

Master/Bachelor Project/Thesis

Industrial load modeling considering the weather related parameters

Introduction The goal of German government is to integrate 80% renewable energy resource (RES), predominantly solar and wind energy, by 2050. Weather forecast and condition affect the power generation planning and dispatching schedule. To optimize power generation within a grid with high volatile RES, capability of loads to adjust their demand per request through demand side management (DSM) programs or demand response (DR) is highly foreseeable, which industries with high demands can play major role.

Weather condition correlates with power demand at beverage plants. Such correlation can be modeled to forecast the demand in the beverage plants and accordingly implement DSM/DR programs to adjust the demand to RES forecast and planning the operation of fuel burning plants.

Tasks: Modeling the demand in a beverage plant considering weather related parameters in python including:

- Literature review on the methods and available tools of load forecasting
- Modeling a Grey/Black box model of the beverage plant power demand
- Validation and analysis
- *Comparing with common load modeling techniques

Requirements:

- Base knowledge of python or similar programming language
- Interest in modeling
- Power system background is preferred
- Basic knowledge on data science, visualization, and analysis techniques

Nasratullah Mohseni, M1090, mohseni@iat.uni-bremen.de