

Research project for energy efficiency in municipal wastewater treatment plants in Hungary

Summary

Under the project, as a first step the potential for energy saving and production at Hungarian wastewater treatment plants should be determined with an evaluation scheme adapted to local conditions. This is done by using the existing knowledge of the German consortium and in close cooperation with the Hungarian colleagues. Once, the holistic analysis of the energy situation is done three representative municipal sewage treatment plants are selected. These are analyzed in detail with respect to energy consumption and (potentially) possible energy production. Based on these evaluations possible ways to increase the energy efficiency of these plants will be developed in coordination with the Hungarian project partners. By the representativeness of the selected facilities it is ensured that the recommendations can be transferred to a variety of other wastewater treatment plants. The plant operators will obtain practically relevant Implementation notes by this research project.

The project may be divided into the following main points:

- presentation of the energy situation of German and Baden-Württemberg sewage plants
- procurement, inspection, preparation (translation) and evaluation of energy-related data of Hungarian wastewater treatment plants (where available)
- assessing the energy potential of Hungarian wastewater treatment plants; Suggesting measures for increasing energy efficiency (energy conservation and energy production)
- instructions for the energetic evaluation of new buildings
- Working through the differences of German, non-European and Hungarian wastewater treatment plants in terms of energy "performance" and developing an Assessment Scheme that is adapted to local conditions for a general rating (kWh / a), an energetic optimum and a rough estimate of the existing optimization potential in MWh / a and € / yr. The different types of sludge stabilization are of particular importance, as the ventilation systems used and the level of plant automation.
- implementation of energy checks and energy analyzes for the three representative Hungarian wastewater treatment plants with on-site visits by experienced engineers

- notes on the portability of this procedure to other countries in the Danube region
- documentation of project results for further possible processing and publication