

WASTEWATER HEAT RECOVERY

Case study : Industrial wastewater in Dunkirk (France)



Settling ponds of Tank service Saint Pol sur mer (France, 59) facility.

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MWh/months of recovered heat from wastewater

Obox I supplies on average 70 kW of heat to the water heating system by recovering it from industrial wastewater as it runs down the drain.

This is more than 50% of all recoverable heat from incoming wastewater (21,600 m³ at 29 °C) transferred to 12 °C cold water.

Tank Service is a internal washing of tank trucks facility in Saint Pol sur mer near Dunkirk, in France. The company uses high pressure hot water to clean the interior of tank trucks in between shipments.

This is a very energy demanding service, yet a great part of this heat goes down the drain as the wastewater goes to the sewer.

☹️ **“We used to discard 21,600 m³ of 29 °C wastewater a year”**

😊 **“We now continuously output 70 kW out of this heat source”**

– Jean-Luc DECORTE, Process manager at Tank service

Valve and sensors controller

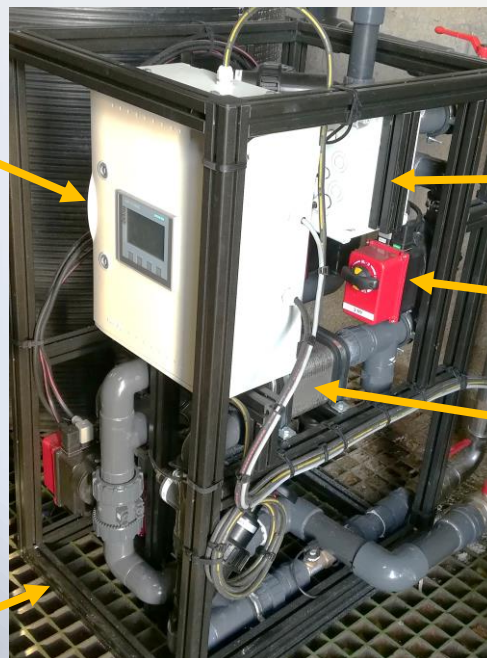
GPRS communication module

Motorized PVC valves

Nickel brased plate heat exchanger

Self-supporting structure

← **Obox I**
as installed in Dunkirk





Problem

Tank service is a very heat demanding facility. Hot water needed to clean the tank trucks requires 255 MWh of energy every year.

Tank service management contacted Evolsys to recover as much as possible of that heat.



Manufacturing

EHTech designed Obox I, a system that recaptures 50% of this heat. It was manufactured between August and October 2017.



Installation

Obox I has been set up over a week by Acte énergies in October 2018. Initial tuning and observation period extended until January 2019.

JUNE

JULY

AUG.

SEPT.

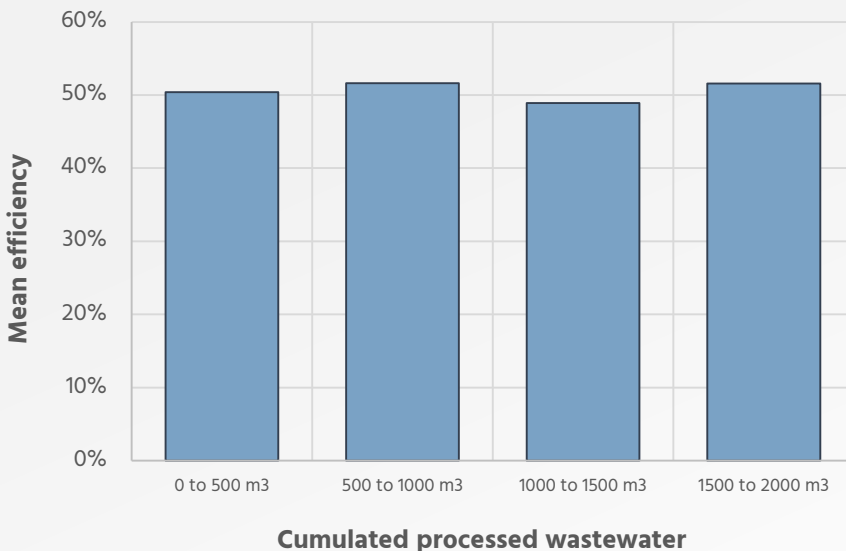
OCT.

Sticky wastewater...



Hot wastewater is collected with solvated and colloidal pollutants (fat, sand, dust) and larger debris using ground level drains **A**. It flows then through an oil separator sludge trap **B** then a flocculator **C**.

... yet steady efficiency



Obox I has a flowrate -controlled backflush cleaning. Whenever the flowrate of wastewater Obox I processes gets too low because of accumulated pollutants, it enter "cleaning" mode. While in cleaning mode, high pressure cold water enters the wastewater circuit backwards all the way to the drain.

Thanks to this auto-cleaning, as of February 15th 2019, after 2000 m3 of processed wastewater, efficiency is steady to its factory value.



Prime contractor
Ennetières-en-Weppes (59)



Installer
Wingles (62)



Manufacturer
Toulouse (31)