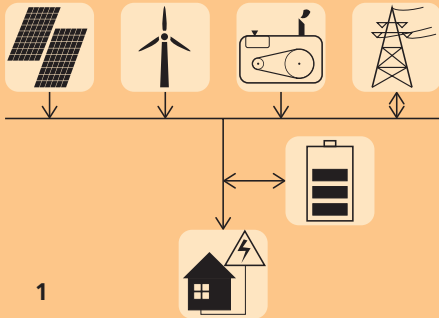




FRAUNHOFER INSTITUTE FOR CHEMICAL TECHNOLOGY ICT



1

- 1 Basic concept of a microgrid with different energy sources.
- 2 Graphic representation of state of charge of an off-grid battery application over a year.



2

SIMULATION OF MICROGRIDS BATTERY STORAGE DESIGN

Stationary battery storage devices are finding increasing application in energy supply. With our expertise we provide our customers with consultancy services and support them in the planning and implementation of a storage-based energy supply.

Using modeling and simulation of microgrids, we assist customers in selecting the best technology and the suitable capacity and power of battery storage devices for renewable energy. The technical and economic context, and specific conditions relating to the site of operation, are taken into account. A microgrid can be understood as a localized power grid (electric / thermal), consisting of energy suppliers, consumers and storage systems. It can be set up as an off-grid or grid-connected energy supply system.

In the design of renewable energy sources the planned site of operation plays an essential role. With the help of individual simulations based on climate data and load profiles, the technology selection,

dimensioning and operation of energy storage devices and energy sources can be optimized for practical use. Forecasting, feasibility studies and techno-economic analyses are also carried out.

Our offer

- Technology-specific modeling of energy sources, storage systems and consumers
- Application-oriented selection and sizing of battery storage technologies
- Location-specific simulation of energy sources, taking account of weather data
- Techno-economic analysis and sensitivity analysis
- Power range from a few watts through to kilowatt and megawatt applications

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