

# Project Fact Sheet

**Project Title**      **Simulation of an AI-controlled Low-Ex network for operational optimization (SILENO)**

**Keywords**            Low Temperature District Heating and Cooling, 5GDHC, Sustainable Industrial Energy Supply, AI-assisted Optimization, Transferability

## Project Details

<b>Project Start</b>	2023	<b>Duration</b>	3 Years
<b>Grant Scheme</b>	*)		
<b>Funding Authority</b>	*)	<b>Project ID</b>	*)
<b>Project Budget</b>	*)		
<b>Project Leader</b>	Prof. Dr.-Ing. Tobias Schrag		
<b>Contact Person</b>	David Schmitt		

**Project Partners**    AUDI AG

## Description

This research project aims to explore the next frontier in district heating and cooling (DHC) systems: the 5th Generation District Heating and Cooling (5GDHC). Set against the backdrop of pressing climate change challenges and the global push towards renewable energy sources, this study seeks to address the critical need for innovative and sustainable energy solutions.

The project's main goal is to conduct an in-depth analysis, optimization, and development of AI-controlled strategies for 5GDHC systems, with a specific focus on the IN-Campus energy system. By leveraging advanced technological approaches and sustainable practices, the research endeavours to significantly reduce reliance on fossil fuels for heating and cooling, thereby contributing to the broader environmental objectives outlined in the Paris Climate Agreement.

This investigation will encompass a comprehensive characterization of the 5GDHC system implemented in Ingolstadt, including planning processes, technical properties, and system configuration analysis. Through this meticulous examination, the project aims to not only enhance the efficiency and sustainability of the IN-Campus energy system but also set a pioneering example for industrial 5GDHC systems worldwide.

In essence, the research project represents a vital step forward in the heat transition journey, promising to pave the way for a more sustainable and renewable energy future.