

Heat Recovery from Sewage

Localization of viable Plant Sites

Objectives

The use of heat from sewage needs an interdisciplinary approach. To lift it from the pilot stage to a level of an acknowledged alternative of heat supply, a method is necessary to identify high potential sites. Grid operators, investors and urban planners should be able to locate economically interesting sites quickly.

The objective is to widen the application field of the technology. The approach does not prefer single heat recovery solutions.

Approach

Depending on the available data it is necessary to identify the dry weather flow in each pipe section. Pipe sections with a sewage flow more than 10 l/s are in focus.

Next, bigger dwelling sites, commercial buildings, planned urban quarters etc. within a distance of 90 m to the pre-selected pipes are located. At least, the heat demand and potential are matched, assuming that:

- ΔT 2 Kelvin can be extracted,
- the annual coefficient of the heatpump operating is around 4, and
- the actual and future heat demand of the building is known (base and peak demand).



Figure 2: Matching heat demand and potential

The last step is to verify the assumed energy potential by measurements during a dry weather period. Based on both facts, the measured data within the sewage and the heat demand, it is possible to plan a plant thoroughly. Not only mere waste water and mixed water pipes are interesting but also waste water pumping stations with a big storage volume can be used .

Results

Beside rising the awareness with the help of the discussions to develop the method, the overview map with high potential sites is the most important result.

With the help of the localization, urban planners, investors and the sewage grid operator are now able to consider the heat source in their planning and to communicate with each other.

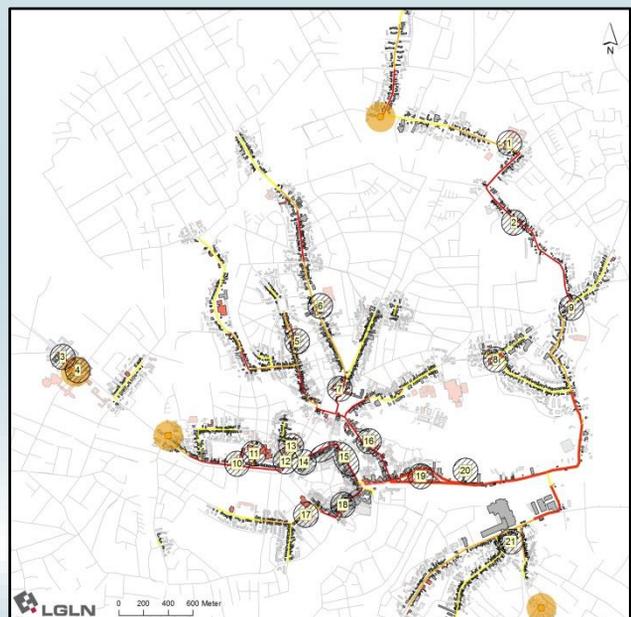


Figure 3: Mapping of high potential sites for heat recovery in Oldenburg (Lower Saxony)

For further information please visit:

<http://energie-im-abwasser.de/>

<http://www.denewa.eu>

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