

Smart City Lab - IKB-Smart-District



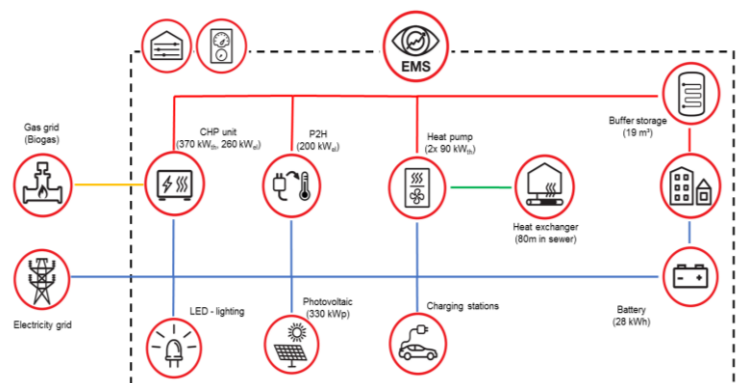
Innsbruck's energy provider IKB implemented a series of projects for the increase of energy efficiency and renewable energies in the framework of SINFONIA. This includes the installation of technologies such as Combined Heat and Power (CHP), heat pumps, waste heat recovery, battery storage, thermal storage photovoltaic, power to heat and grid automation. In order to communicate this rather complex topics to a broader audience partner IKB developed a showroom - the Smart City Lab.

The IKB Smart City Lab is a hub for innovative energy and infrastructure solutions with a showroom for the general public.

The major aim in the IKB-Smart-District was to use synergy effects to enable a higher share of renewable energies and increases system stability, to the hybrid grid. Therefore there was the set-up of the energy management system (EMS). The EMS gives directions to the central building control system. The EMS defines the operation schedule based on the parameters:

- ▶ Temperature
- ▶ Solar radiation
- ▶ Electricity spot market price

The IKB Smart City Lab illustrates how electricity and heating grids can be networked locally. The graphic on the right shows all technologies built in the IKB-Smart-District with EMS.



vision

The aim of the Smart City Lab is to bring complex technical energy installations to a broader audience and to provide a space for innovative thinking especially for younger generations.

addressed stakeholder groups

- ▶ general public
- ▶ energy consumers
- ▶ experts
- ▶ municipality

outreach

80 guided tours with about 1.000 visitors take place in the Smart City Lab per year.

Résumé

Challenges

- ▶ The IKB Smart City Lab was originally planned to be more extended. But major investment costs for heat pipes and legal requirements to cross a public street resulted in delay and difficulties, so that the hybrid grid was adapted. It is planned to be extended it in the future.
- ▶ Subcontractors for the realisation of the IKB Smart City Lab had to be selected by means of a tender procedure. In order to make a satisfying nomination, the criteria for awarding the contract had to be defined very carefully.



Electricity sector:

- Electricity is a very flexible energy source (convertible)
- Increasing demand for flexibility (renewable energy)
- Electricity storages are complex and therefore expensive



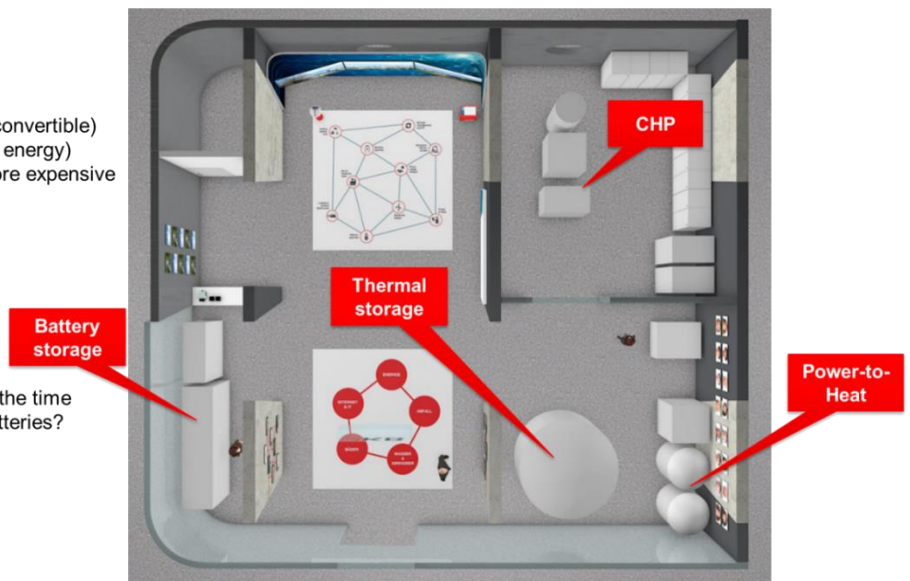
Heating sector:

- Heating systems are slow
- Comparatively low demand for flexibility
- Heat storage is simple and inexpensive



Transportation sector:

- Private cars are not in use for 90 to 95 % of the time
- Transition to electromobility → use of the batteries?



Recommendations

- ▶ Consider possible delays and difficulties early in advance.
- ▶ Demonstrate the legal options and pick out the problems.
- ▶ Adapt planned measures according to the budget or discuss national or other funding sources with relevant partners.
- ▶ Design tenders for subcontractors with the utmost care.
- ▶ Get more information [here](#) !

„The IKB-Smart-City Lab is a solution approach to a holistic view on the energy system. Through the use of synergy effects the share of renewable energies shall rise and a higher stability to the energy electricity grid is given.“

Sophia Neuner,
IKB

