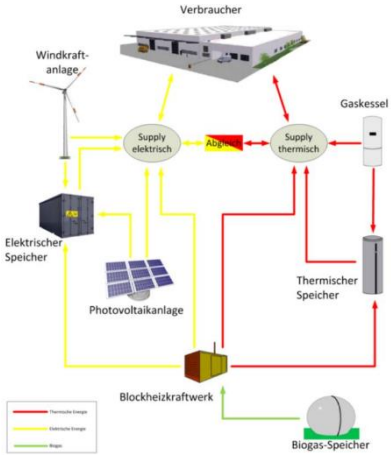
Technical Project (Master) or Bachelor Thesis

Premdek downscaling - Functional for use

Brief description of Premdek
In the 'Premdek' project, a virtual power plant is being planned and simulated at system level. The interactions between decentralized energy generators, storage systems and consumers are being investigated and optimized.

Project description:
The aim of the project is to transfer the existing Premdek technology into a compact, scaled-down version that retains all the essential functions for planning virtual power plants. Critical system components are to be identified and specifically reduced in order to develop a functional, scalable model that is easy to handle.



Project Tasks

- System analysis: Analysing the current Premdek system architecture and identifying the critical core components that are essential for functionality.
- Concept development: Development of a downscaling concept that enables a reduction in system complexity without compromising essential performance.
- Modelling and prototyping: Implementation of the scalable model in a suitable simulation environment (Anylogic).
- Validation: Performance of functional tests and validation of the usability of the scaled-down system under realistic operating conditions.
- Optimisation and documentation: Fine-tuning of the system parameters to ensure optimum performance and creation of detailed project documentation and a practical user manual.

Field of Study

- SES (for Bachelor thesis)
- Mechanical Engineering (Master project)

Qualification

- Sound knowledge of system architectures and scaling strategies
- Experience in simulation (Anylogic)
- Analytical skills to identify and optimize critical system components
- Practice-orientated implementation of technical solutions in industrial applications
- Java skills

Contact

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