

Press Release

Process steam from waste heat: How the paper industry reduces energy consumption

[Moringen, Germany, May 18, 2026]

Paper and pulp production is struggling with high energy costs and relies heavily on fossil fuels, resulting in significant carbon emissions. Nevertheless, paper and pulp producers can achieve a considerable reduction in primary energy consumption by recovering waste heat and reusing it as heating steam. Piller Blowers & Compressors offers efficient solutions based on Mechanical Vapor Recompression (MVR) and industrial heat pump technology.

Pulp and paper production involves processes such as black liquor evaporation and paper drying that require large amounts of thermal energy in the form of steam. Waste heat from these and other process steps can be reused using Mechanical Vapor Recompression (MVR). Recovering and reusing process waste heat as heating steam can reduce primary energy demand by up to 75 percent. Operators can reduce energy costs for process steam by up to 90 percent and carbon emissions by up to 60 percent, at efficiency levels of up to 87 percent. Thanks to its simple and seamless integration, Mechanical Vapor Recompression can be applied across a wide range of processes in the paper industry.

Direct and indirect waste heat utilization

Direct waste heat utilization is enabled by the Mechanical Vapor Recompression (MVR) process. This process compresses exhaust steam from the process (vapors) to a higher pressure and temperature so that the same steam can be reused as a heating medium. In case waste heat involves contaminated process steam or liquid media, the energy is transferred indirectly using heat exchangers. These generate live steam at low pressure and temperature. This live steam is then compressed to the required pressure and temperature levels and fed back into the process.

Compressor technology for the paper and pulp industry

Piller Blowers & Compressors provides the paper and pulp sector with solutions for steam compression, industrial heat pumps, and the optimization of steam systems. The VapoLine® product series comprises the VapoFan®, VapoFlex®, and VapoMaxX® compressors, which cover a wide range of application requirements. Paper manufacturers benefit from technologies and machines specifically designed for their respective processes, mass flow rates, required pressure lift, and individual applications.

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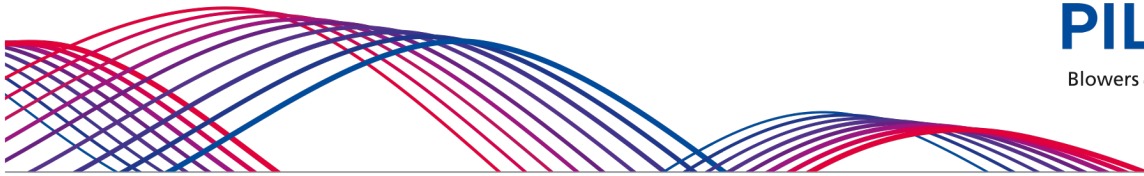


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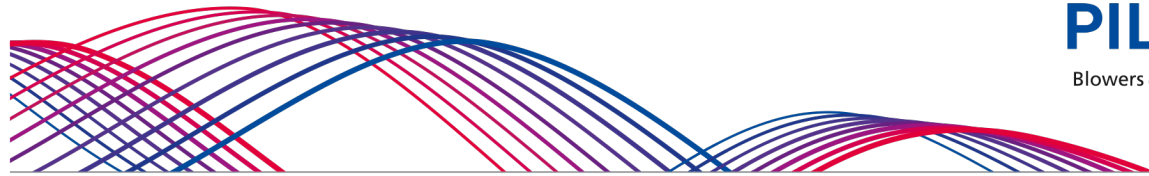
Figure 1: The paper and pulp industry requires large volumes of thermal energy. (© Piller Blowers & Compressors)



Figure 2: Steam is essential for paper production. (© Piller Blowers & Compressors)



Figure 3: The VapoFlex® compressor of the VapoLine® series was designed for a host of MVR applications. (© Piller Blowers & Compressors)



About Piller Blowers & Compressors

Piller Blowers & Compressors GmbH, based in Moringen, Germany, develops, designs and manufactures customized compressors for the process industry. The roots of the family business go back to 1909.

With its customized designs or appropriately configured machines, PILLER provides efficient and economic solutions for customers in many industries, including the food industry, pulp and paper production, the chemical industry, the petrochemical industry, the pharmaceutical industry and industrial wastewater treatment. The company also supports customers on the path to resource-saving production with innovative technology for heat recovery. Compressors for the process industry can achieve a reduction in energy demand of up to 75 percent, up to 60 percent lower carbon emissions and an energy cost reduction of up to 90 percent.

PILLER offers full service, from engineering to project planning to design and production, as well as comprehensive services including commissioning, training, inspection, repair and system optimization. Through continued investment in research and development, PILLER is continually working to further push the limits of the already-high efficiency, performance and long operating times of its machines.

With 528 employees and branches in the US, Singapore, China and Australia, as well as joint ventures in Korea, India and Brazil, PILLER is well positioned internationally today. Group sales amounted to €130 million in 2024.

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