

Microgrid Stadtwerke Lehen, Salzburg Austria

Responsible organization

SOLID

Date of last information update

October 2012

Model description

It was first applied in 2010 after many years of preparation, planning, simulation and discussion, by the utility Salzburg AG, City of Salzburg (mainly SIR, Salzburg institute for urban planning and living), two social housing companies, one commercial housing company.

It is linked to the following initiatives: refurbishing of the district Lehen, Concerto project Stadtwerke Lehen, Salzburg regional housing subsidies, Klimafonds funding for large scale solar thermal systems, programme on detailed monitoring of user behaviour.

The solar thermal system of over 2000 m² collector area has to supply the newly erected housing and commercial buildings at minimum 30% solar fraction of annual heat demand. A buffer storage of 200 m³ is used. Additional heat comes from heat pump of 170 kW nominal thermal power in shoulder seasons and Salzburg district heating in winter.

Each customer has a transfer station for DHW and room heating in his apartment or office with heat meter. For non-solar heat the customers pay same as other DH customers of Salzburg AG. The over 30% of solar heat are not charged as the solar system was financed with the construction of the buildings and is included in the rent.

Roles of the different actors

The actors involved are: utility Salzburg AG, City of Salzburg (mainly SIR, Salzburg institute for urban planning and living), two social housing companies and one commercial housing company

Salzburg AG was the previous owner of the premises and wanted to be involved in the future innovative energy system of the new quarter Stadtwerke Lehen. There was also a strong focus on social integration of the very international local population which was planned together with SIR and the housing companies. The housing companies built the houses. The solar thermal systems are popular, in order to get higher housing subsidies for the solar system. The Salzburg AG erected the solar system, which was later sold to the housing companies, who own the panels and the solar net via contract. Salzburg AG is operating the whole heating system including solar system, storage, heat pump and heat distribution.

Intensive discussions were done in the planning phase and now Salzburg AG interacts directly with each customer.

Swot analysis

Strengths	<ul style="list-style-type: none"> • High solar fraction of over 30% without seasonal heat storage • Over 30% of heat cost reduction for end users • High CO₂-savings by approx. 700-800 MWh of solar heat per year
Weaknesses	<ul style="list-style-type: none"> • Long preparation phase with many stakeholders involved • Many different funding schemes involved, including complex social housing subsidies • High share of subsidies for invest in solar plant
Opportunities	<ul style="list-style-type: none"> • Can be a role model for other new constructed districts in Europe • Integration of large scale heat pump and solar thermal might show interesting opportunities, also in combination with fluctuating electricity prices • Results will be internationally disseminated through Concerto project • Integration of 200 m³ buffer storage as architectural element at central place is role model both for existing and new built districts
Threats	<ul style="list-style-type: none"> • This model requires continuous interaction and optimization between utility, planners, end users and others
Improvements/recommendations/lessons learned	Housing companies are interested in such “full service offers” from utilities

Replication potential of the model

Certain innovative aspects like high solar fraction, micro grid, large storage and heat pump can be adopted and replicated in other projects. The complete model has a very comprehensive approach and can only be replicated with adaptations to each local situation.

Both heating system and buildings need to be new built or totally refurbished.

Links to web site and/or documents for more detailed information

<http://concerto.eu/concerto/concerto-sites-a-projects/sites-con-sites/sites-con-sites-search-by-name/sites-green-solar-cities-salzburg.html>
www.stadtwerk-sonne.at





