

Lean structure, strong results. The ebm-papst neo team in Dortmund includes Sumiya Islam, Sven Fielsch, Waldemar Wagner, Roxanna Jaehnel, Stefan Bastian (CEO), Paul Bernsdorff, Olf Jännsch, and Laura Ruhrmann (from left). ©Max Slobodda

Cold Air – The New Business Model

13/08/2026 Cool air and artificial intelligence. What connects the two? German experts have given this some thought and, by combining the two, have developed a promising business model that is expected to pay off quickly – for both industry and users.

Whether it's large exhibition halls, shopping malls, office buildings, or sensitive data centers: indoor air must be of good quality and requires individual temperature control. In addition to physics, operating costs and sustainability considerations are also becoming increasingly important in the field of heating, ventilation, and air conditioning (HVAC) systems. Ebm-papst – a company based in southwestern Germany that specializes in electric motors and fans – is one of the global market leaders in its industry and, in 2022, made a definite statement about innovation: the company brought Stefan Bastian on board. Application engineer, IT specialist, industrial career – a man with decades of experience. His mission: as managing director at the helm of the company's own startup, ebm-papst neo – based at the Technology Center in Dortmund in the west of Germany – he and his team are tasked with optimizing cooling systems in buildings for uncompromising efficiency.

50 percent less energy

These veteran climate specialists are familiar with the status quo based on their insights from day-to-day practice: large cooling systems have often evolved over time and are not optimally coordinated with one another. Often, there is a lack of much-needed transparency regarding energy flows, and opportunities for optimization remain untapped. The solution: Bastian and his small but highly capable team of experts have developed the intelligent software NEXAIRA. The coined term stands for “The Next Era of Air Technology” and doubles as the mission statement. The digital ecosystem – which incorporates artificial intelligence – is designed to ensure that ebm-papst building climate control systems equipped with fans and gateways consume up to 50 percent less energy during normal operation. Bastian explains the principle: “Through the intelligent interaction of highly efficient fans and a cloud-based, AI-powered control system, our NEXAIRA platform is able to increase the energy efficiency of ventilation and cooling systems. Operating conditions are analyzed in real time and automatically adjusted so that systems run in a way that meets demand and is energy-efficient. This significantly lowers energy consumption and reduces CO_2 emissions.”

Certified efficiency, guaranteed

In addition to the technology, the complete product range is also being refined. For example, ebm-papst has recently begun offering an energy efficiency guarantee for its smart retrofit projects. The operating partner for this is Great Lakes Insurance SE, a wholly owned subsidiary of the reinsurer Munich Re. This allows building operators to benefit, among other things, from greater planning certainty and easier access to financing.

A key and particularly rewarding area of application for this innovative comprehensive solution is the optimization of cooling systems and fans in data centers. That's because they require an enormous amount of electrical energy and water to cool their equipment. They often still work according to rigid guidelines. Bastian explains: “Here, the NEXAIRA.Systems solution uses AI to optimize the control of existing refrigeration systems in real time and dynamically adjusts operating parameters in response to changes in weather and load.” What sets it apart: As an AI plug-in, NEXAIRA.Systems can be integrated directly into the existing control system, connecting thousands of data points without requiring any additional hardware.

Even competitors benefit

To illustrate this, Stefan Bastian performs a model calculation: “In a 6,600-square-meter data center with 3,000 server racks, our solution can save 900 megawatt-hours of electricity per year – in air conditioning alone.” If one were to calculate the financial benefit in the example, it would result (in Germany) in annual savings of 90,000 to 162,000 euros (assuming an electricity price range for industrial customers of 100 to 180 euros per megawatt-hour). Simply put, thanks to Bastian and his

team, data centers can become not only more cost-effective, but also cooler, smarter, and more environmentally friendly. And from a technical standpoint, the use of artificial intelligence in cooling facilitates the development of new artificial intelligence in data centers.

The ebm-papst neo solution creates a digital twin, which creates a virtual model of a cooling system, incorporating all compressors and pumps. The manufacturer has deliberately chosen not to establish a monopoly on devices. Ebm-papst also incorporates existing third-party products from competitors. This allows all components to be controlled individually and coordinated with one another.

From a global perspective, the company believes innovation will have a tremendous impact: according to estimates, savings of up to 128 terawatt-hours of cooling energy per year could be made worldwide. Bastian draws a comparison: “That is equivalent to the output of 22 nuclear power plants. One of the underlying principles is the so-called model predictive control principle, which the system uses to continuously analyze operating data and provide an optimized control recommendation. In addition, deviations from simulated operations are detected early on, providing warnings of potential malfunctions or unplanned outages. This reduces operating costs, improves operational reliability, and increases the efficiency of energy-intensive infrastructure. In addition, retrofitting existing systems with high-efficiency fans can yield further savings.” And Bastian isn't worried about profitability either. He promises: “The investment in our product often pays for itself within a year.”

Added value through premium climate control

In spring 2026, ebm-papst was honored with the AI Impact Award for its innovation. The award is presented by the German business publication Manager Magazin in collaboration with the management consultancy Porsche Consulting. The interdisciplinary jury was particularly impressed by how data-driven services and innovative strategies can improve the efficiency, durability, and usability of fans. Ebm-papst has recognized how data can be used to create real added value for customers and how to achieve the highest possible efficiency in complex HVAC systems. The focus here is on a high degree of transparency through automated reports, real-time air quality certification, and the shift from rigid to dynamic maintenance schedules. If one were to boil down this technically complex business idea to four words, the result would probably be: “Air as a Service.”

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Jan Boris Wintzenburg

Director Communications and Marketing
Porsche Consulting GmbH
+49 (0) 152 3911 8663
jan_boris.wintzenburg@porsche-consulting.com

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