Development of Dynamic Microgrid Model in DigSilent PowerFactory

Project expectations

- To build an electric dynamic model of a laboratory test microgrid in DigSilent PowerFactory software.

- To read and understand technical documentation of the existing laboratory equipment.

- To identify appropriate models for each component of the laboratory microgrid. Tu use already developed models where appropriate or to develop new models if necessary.

- To run experiments in the microgid lab with the aim to validate and assess accuracy of the adopted Modelica models.

- Comparison of the simulated results against the laboratory experiments or reference simulation models.

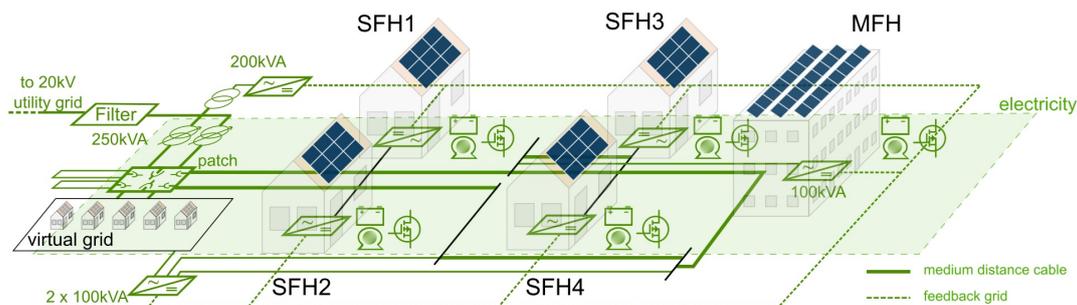- To publish a paper at an international conference.

Figure 1: Electric model of the laboratory microgrid

Requirements

- Electrical engineering background with knowledge of dynamic modeling of electric grid.

- A good understanding of differential equations and numerical integration methods.

- Previous experience with Modelica is preferable.

- Affinity to programming and structural thinking.

- Good team-player and an attitude to learn and explore new approaches.

References

- DigSilent Power Factory User Guide

- Hassan Bevrani Bruno Francois Toshifumi Ise, "Microgrid Dynamics and Control"

Contact

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