

Waste water as heat source of heat pump

While the heat sources air, water and ground are already well established in the heat pump market for single- and multi-family homes, their application for large industrial heat pumps is rare. A very promising **heat source** is **waste water** (Figure 1). The main sewer strands in all larger towns supply sufficient waste water as source of energy, which can be also used by the retrofit of sewer heat exchangers as heat source for large size heat pumps. The usage is especially economical, with more than 10,000 population equivalents. The waste water strand should have more than 0.8 meters in diameter and the users of heat have to be located in the surrounding area. A maximum distance of 200 meters is given for small heat capacities, whereas the heat pump or the user can be located up to 2 km away from the waste water strand with higher capacities.

The company OCHSNER, as project leader, carried out a **research project on waste water heat recovery**, which was funded by the Climate and Energy Fund as part of the Austrian new energy program 2020. The aim of the research project was to lay the foundations for the implementation of waste heat utilization in Austria and to investigate suitable sites for waste water utilization. The Austrian Energy Agency, the University of Agricultural Sciences, Vienna Energy and Energy Switzerland were also involved in the execution of the research project. Relevant experience was provided by Energy Switzerland as already 80 successful plants are in operation in this country. At least 5% of the heat and cooling demand of any city could be provided with the heat source waste water. The company OCHSNER produces a complete line of industrial heat pumps from 100 to 1,000 kW for use in large buildings and industrial processes (Figure 2).

Amstetten (Figure 3) illustrates once again a future-oriented philosophy with regard to innovative projects for energy savings for the purpose of avoiding climate change. The goal is to become a self-sustained community. ☞

About OCHSNER: The company was founded in 1978 and is one of Europe's foremost heat pump manufacturers and a technology leader. <http://www.ochsner.com> – htiw@ochsner.at

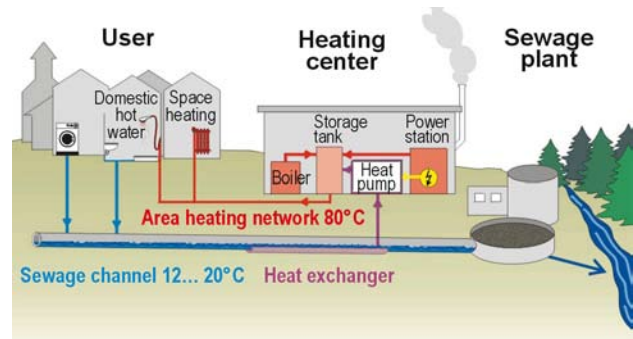


Figure 1. Principle of heat recovery from waste water with heat pump.



Figure 2. The company OCHSNER produces a complete line of industrial heat pumps from 100 to 1000 kW for use in large buildings and industrial processes with screw compressor.



Figure 3. The municipality of Amstetten, as one of the suitable locations, has been the first to realize the concrete implementation. 400 single-family homes can be heated now all over the year with the heat pump.