OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG | EIT | FAKULTÄT FÜR ELEKTROTECHNIK UND INFORMATIONSTECHNIK | LENA

Master's/Bachelor's Thesis

for Ms./Mr. xx xx (123456)

Topic: Transactive Energy and Power Dispatching for a Microgrid

Task:

Numerous changes have been occurring in the electrical power system (EPS), both in the energy generation and distribution. Among these transformations, the configuration of the system in the format of microgrids (MG) has been the focus of research worldwide. They increase the flexibility and security of the EPS, as generation occurs close to the loads, reducing losses, and enhancing the energy supply in a given area. Energy management in MG becomes a viable solution to minimize curtailment. Furthermore, there is a way to monetize the energy in this operation between MG and the main grid. Transactive energy consists of a reliable, affordable, and sustainable system that seeks to maximize the benefits of all agents in the process. This concept has been adopted in MG in some countries, expanding business models in the energy sector.

This Master's thesis aims to develop a model for the optimal power dispatch in a MG, ensuring power balance, and with the opportunity of increase its revenue.

The study has to cover the following points:

- Literature research on microgrid, power dispatch and transactive energy
- Development of an optimized energy management method that may be profitable for the MG
- Implementation of the method with an algorithm for simulation with different scenarios
- Assessment of the results
- Documentation of the results

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