

### Large heat pump system for district heating generation

**LOCATION:** Mannheim, Germany

**SYSTEM/TECHNOLOGY:** Large heat pump/Planning E-technology

**SERVICES:** Project management, Basic-engineering and pre-engineering

**INDUSTRY BRANCH/TYPE OF PLANT:** Green Energy, Infrastructure Projects, Large Plants

**CLIENT:** Großkraftwerk Mannheim AG

**ACTIVITY PERIOD:** 2022

#### Project description

The „energy and heat transition“ in Germany is being actively promoted at GKM Mannheim. As one of the first implemented and funded projects, the large-scale heat pump in the Mannheim district heating network was planned and executed as part of a large-scale government project. Here, district heating is generated in an environmentally friendly manner by means of electrically operated large heat pump systems. Environmental heat (here: Rhine water) is available as a heat source. The district heating network return temperature is raised from approx. 60°C to a supply temperature of approx. 90°C to 130°C. The planned heat pump module has a heating capacity of approx. 20 MWth. Only 7 MWel of electricity is required for operation. The remaining power will be taken from the environment.

INP was commissioned to plan and tender the electrical connection of the large-scale heatpump.

#### INP Services

INP has prepared the technical specification for the electrical own consumption. Furthermore, a network analysis (short circuit and load flow calculation) was prepared.

The planning of the electrical connection of the large heat pump to the 10 kV existing grid includes the following essential areas:

- Medium voltage switchgear
- Low voltage switchgear
- Power transformers
- Rectifier and inverter switchgear
- Wiring of the components
- Feeding of unit 8 of the GKM

#### POINTS OF CONTACT



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