Student project proposal

Project title: Developing a methodology for estimating the capability curve of wind farms

Project type □ MSc thesis □ BA semester project □ MSc semester project

Project responsible and e-mail
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Project description
The environmental concerns as well as recent developments in renewable energy technologies are leading to a paradigm shift in the electric power systems towards replacing the fossil fuel and nuclear generations with renewable generations. In this context, this project aims at developing a methodology for estimating the power capability curve of a wind farm at its connection point to the transmission grid. The owners of wind farms require this curve to quantify/estimate the size of their bidding to the energy market. The student will firstly carry out a literature survey on this topic. Then, he/she will complete the methodology previously developed by Mohsen Kalantar. Afterwards, he/she will implement this methodology in Matlab. Finally, he/she will apply its code on a test system to validate their code.

Tasks of the student
- Preparation of a literature survey on the abovementioned project.
- Completing the available methodology.
- Implementation of the methodology in Matlab.
- Validate the algorithm on a test system.

Requirements
- Matlab
- Linear optimization