

Feasibility study for the renewal of a refrigeration system

LOCATION: Rüsselsheim, Germany

SERVICES: As-built status and data recording, Solution development / Feasibility studies

INDUSTRY BRANCH/TYPE OF PLANT: Green Energy

CLIENT: Opel Automobile GmbH

ACTIVITY PERIOD: 2025

Project description

As part of the renewal of the refrigeration supply at the production plant in Rüsselsheim, INP got the order for this feasibility study. The aim of the study was to develop four technical variants of future refrigeration systems for the production plant and compare them in regard to economic efficiency, operational reliability, energy efficiency, space availability and safety-related requirements (e.g., incident management, occupational safety, fire protection). The study covered a modulation cooling capacity up to 5MW designed to cover base-load, part-load, and peak-load conditions. The results provide the basis to find the decision for implementation a future-proof solution.

INP developed a robust decision framework for the future cooling generation of the painting facility at the Rüsselsheim production plant. First, the existing system was systematically documented, current load profiles were evaluated, and future demand was estimated. Based on this, four technical variants were developed:

- a) refurbishment of the existing system
- b) construction of a new building on the same site as the old system
- c) construction of a new building in an adjoining room
- d) an innovative system with ice storage and a new CHP unit.

INP Services

INP provided the following services:

- On-site inspection and evaluation of existing documentation
- Determination of cooling demand for base, part-load, and peak load operation
- Development and comparison of four technical concept variants
- Preparation of preliminary layout plans for installation, connection, and integration into existing infrastructure
- Estimation of investment and operating costs for each variant
- Initial project scheduling for implementation of the variants

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

INP Reference

- Integration of requirements for safety, maintenance, fire protection, and approval concepts
- Recommendation of a technically and economically suitable preferred variant
- Preparation of a report for the client 's internal decision making