INP Reference

Feasibility study for wastewater heat pump at Kaditz wastewater treatment plant

LOCATION: Dresden, Germany

SERVICES: Solution development / Feasibility studies

INDUSTRY BRANCH/TYPE OF PLANT: Green Energy

CLIENT: DREWAG – a SachsenEnergie company

ACTIVITY PERIOD: 2024-2025

POINTS OF CONTACT



Michael Ohmer
Leiter Energie- und WärmeVersorgung
INP Deutschland GmbH
Werkstraße 5
67354 Römerberg
Deutschland
Tel. +49 6232 6869-0
michael.ohmer@inp-e.com
www.inp-e.com

Tasks

DREWAG is investigating the construction of a large heat pump system with a heating capacity of approx. 12 MWth at its Dresden-Kaditz site for feeding heat into Dresden‘s central district heating network. Treated wastewater from two new secondary clarification tanks at the central sewage treatment plant will serve as a renewable heat source. The aim of the project is to contribute to the zero emission goals in district heating generation. The study serves to evaluate this innovative heat supply concept from a technical, regulatory, and economic perspective, as well as expansions of the plant.

Project description

INP was ordered for a comprehensive feasibility study on the construction of a large scale heat pump to utilize waste heat from a wastewaster treatment plant. The aim was to analyze the available wastewater data, design the heat pump taking into account various manufacturer solutions, and develop a site-specific installation concept. In addition, the integration into the district heating network and the approvability of the plant were also included.

INP Services

INP provided the following services:

- Analysis of treated effluent flows and temperature profiles
- Preparation of an energy balance for the large scale heat pump system
- Design and dimensioning of the heat pump system, including all auxiliary systems
- Comparison and evaluation of commercially available heat pump models
- Site evaluation and installation planning for the new building
- Creation of a P&ID and a single-line diagram
- Planning for connection to the treated water pipeline and the district heating network

INP Reference

- Consideration and evaluation of regulatory requirements
- Cost estimation
- Development of a modular, expandable system concept
- Final study report