SOS Children's Villages in Tianjin, Chengdu, Putian, Lhasa and other regions. The initiatives focus on areas where educational equity is particularly dependent on infrastructure.

From pilot project to nationwide roll-out

Since the “Warm Classroom” initiative’s launch in April 2025, 15 schools across seven Chinese provinces have already been equipped with heating or hot-water systems. The roadmap envisages reaching a total of 30 schools step by step. The approach follows clear and standardised procedures. These include project evaluation, site approval, budget and resource planning, quality assurance, safety checks and training. What is installed depends on the needs. Based on the location, this may be heat pumps, wall-hung electric boilers, radiators or combined system solutions – depending on the climate, grid stability or building standards. There is also a special focus on continuous maintenance to ensure that the technology operates reliably in the long term.

Every device installed is more than just a source of heating. It represents the conviction that education should not take place in the cold. With the experience gained in Henan, Yunnan, Sichuan and elsewhere, “Warm Classroom” will continue to grow.

Since the “Warm Classroom” initiative’s launch in April 2025, 15 schools across seven Chinese provinces have already been equipped with heating or hot-water systems.





DENMARK





DENMARK

And then
Kassebølle
Friskole
got more

eco- friendly

Rudkøbing
on the island of
Langeland,
Denmark

On the Baltic Sea island of
Langeland, a school is opting
for modern heat pumps.
The electricity comes from
an offshore wind farm.

The Baltic Sea island of Langeland in the Syddanmark region belongs to the archipelago known as the “Danish South Sea”. Around 12,000 people live there. The island is characterised by nature reserves and is known for its wild horses, the Exmoor ponies. The striking Ristinge Klint cliffs are among the tourist attractions, as are the old town and historic harbour of the main town Rudkøbing.

Kassebølle Friskole is located near Rudkøbing. The private school was founded in 1877. For over 145 years, it has been the only Friskole on Langeland. The educational concept is based on the ideas of the Danish theologian, philosopher and poet N. F. S. Grundtvig and the teacher Christen Kold. The concept focuses on promoting personal responsibility, creativity and so-

cial skills. Today, around 100 students from preschool to Year 10 attend Kassebølle Friskole.

Out with oil, in with heat pumps

Until recently, the school’s heating system was far less forward-looking than its educational concept. Until it was replaced, old oil-fired boilers were used for heating. The decision was made to switch to heat pump technology.

This is very much in line with a certain trend in Denmark. The majority of Danish households are now connected to district heating networks – some of which are even powered by renewable energies. But outside the reach of the grid infrastructure and away from densely populated areas, heat pumps are increasingly replacing con-

ventional heating systems. And their installation is subsidised by the government. Measured by the number of heat pumps installed per 1,000 households, Denmark currently ranks fifth in Europe. The country covers almost two-thirds of its heat supply from renewable energies, with biomass accounting for the largest share. The percentage of heat pumps is growing.

Optimisation is key

Per Møllemann from Møllemands VVS was responsible for installing the new heat pumps at Kassebølle Friskole. Calculating the heat demand was key for the expert in finding the right solution. In this case, this meant connecting a total of five aroTHERM Split air-water heat pumps from Vaillant in cascade to cover the heating requirements of all the school’s premises – from classrooms and dining halls to a gym. The in-



“We are very satisfied with our heat pumps. It feels good that they use renewable energy and the electricity that powers them comes from nature. We want to be a green school.”

Bitten Guldbjerg,
headmaster of Kassebølle Friskole

Measured by the number of heat pumps installed per 1,000 households, Denmark currently ranks fifth in Europe. The country covers almost two-thirds of its heat supply from renewable energies.



Per Møllemann from Møllemands VVS

Installation was not the end of the story. "We optimise every system component so that the customer saves as much energy as possible. We usually come back once or twice after installation to ensure that the system is perfectly tuned," explains Per Møllemann.

A rewarding investment

"We are very satisfied with our heat pumps. It feels good that they use renewable energy and the electricity that powers them comes from nature. We want to be a green school," sums up Bitten Guldbjerg, headmaster of Kassebølle Friskole. And Per Møllemann

can demonstrate with figures that the new heating system can save a great deal of energy. The last time he checked on the system, the energy consumption recorded was 36,000 kilowatt-hours. The energy efficiency of the heating system has definitely increased significantly compared to the previous solution with oil boilers.

The old town and historic harbour of the main town Rudkøbing are among the tourist attractions of the Baltic Sea island of Langeland.



INTERVIEW

Green loans, clear goals



How can corporate sustainability targets and corporate financing be combined? At the Vaillant Group, Treasury Director **Paul Jan** and Director of Group Accounting **Kai Hennig** work together on this. With **Joachim Müller**, Sustainability Advisor at LBBW Bank, they explain the added value of sustainable financing.

What is sustainable financing?

→ **Joachim Müller:** Sustainable financing takes environmental, social and governance aspects into account. These ESG criteria are incorporated into investment decisions in the financial sector. We basically distinguish between two categories: first, earmarked financing for specific environmental or social projects. And second, financing where the loan terms are linked to a company's sustainability targets. If the company achieves the agreed targets, the cost of financing is reduced. Conversely, the interest rate increases if the sustainability targets are not met.

How long has the Vaillant Group been using sustainable financing instruments?

→ **Paul Jan:** Green financing is part of our holistic approach to sustainability. In 2021, we took out our first syndicated loan linked to sustainability targets. At the time, LBBW was one of two leading banks in the consortium. We have since taken out two additional green promotional loans to finance our R&D projects, one from the European Investment Bank (EIB) and one from the state-owned KfW IPEX-Bank. Such loans are only granted to companies that can demonstrate that they develop sustainable products.

Why do financial institutions offer sustainable financing?

→ **Joachim Müller:** The EU wants to channel financial flows into sustainable business models. As

a financial services provider, we are required to pay greater attention to how sustainably our customers operate when granting loans. At the same time, as a bank, we also pursue our own ambitious sustainability goals. This includes making our loan portfolio, i.e., all of the corporate loans we grant, more sustainable. We use appropriate financing conditions to motivate our corporate customers to reduce their CO₂ emissions, for example.

What are the advantages for the Vaillant Group?

→ **Paul Jan:** In our financing strategy, we rely on as broad a mix of different financing sources as possible in order to minimise financing risks. Sustainable financing instruments give us access to a wider circle of banks and investors. We also benefit from price advantages. The promotional loans from the EIB and KfW IPEX-Bank are cheaper than financing via the capital market.

→ **Kai Hennig:** Green financing also sends a clear signal: linking sustainability targets to financing

“ *Green financing is part of our holistic approach to sustainability.* ”

Paul Jan,
Director Group Treasury

Paul Jan,
Director Group
Treasury



demonstrates to the public that we are pursuing a comprehensive sustainability strategy and are willing to be measured against the targets we have set. At the same time, this signal also resonates within the company. It strengthens the role of employees who drive innovative, sustainable projects.

→ **Joachim Müller:** We see with many corporate customers that working with clear performance indicators for sustainable financing often exerts a

“Clear performance indicators for sustainable financing often exert a powerful effect within companies.”

Joachim Müller,
Sustainability Advisor at State Bank of
Baden-Württemberg (LBBW)

powerful effect within companies. It leads to more efficient use of resources and reduced risks. This impact is difficult to measure, but it is often even more important than the pure financing advantage.

What challenges do companies face when using sustainable financing instruments?

→ **Joachim Müller:** The biggest challenge is ensuring the necessary data quality when determining the relevant sustainability indicators. Data quality in finance departments is generally very high due to statutory reporting requirements. In the area of sustainability, however, it does not always stand up to scrutiny during an audit. At Vaillant, however, the situation was different. Sustainability management was already established and reporting processes were already in development.

→ **Kai Hennig:** Ensuring data quality of sustainability indicators on the reporting date was one of the biggest challenges for us at the beginning, and in some respects it still is due to ongoing changes in requirements. Collecting data and establishing new reporting processes is a major challenge for the company across all functions. It was therefore very important to ensure transparency at an early stage so that the departments involved would support the transformation process.



Last year, the share of green financing in Europe declined sharply. Are many companies failing to recognise the advantages of sustainable financing?

→ **Paul Jan:** The decline is not a reflection of a lack of interest on the part of the capital market or banks, but rather a reflection of the uncertainty in the economic climate. Companies incur additional reporting obligations with sustainable financing. Delays and adjustments to the new EU transparency rules for sustainability reporting mean that some companies perceive the issue as less urgent.

What is the current share of green financing in relation to the Vaillant Group's total financing volume?

→ **Paul Jan:** More than half of our total financing portfolio can now be classified as sustainable based on criteria that we must meet.

→ **Kai Hennig:** We assume that sustainability will remain important in lending in the future. For further green financing, we can draw on our



Kai Hennig,
Director Group
Accounting

largely automated and standardised processes for collecting our sustainability key performance indicators. We have systematically developed these processes over the past few years.

“ We assume that sustainability will remain important in lending in the future. ”

Kai Hennig,
Director Group Accounting

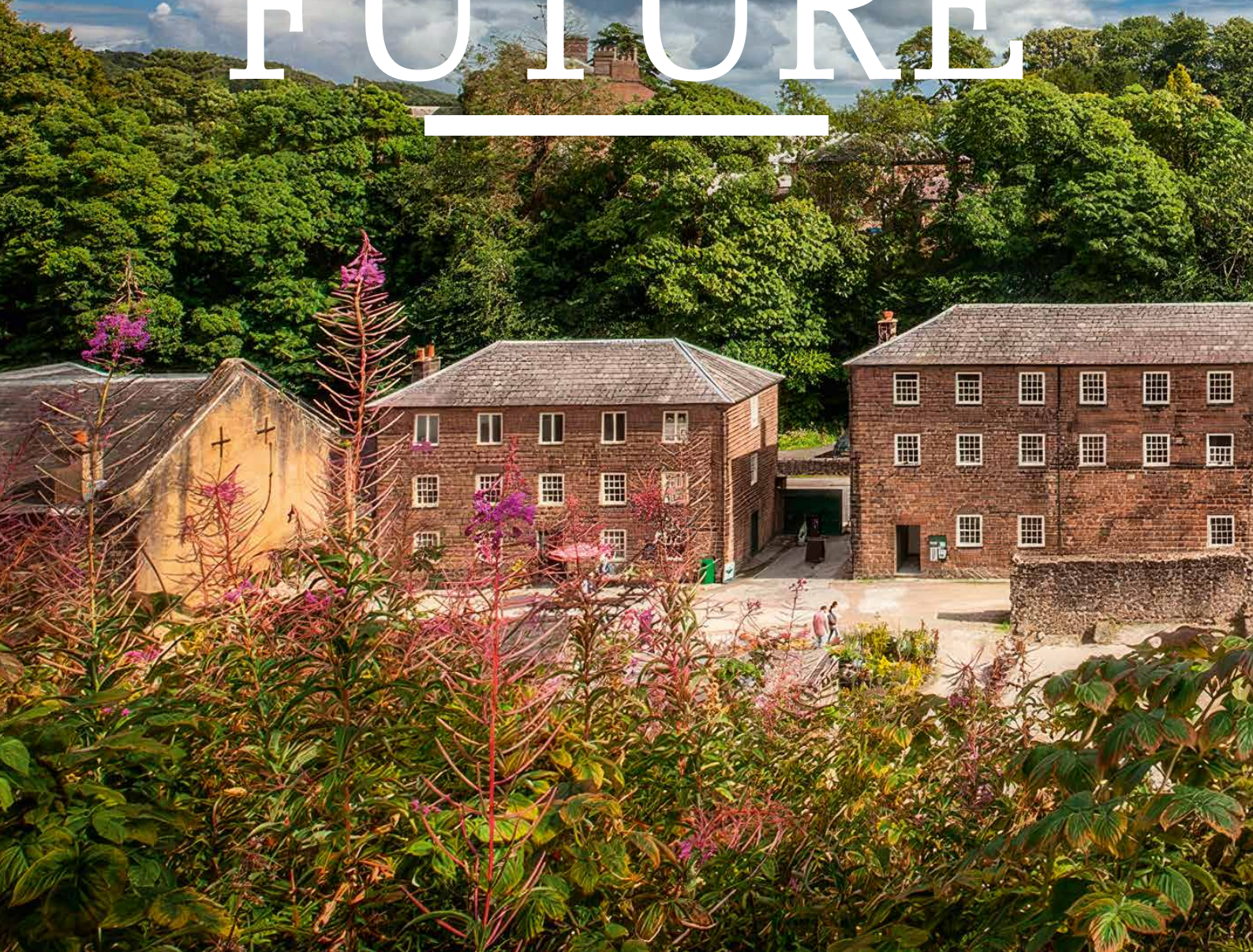


Joachim Müller,
State Bank of Baden-
Württemberg (LBBW)



CROMFORD MILLS

A tribute to the
PAST
and an eye on the
FUTURE



The site of a notable 18th century mill is putting water power back into its heart, thanks to a new turbine, water wheel and Vaillant's heat pump technology.



Carbon-free and fit for the future,
Cromford Mills in Cromford, Derbyshire (UK),
is harnessing sustainable energy to heat its
buildings – providing a perfect example of how
modern heat pumps can help breathe new
life into much-loved older and historical
structures.

Cromford Mills has a proud industrial past. It is the site of the world's first water-powered cotton spinning mill, created by Sir Richard Arkwright in 1771, which sparked the beginning of the Industrial Revolution and the creation of the factory system.

Today, Cromford Mills is a key part of the Derwent Valley Mills UNESCO World Heritage Site. Every year, thousands of visitors come to take a peek into the past, enjoy the events, cafes and artisan shops on site, experience expert-led tours and attend historical exhibitions. It is a living, breathing place.

Ongoing restoration and preservation work continues under the guidance of The Arkwright Society and the heritage site's team, to ensure Cromford Mills remains relevant and accessible to all.

Arkwright's water wheel powered the cotton spinning machines in the mill at Cromford Mills. Although that mill is no longer standing, amongst its ruined foundations is the historic structure of Arkwright's wheel pit.

With an eye on a more environmentally friendly future, the wheel pit is being used again to bring water power back to Cromford Mills – brought into the modern age with the design and installation of two Vailant flexoTHERM water source heat pumps, which form the centre of a new heating system that is providing sustainably generated heat to its buildings.

Clean energy ambition

Simon Gill is the former Operations Director at Cromford Mills and led the ambitious water power project. He says: "We have an original water supply, Bonsall Brook, that fed Arkwright's Mills with natural power and is still running right through the site. Our goal has been to try to harness such a powerful resource and use it for the benefit of the mill. Today's sustainable technologies allow us to do this in a responsible way so that we maximise the energy we can obtain from the water flow."

Architect James Boon has also been instrumental in pulling the proposals together for the project. Reflecting on the potential



"We have an original water supply that fed Arkwright's Mills with natural power."

SIMON GILL
Former Operations Director,
Cromford Mills



“



“Using water to create energy just as Richard Arkwright first did more than 250 years ago.”

JAMES BOON

Architect, James Boon Architects

he saw in bringing together the old and the new, he says: “I appreciated the historic connection of once more using water to create energy just as Richard Arkwright first did more than 250 years ago.”

In 2023, with a team of experts, the original wheel site was cleared and repaired, and the water wheel reinstated with a reconditioned (Gilkes) 17-kilowatt hydro-turbine installed by Derwent Hydroelectric Power.

Installing the heat pump system

Also located along the Derwent Valley – in Belper – Vaillant has close ties with Cromford Mills and began engaging with the water power project team early on. Alongside his colleagues, Richard Burley, Systems and Future Portfolio Engineer at Vaillant, quickly established that water source heat pumps would be key to harnessing the energy generated by the water wheel and turbine, to provide an efficient, modern heating system for the historical site.

Richard comments: “Given our ties to the local community here in Derbyshire and the long-standing relationship we had with Cromford Mills, our initial discussions with Simon started at the very early, ideas stage of the project. We discussed the aims and feasibility of bringing water power back to



Cromford Mills
in Derbyshire

UNITED KINGDOM

Cromford over several weeks. We wanted to donate two of Vaillant's flexoTHERM water source heat pumps to the project to support the local heritage site. We established a new plant room, in what was previously part of the local cheese shop, and supported it with a system that utilised the water course and the water wheel to provide the electrical power to run the heat pump system."

Installer Paul Leedham from Matrix Energy Systems says the system design delivers environmental benefit, adding: "Working with Vaillant, we designed the heat pump solution to consume less power than the level generated by the water flow. We capture energy via the restored water wheel and turbine, transfer it into the plant building, use the heat pump technology to raise the temperature and then use the heat for the buildings. This project sets a great example of how older buildings can be perfectly serviced by technologies based on renewable energies, such as heat pumps."

An exciting and sustainable future

Through many years of fundraising, the new system was finally able to launch. Ellis Scott, CEO at Cromford Mills, who proudly



"We wanted to donate two of Vaillant's flexoTHERM water source heat pumps to the project."

RICHARD BURLEY
Systems and Future Portfolio
Engineer, Vaillant





“It is fantastic to see that the ambition of the water power project team has been realised.”

EILIS SCOTT
Chief Executive Officer,
Cromford Mills

opened the launch event says: “It is fantastic to see that the ambition of the water power project team has been realised. Our site is an integral part of the Derwent Valley Mills World Heritage Site that we are all entrusted with preserving. Being able to combine the natural on-site water power with today’s sustainable technology, generating clean, low-carbon energy to meet the needs of the site, is highly satisfying.”

She concludes: “In many ways the project’s success is a fitting tribute to the genius of Richard Arkwright and his original vision over two centuries ago. We are so grateful to Vaillant for its generous donation of their highly effective flexoTHERM heat pumps and the company’s assistance with bringing the project to a successful conclusion.”

As the nation’s decarbonisation journey continues, Cromford Mills is well placed to benefit from its newly created sustainable energy source. And, with the water wheel and turbine providing a free source of energy to power the new heat pumps, running costs are expected to significantly reduce – a real advantage for Cromford Mills, which is a registered charity, in the current economic climate.



FROM START TO FINISH

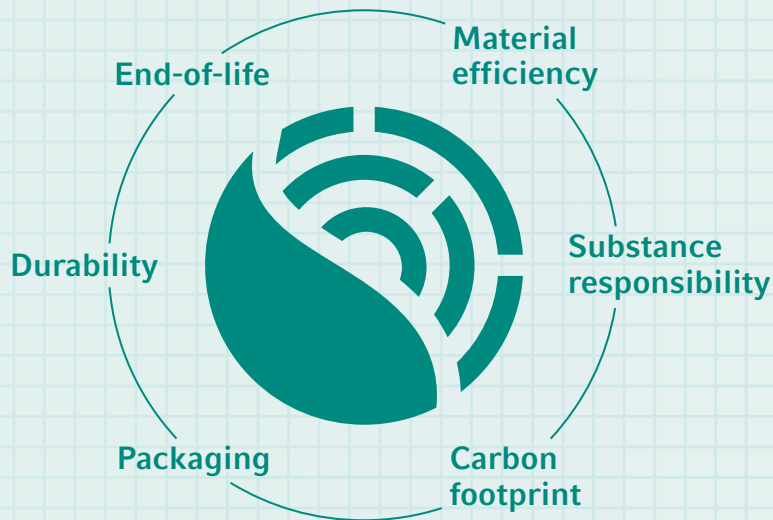
The new strategy for sustainable products – SPARC – establishes binding, clear benchmarks. The targets set are to be achieved by 2030.

Since 2017, the Vaillant Group's 6 Green Rules have ensured that sustainability aspects are considered when new products are developed. The new SPARC strategy builds on this approach. Sustainability is thus evolving from a guideline to a fixed benchmark in development.

"SPARC" stands for "Sustainable Product Architecture" and encompasses six dimensions of product sustainability. These include material efficiency, substance responsibility and a product's carbon footprint. Packaging, durability and end-of-life are also taken into account. This allows for targeted improvements in environmental impact throughout a product's entire life cycle. With SPARC, sustainability criteria such as the recyclability or carbon footprint of a product will be treated on an equal footing with product requirements such as high energy efficiency, technical functionality and low noise emissions.




The new SPARC strategy strengthens sustainability as an integral part of product development.



There are targets for each of the six dimensions set for 2030. For example, new products for the EU market must be at least 85 per cent recyclable. The ratio of recycled materials in steels and plastics is to be gradually increased. At the same time, the carbon footprint of the materials used in the products is to be reduced by 25 per cent compared to that of the respective predecessor model.

SPARC will also bring the upstream supply chain of purchased materials and components into sharper focus. This will require close cooperation with suppliers along the entire value chain.



Mandatory sustainability requirements for materials and components systematically reduce CO₂ emissions along the value chain.

The requirements present new challenges for development teams and suppliers, but at the same time open up scope for innovations such as the use of new materials, alternative construction methods and sustainable solutions in product design. In addition, greater transparency reduces risks in the supply chain.

The example of new packaging designs shows that targeted sustainability requirements also make economic sense. Specific sustainability requirements have made it possible to significantly reduce both material usage and packaging waste while also saving costs.

See also page 26




LU MURANO GLASSWORKS
BY FABIO FORNASIER

Glass manufacturing is extremely energy-intensive.
A family business on Murano combines tradition,
environmental awareness and economic efficiency.



The Murano archipelago is world-famous for its glass art.



Just don't waste energy



Murano is an archipelago north-east of Venice's historic centre in the Venetian Lagoon. Since the Renaissance, it has been of outstanding importance in the world of glass manufacturing. To this day, the craftsmanship of the islands' glassmakers is highly esteemed. Their special techniques, patterns and designs are synonymous with the highest quality and creativity. It is a tradition that has been passed down through generations.

In this industry that is traditionally very energy-intensive, there is a growing sense of environmental awareness and energy efficiency. One example of this is the glass manufacturer LU Murano. Today, the family business, which has been in existence for

several generations, is run by Fabio Fornasier. He came up with the idea of combining old craftsmanship with modern technology, both for ecological and for economic benefit.

With an idea and a system

Fabio Fornasier decided to completely overhaul his company's energy supply. The resulting energy efficiency project is based on a state-of-the-art heat pump system. Two aroTHERM plus heat pumps, each with an output of 15 kilowatts, were connected in cascade for this purpose. However, this is only part of the solution. A heat exchanger is located above one of the company's gas furnaces, where glass is melted at high temperatures. It absorbs the exhaust heat generated during the production



The factory utilises the exhaust heat from the furnaces.

process and feeds the energy to a 2,000-litre buffer storage tank. The stored heat is then used to heat the building. This replaces the fossil fuels that were previously required. Any remaining heating demands of the company are supplied by the heat pumps.

The system also includes a station for hot-water generation and a smaller buffer storage tank for cooling. The hybrid system no longer requires gas but instead uses renewable energy sources. Recovering heat from the furnaces reduces energy consumption and creates a closed energy cycle. The system provides heating in winter, cooling in summer and reliable hot-water supply throughout the year.

Benefits for the environment and the wallet


The conversion brings ecological and economic benefits. The local newspapers have already reported on it. First of all, using exhaust heat from the production process means that LU Murano's CO₂ emissions have dropped significantly. After all, no gas is needed to heat the buildings anymore. The cost savings are also enormous. The monthly heating expenses are no longer around €1,500, as they used to be, but now only approximately €60. The investment in this sustainable solution will therefore pay for itself in the foreseeable future and strengthen the competitiveness of the family business in the long term.



Two aroTHERM plus heat pumps operate in cascade.



Fabio Fornasier's project on Murano is a good example of how tradition and innovation can be combined to achieve significant savings and efficiency gains, even in an energy-intensive industry. It shows that ancient craftsmanship can not only be preserved, but also made sustainable for the future. Heat pumps, heat recovery and storage systems make it possible to reduce energy consumption, protect the environment and achieve economic benefits all at the same time.



LU Murano's designs embody creativity and the highest quality.

