

Develop a machine learning model (supervised) to forecast the day ahead electricity price in Spain. The target is therefore the spot electricity price. You need to submit the Jupyter notebook used to create the model and a report (pdf) explaining how it was built and its performance.

For obtaining the target data, access to [the ESIOS-REE webpage](#) and download historical spot electricity prices. Possible input data can also be searched in this website.

Some general guidelines for developing your model are detailed below.

- 1) Understand your data set. Use descriptive statistics and data visualization tools.
- 2) Prepare your dataset. Clean it and transform it, if needed.
- 3) Think about possible features selection for your model. They could include, but are not limited to: type of day (weekend, workday), electricity price-24 h, electricity price-48 h, electricity price-7 days, wind generation, nuclear generation, electrical demand, gas price-24 h, gas price-48 h, gas price -7 days
- 4) Split the dataset into training and test.
- 5) Train your model. For instance, use a multiple regression.
- 6) Evaluate your model, adjust hyperparameters and retrain it if needed (repeat from step 2 or 3).
- 7) Validate your model using regression metrics like RMSE, MAE.

3) temperature (extreme heat or cold) should be considered - <https://www.constellation.com/energy-101/energy-choice/how-the-market-affects-pricing.html>