The goal is to develop and validate an innovative methodology to select the hyper parameters and features of existing forecasting models such as Recurrent Neural Network (RNN), Gradient Boosting Regression (GBR), Random Forests (RF), ..., for forecasting energy generation and consumption of microgrids. The features are based on weather forecasts and time-series of observations of the variables of interest. The hyper parameters are the number of neurons, layers, the activation function, the maximal depth, the number of estimators, etc. Each case study requires an optimal features and hyper parameters combination. An innovative automated machine learning based approach would bring time saving and performance benefits.

Microgrids are small electrical power systems made of consumption devices, generations devices (renewable or not), and storage systems. It is of paramount importance to have reliable forecasts of all random variables influencing a microgrid in order to achieve a safe and economically efficient operation.

**Requirements**

The candidate must be familiar with or have a deep interest in big data and machine learning. A bachelor degree in engineering, computer science, data science, or mathematics is required along with a deep interest in the energy sector.