

BEST PRACTICE



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A solar district heating system for “Am Ackermannbogen” neighbourhood

Munich, Germany - 1.5 million inhabitants

Solar thermal energy - sustainable buildings – energy efficiency

Munich, the capital of the Bavaria state in South-East Germany, is one of the richest and most prosperous cities in Europe. Munich also hosts one of the largest heating networks in Europe. It has set very ambitious climate objectives, one of them being switching to 100% renewable district heating by 2040. A solar heating system was built between 2005 and 2007 in the district “Am Ackermannbogen”.

Project in a Nutshell

A set of buildings in the north-western part of “Am Ackermannbogen” was chosen for the solar district heating project: 4 blocks of buildings and 8 houses (30 400 m² floor area). Solar collectors were installed on 3 of these blocks. They are not only used as energy collectors but also as roof cladding. The system includes a hill-shaped 6.000 m³ water storage tank, that was covered and integrated into the landscape, and a power plant, to manage the heat supply for residential buildings and district heating is coupled in when solar energy is not sufficient. An innovative heat pump makes this system highly efficient. The implementation was managed by the city of Munich; its municipal utility company, Stadtwerke München GmbH, took care of planning, building and operating the energy system, while 5 building promoters were in charge of the residential buildings’ construction and sale. The company Solites, and the Bavarian Center for applied energy research acted as scientific partners. The project was mostly financed by the German Federal Ministry of the Environment, Nature Conservation, Building and Nuclear Safety, and the city of Munich, with support from Stadtwerke München and building promoters.

Impact & Next steps

All in all, solar energy supplies 45% of the district’s heat. This solar district heating system provides hot water all year round and heat in winter for the neighbourhood. In summer, it also heats the storage tank up to 90°C until fall and can thus provide the heat supply until January, when the city’s district heating system takes over.

Replicability: Challenges & Success Factors

The success of the project relied also on the number of actors that were involved, coming from the public and the private sector. Their participation led to the creation of new organisational tools for harmonious cooperation.

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