

KASAG



Renewable energies
Concepts
Heat exchanger
solutions

Experts for energy recovery

We make waste-heat to your **profit**

Renewable energies for future generations

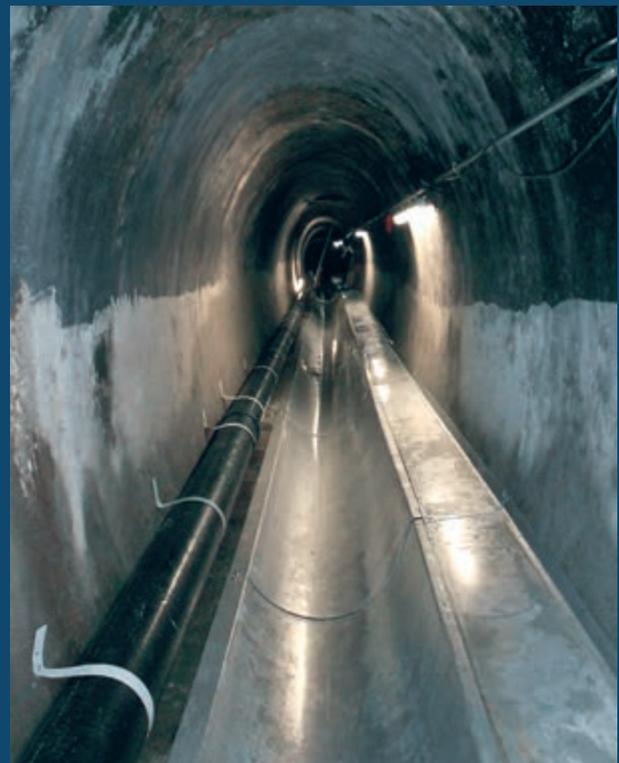
Wasted energy and global warming are harmful to nature and the environment and place our future at risk. You have a significant role to play. You are ensuring sustainability by selecting KASAG Swiss AG as your partner in the conception, design, engineering and construction of heat exchanger equipment for energy recovery from waste heat.

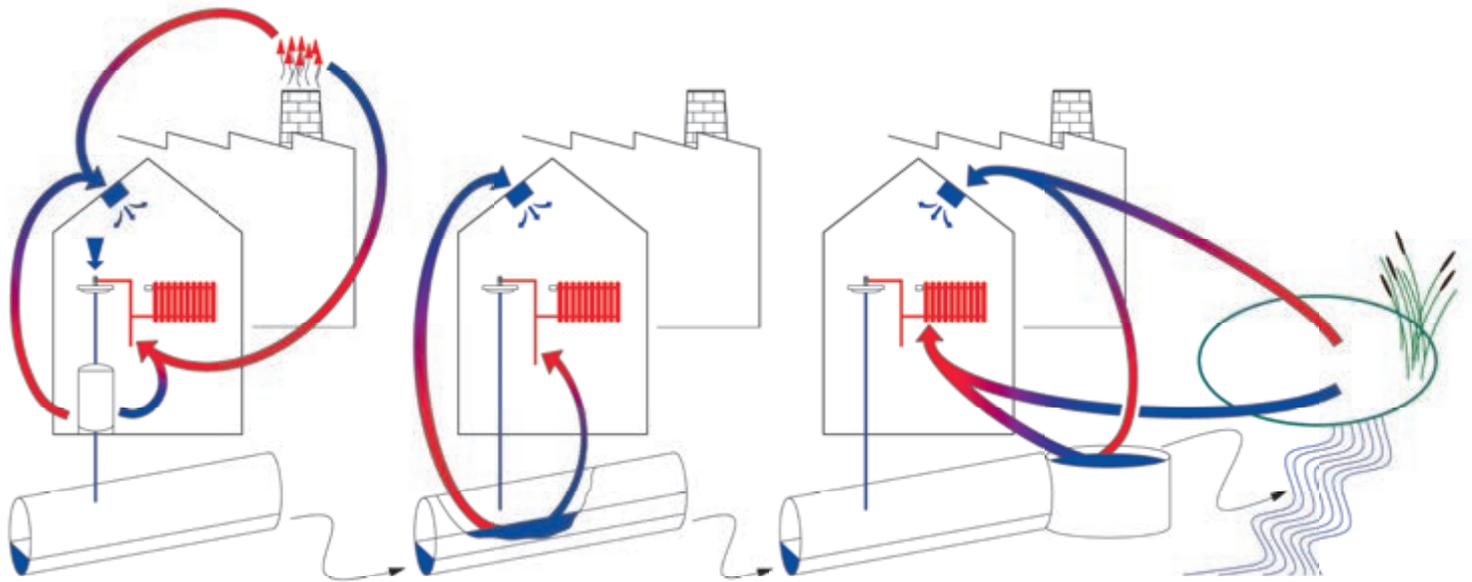
You can contribute to energy recovery with innovative concepts and heat exchanger solutions, by making water, waste water, process fluids and vapour at source in buildings, industry, in the sewage system on the way to the sewage plant and in surface water available for thermal recovery through heat exchange. In addition to their ecological aspects, investments in the field of renewable energy also makes sense economically.

Heat exchangers for clean liquids such as drinking water do not pose any major technical challenge. However, potential energy recovery is usually to be found in liquids and vapours (air saturated with water vapor) which have been contaminated or which contain solids and /or fats. Potential areas of use include multi-family homes,

residential or municipal buildings, hotels, thermal baths, swimming pools as well as a wide range of energy intensive industries, such as foodstuffs, chemicals and pharmaceuticals.

In order for a project for energy recovery from renewable sources to be feasible, a wide range of parameters must be taken into account. KASAG will be glad to draw up a tailor-made concept with an optimal heat engineering design for you – on the basis of your overall system.





All around significant energy potentials

Heat recovery in buildings and industry

The use of a potential energy source at its place of origin is the best way to ensure optimal results. Guaranteeing the heat transfer within the heat exchanger is therefore the deciding criterion, and requires individual solutions. Intermittent waste water flows in buildings are collected in a retention volume and their energy is used for heating and cooling by means of a heat exchanger. Continuous waste water flows and/or process heat requires no retention volume.

Water, waste water, exhaust air (vapour) and industrial process liquid store significant amounts of potential energy, which can be put to use through the application of innovative concepts and heat exchangers specifically adjusted to these requirements. In addition to fluids, vapour also has a very high energy recovery potential compared to normal exhaust air.

Such energy systems can be used both heating and for cooling.

Waste heat use in waste water channels, sewers

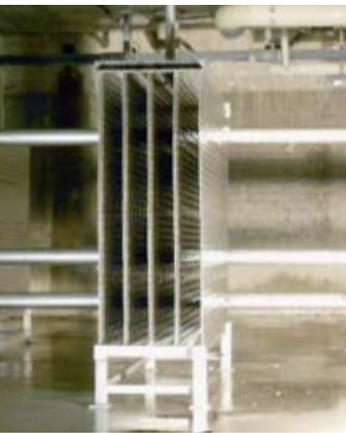
Waste water in sewers, when combined with heat pumps and chillers, forms an ideal source of energy for heating and cooling buildings. Experience has shown that the minimum requirements for such equipment are as follows:

- A waste water flow of approximately 10 l/s
- A waste water temperature level of approximately 10 °C
- An output requirement of 100 kW or above (approximately 50 kW for heating and cooling).

There are a range of possibilities in which this thermal energy can be used as the waste water flows through the sewers to the sewage plant. The waste water can even be used several times in succession as a source of energy. New inflows, confluence in larger collectors or thermal flows from cooling systems have usually a marginal impact on the temperature of the waste water.

Innovative cities have developed energy plans on the basis of which they can determine whether a sewer pipe suitable for energy recovery passes through their vicinity (maximum distance approximately 300 m).

“Clever KASAG concepts and heat exchanger systems for energy recovery at the place of origin, in the sewers on the way to the sewage plant or in surface water allow you to provide both heating and cooling.”



Energy use in sewage plants and from surface water

Sewage plants and surface water have a massive energy potential. At a wastewater treatment plant with a 90 million litre daily waste water capacity, a reduction of 1 °C in the waste water temperature by means of heat exchangers will generate approximately 4.3 MW. The potential of surface water is comparatively even greater.

The water temperatures of surface water and rivers have steadily increased due to man's activity - namely, as a result of inflows from sewage plants. This has a serious impact on fauna and flora. Extracting heat from the treated water at the sewage plant or from surface water and rivers reduces the water temperature, and hence also has a positive effect on the overall ecosystem.

? Do you have any questions?

Should you have any general questions regarding renewable energies, our experts will be glad to assist you::

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 www.kasag.com/en/renewable-energies-systems-plants-heat-exchangers



“Pure gold in the form of energy is flowing through the sewers beneath our feet, and this can be extracted without any physical exertion whatsoever.”

CO₂ reduction, profitability

Water, waste water, surface water and industrial processes store significant amounts of energy, which can be accessed through the use of special heat exchangers. Renewable energy sources of this kind are highly significant. Compared to traditional heating and hot water generation using oil and gas, this technology can reduce CO₂ emissions by up to 60%. As a result of increasing energy prices, investments in de-centralised energy recovery systems also make economic sense.

Pressure Equipment Directive, CE Conformity

Directive 2014 / 68 /EU relating to pressure equipment (the Pressure Equipment Directive, PED) regulates compliance with basic safety requirements for heat exchangers.

CE marking is an administrative logo indicating the free movement of industrial products in accordance with EU directives within the internal European market.

KASAG have all necessary quality management systems and worldwide approvals.



For technical exclusivity worldwide

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