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Renewable Energy Balancing for residential Homes

This project is focusing on “Renewable Energy Balancing for residential Homes”. Cost for electric energy is continuously rising. Therefore a positive trend towards self-consumption of decentralized-produced energy can be observed. Renewable sources like photovoltaic or wind are occurring in rather fluctuating manners. To increase the self-consumption storage solutions are needed. Batteries meet the specifications a storage system needs for a residential home. Batteries are small and powerful.

The scope of this project is to find out:

“How much battery capacity is needed for a residential home and how much self-consumption can be achieved with it?”

A MS-Excel-based program-tool has been developed to guide the design process. The main requirement for this tool was to be easy-to-use. A particularity is the user-definable load and generation profiles. Self-consumption can be increased to encouraging high levels, whenever the renewable energy generation is both frequent and sufficient.

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