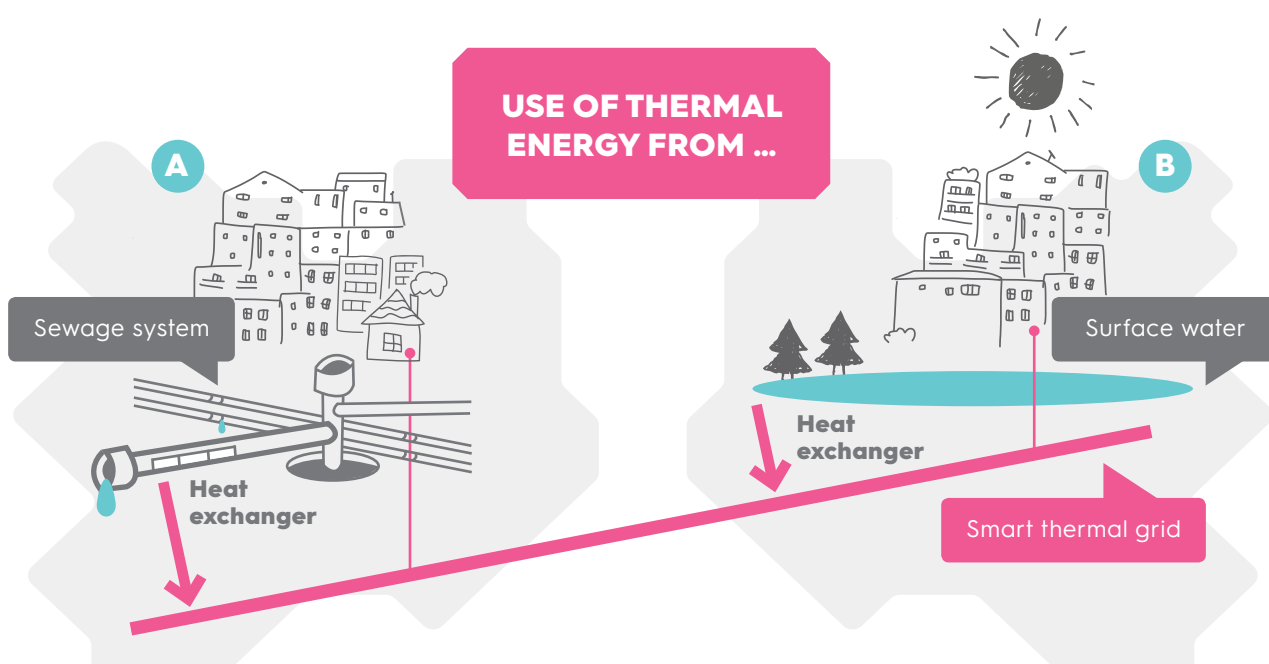


Thermal energy from waste streams and surface water heat-cold collector

Rotterdam

Smart thermal grid



A. In summer, the temperature of sewage water is about 19 degrees celsius, and is usually pumped to a pumping station. The aim is to recover the warmth from the water, use it directly for other purposes or store it in the thermal grid. The cold sewage water is pumped to the pumping station.

B. Since buildings use more heat than cold there is a need for heat. This heat is recovered from surface water, which - especially in summer - is particularly warm. The heat can be stored in the thermal grid during summer and can be used during wintertime.

Main partners involved:



City of Rotterdam



FACTSHEET R2 + R3

Thermal energy from waste streams and surface water heat-cold collector



How does it work?

A. A heat exchanger is put in the sewage system to recover the heat of the water. The cold water is pumped to a pumping station. The warmth can be used directly or be stored in geothermal heat-cold storage (RI). The total length of the heat exchanger is assumed to be 50 metres.

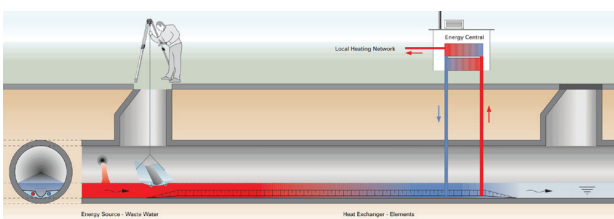
B. The smart thermal grid is located just north of the Zuiderpark, which has a lot of ponds, waterways and ditches. After removing the larger parts of pollution in the water, the surface water is led through a heat exchanger (separate from the sewage system) to recover the heat from the water. The warmth can be used directly or can be stored in the geothermal heat-cold storage (RI).

Estimated impacts

This smart solution can be transferred to other parts of the city where sewage replacement will take place. As the sewage system is owned by the city of Rotterdam and also most public buildings are owned by the city, the citizens of Rotterdam will profit from lower TCO (total costs of ownership).

Replication potential

Replication is possible in all cities, but the details of the system depend very strongly on the specifications of the city and the governance goals of city in question.



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