ecoclime

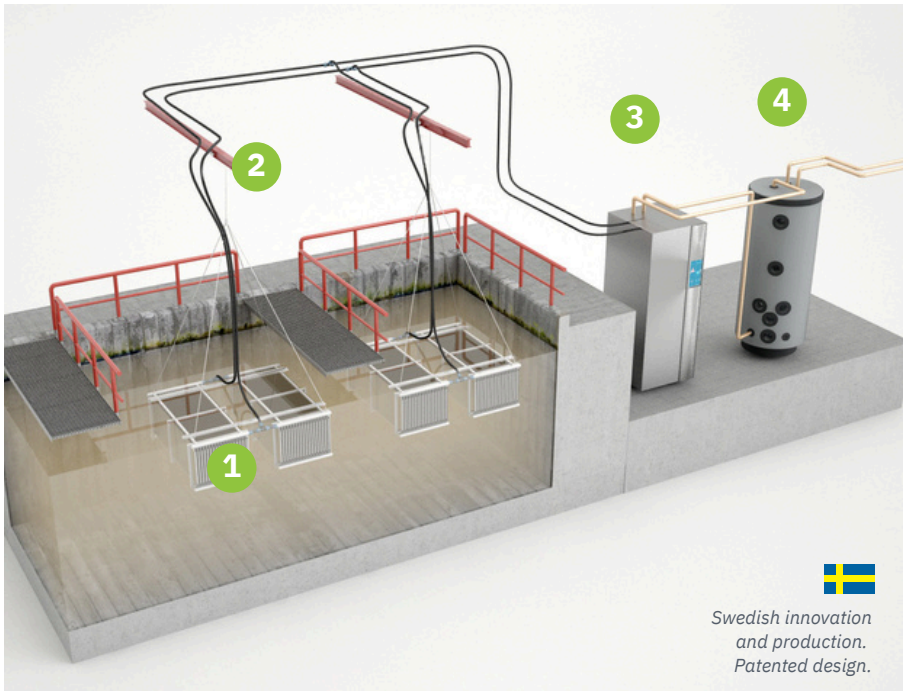
EVERTHERM ARV

The most efficient and reliable solution for heat recovery in wastewater treatment plants

Evertherm ARV is specially developed for energy recovery in harsh and polluted environments. Easy installation, high efficiency and superior operational reliability, as well as no need for costly operation and maintenance measures, makes **Evertherm ARV** the clear choice for heat recovery in wastewater treatment plants.

An energy solution with Evertherm ARV can reduce the amount of purchased energy by more than 75%.

SYSTEM DESCRIPTION



Swedish innovation and production. Patented design.

1 **Evertherm collectors**
Installed in the wastewater.

2 **Flexible installation**
Collectors can be suspended from the ceiling or mounted in a basin via a wall bracket.

3 **Heat pump**
Adapted to the heating needs of the property. The energy is extracted from the wastewater.

4 **Accumulator tank (optional)**
Optimization and smoothing of heat pump operation.

PERFORMANCE

+75%

Reduced amount of purchased energy
More than 75%.

+4

High COP
Thanks to the high energy content in the wastewater.

+10%

High ROI – more than 10% based on the energy cost savings.

TECHNOLOGY & INSTALLATION

+ High output – unique patented design maximizes heat exchange surface.
+ Easy and quick installation – the low weight and compact design make installation easy, without disrupting the process in the plant.
+ Corrosion-free – manufactured from polymeric and stainless steel materials.
+ No need for filters before heating exchanger – can be placed directly in the contaminated liquid.
+ Small amount of brine – provides environmental benefits as well as lower cost and reduced time when filling the system.

OPERATION

+ Low operating costs – no wastewater needs to be pumped through the system.
+ High operational reliability – a stable solution that does not require any special operating or maintenance measures.
+ Scalable system – the solution can be easily adapted to increased power requirements.
+ Easy inspection & cleaning – if necessary, the system can easily be visually inspected and cleaned.

PROJECT: SAXNÄS WASTEWATER TREATMENT PLANT

Reduced electricity use for heating by nearly 80%

Saxnäs wastewater treatment plant currently serves approximately 130 PE and has a heated area of 80 m². The waste-water treatment plant was previously heated with direct electric heating equivalent to 36,700 kWh for a normal year, which has now been replaced with renewable energy directly from the wastewater.

The installation

The property has been converted from direct-acting electric heating to being heated with a 14 kW heat pump that supplies heat to a hydronic unit heater in the process hall and a fan coil in the office.

The energy is collected via the Evertherm collector, which is located directly in the secondary clarifier basin of the wastewater treatment plant.

The installation was commissioned on 26 May 2014 and has been running without interruption or maintenance since then. No cleaning of the collector has been done. Measurements shows that the collector delivers the same recovery power throughout the year.

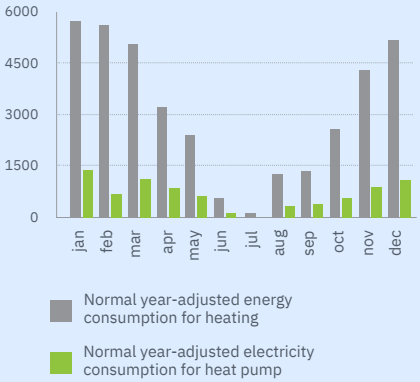
Results

In the first year of operation, purchased electricity decreased from 36,700 kWh to only 7,700 kWh as a result of the transition, which corresponds to a 79% reduction in electricity consumption.

"After two years of operation, electricity consumption for heating has been reduced by a quarter, based on recovered energy from the wastewater. This has also been achieved without any operational disruptions, which is impressive!"

Sören Hagenvald, Vilhelmina Municipality

Normal year-adjusted electricity to versus consumption in 2015



Normal year-adjusted energy consumption 36,700 kWh/year