**Phase 2 : Electricity Price Prediction**

**1.Introduction:**

The energy sector has suffered signiﬁcant restructuring that has increased the complexity of the electricity markets. In Europe, as well as in other countries worldwide, the electricity market’s deregulation has led to new competitive positions among its participants, namely generators, distributors, and consumers, as well as insecurity about the future evolution of electricity markets.

**2.Challenges of Electricity Price**

since the deregulation in electricity markets, price forecasting has become an extremely valuable tool. Electricity market participants make extensive use of price prediction techniques; an accurate

price forecast for an electricity market has a decisive impact on the bidding strategies by producers or consumers and on the price negotiations of a bilateral contract. In both pool markets and bilateral

contracts, predicting next-day electricity prices or prices for the next several months (or even years) is of the foremost importance to allow electric companies to adjust their daily bids or monthly/yearly

schedules for contracts. As energy service companies buy electricity from the pool and from bilateral contracts to sell it to their clients, they seek good short-term and long-term price forecast information to maximize their own benefits

**3. Definition and classification**

TheCleverProgrammer has an article on **Electricity Price Prediction with Machine Learning**. The article provides a case study where you need to predict the daily price of electricity based on the daily consumption of heavy machinery used by businesses. [The article uses Python to walk you through the task of electricity price prediction with machine learning](https://thecleverprogrammer.com/2021/11/15/electricity-price-prediction-with-machine-learning/)

1. Towards Data Science has a series of articles on **Forecasting Electricity Prices with Artificial Neuronal Networks**. [The series aims to give you a comprehensive guide on how to make ANN-based electricity price predictions so that you can use it in your own scenarios 2](https://towardsdatascience.com/forecasting-electricity-prices-with-artificial-neuronal-networks-part-1-e210409b5f84).
2. Emerald Insight has an article on **Forecasting Electricity Prices with Machine Learning: Predictor Comparison and Information Fusion-Based Sensitivity Analysis**. [The paper aims at comparing different predictors stemming from supply-side (solar and wind power generation), demand-side, fuel-related, and economic influences 3](https://www.emerald.com/insight/content/doi/10.1108/IJESM-01-2020-0001/full/html).

**4.Conclusion:**

Arxiv.org has a paper on **Electricity Price Prediction for Energy Storage System Arbitrage: A Hybrid Model Based on Wavelet and LSTM Networks**. [The paper proposes a two-stage electricity price forecast scheme to predict electricity price spike in the first stage and continuous price in the second stage for improving prediction accuracy 4](https://arxiv.org/pdf/2305.00362.pdf)

**Dataset for our project:**

https://takeoffprojects.com/project-details/electricity-price-forecasting-for-cloud-computing-using-an-enhanced-machine-learning-model--10840