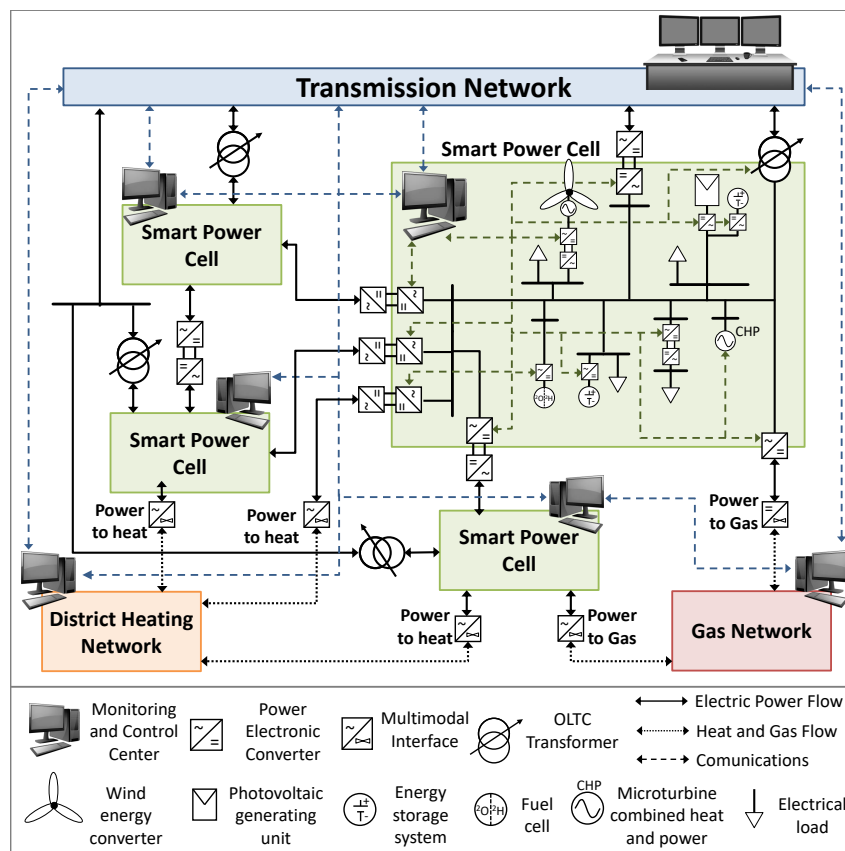


Master Project

Modeling of multimodal technologies for the planning of smart power cells

Background A Smart Power Cells (SPC) is defined as a controllable subsection of the power system where electric distributed generators, storage devices and conventional, as well as flexible loads, are interconnected via medium and low voltage AC-DC networks and power-electronics-based multimodal interfaces. Therefore, a SPC is capable to generate, distribute and consume electricity locally (inside of the cell), and simultaneously exchange power and services with the main transmission grid, neighboring cells or multimodal power-to-gas (P2G) or power-to-heat (P2H) interfaces.



Smart power cell concept

For this master project it is proposed to study and define mathematical simulation models of P2H and P2G multimodal technologies for solving the SPD planning problem.

Tasks

- Identify and describe characteristics of the SPC planning problem focusing on the influence of multimodal technologies.
- Study, choose and code mathematical models and simulation strategies for multimodal technologies in the planning of SPC.
- Define a present a feasible study case for testint the models.

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