

Schwank Case Study:

Using synergies - Heat recovery for industrial heatings



"We have opted for hybrid-Schwank as it perfectly combines economy with ecology - like our own values do."

Florian Schweiger,
Managing Director



The Project

That tradition and state-of-the-art are not controversial is proven by the Bauer company.

It was originally founded in 1950 as an engine repair shop; now however, the family enterprise with its 230 employees covers four successful product lines: the Service Centre for engines and motor vehicles, the mechanical engineering and technology sector, the BTS GmbH, one of the leading providers of exhaust turbochargers, and the Bauer Industrial Innovation Sector. The company's philosophy is straight forward: from job order and manufacturing to system partner of the industry.

Subjects like sustainable economical operation and energy efficiency are part of Bauer's self-conception. Without economical thinking foreclosing ecological action. This target also played an important part in the heating redevelopment and the installed heat recovery system.

The Task

As with many redevelopment projects, everything started with the insight that the existing heating of the production facilities and warehouses was much too expensive and did not provide the requested factors, namely comfort and heating performance. In the case of Bauer, the old oil heating had become obsolete - and together with it the indirectly fired hot-air heaters. The energy costs were fairly high.

In order to really exploit the entire energy savings potential, Bauer relied on the support of an energy consultant of the KfW [Reconstruction Loan Bank]. The independent energy expert quickly became aware of the fact that an efficient heating system can only be based on infrared technology.

When calling for tenders for the project, a further interesting aspect was added to the planning: to use the hitherto unused energy of the exhaust gas for heating office premises.

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The Implementation

After having analysed the various offers, Bauer decided in favour of Schwank and therefore of a manufacturer with experience and special know-how in heat recovery systems. Already since 1995, Schwank has successfully realised heat recovery systems.

With the actual product hybrid-Schwank, heat was to be recovered from the exhaust gases of the heating system using Schwank tube heaters. The exhaust gases produced in the combustion process are collected in an insulated exhaust gas system and fed to a recuperative stainless steel heat exchanger. This air-water-exchanger outputs the heat energy of the exhaust gases in the form of hot water. The heated water is then directed into a hot water storage cylinder. The latter also supports the redeveloped hot-water heating of the office building. In this way, i.e. using a combined production and office heating, Bauer saves energy costs twice.

The Conclusion

During the decision making phase in favour of hybridSchwank, environmental aspects, ecological action as well as a clear reduction of the consumption values played an essential part.

By combining heat insulation measures and the installation of Schwank tube heaters, Bauer was able to save 650,000 kWh in the facilities per year. The comfort, especially at the frequently open workshop doors, has increased noticeably. In addition to this, the heat recovery saves another 55,000 kWh [max.] in the office premises per year. This results in **savings of 51%** for the production facility areas and of **29%** for the offices during a statistical standard winter.

When having a look at the LCC [Life-Cycle Costs] on the whole, also the factors of maintenance and repair leave a positive mark on the calculation. The result in short, hybrid-Schwank contributes to protecting the environment and saves the user substantial energy costs.



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