

Prediction of energy load profiles is an important topic in Smart Grid technologies. Accurate forecasts can lead to reduced costs and decreased dependency on commercial power suppliers by adapting to prices on energy market, efficient utilisation of solar and wind energy and sophisticated load scheduling. This thesis compares various statistical and machine learning models and their ability to forecast load profile for an entire day divided into 48 half-hour intervals. Additionally, we examine various preprocessing methods and their influence on the accuracy of the models. We also compare a variety of imputation methods that are designed to reconstruct missing observation commonly present in energy consumption data.