

ELECTRICITY PRICES PREDICTION

Building a project for electricity price prediction involves several steps, including loading and preprocessing the dataset. Here, I'll outline a general approach to this process using Python and some common libraries like Pandas and numpy.

Import Required Libraries:

Start by importing the necessary Python libraries.

```
In [2]: import pandas as pd
```

```
In [3]: import numpy as np
```

Load the Dataset:

Load the electricity price dataset into a Pandas DataFrame.

```
In [7]: print(dataset.head())
```

	DateTime	Holiday	HolidayFlag	DayOfWeek	WeekOfYear	Day	Month	\
0	1/11/2011 0:00	None	0	1	44	1	11	
1	1/11/2011 0:30	None	0	1	44	1	11	
2	1/11/2011 1:00	None	0	1	44	1	11	
3	1/11/2011 1:30	None	0	1	44	1	11	
4	1/11/2011 2:00	None	0	1	44	1	11	

	Year	PeriodOfDay	ForecastWindProduction	SystemLoadEA	SMPEA	\
0	2011	0	315.31	3388.77	49.26	
1	2011	1	321.8	3196.66	49.26	
2	2011	2	328.57	3060.71	49.1	
3	2011	3	335.6	2945.56	48.04	
4	2011	4	342.9	2849.34	33.75	

	ORKTemperature	ORKWindspeed	CO2Intensity	ActualWindProduction	SystemLoadEP2	\
0	6	9.3	600.71	356	3159.6	
1	6	11.1	605.42	317	2973.01	
2	5	11.1	589.97	311	2834	
3	6	9.3	585.94	313	2725.99	
4	6	11.1	571.52	346	2655.64	

	SMPEP2
0	54.32
1	54.23
2	54.23
3	53.47
4	39.87

Data Exploration:

It's important to understand our data. Check for missing values, explore the structure of the dataset, and look at some sample records.

```
print(dataset.head()) # Display the first few rows  
print(dataset.info()) # Check for missing values
```

Data Preprocessing:

Depending on the dataset, you might need to perform various preprocessing steps, including:

- Handling missing values: We can remove or impute missing values.
- Feature selection: Choose relevant features for prediction.
- Encoding categorical variables: Convert categorical data into numerical form.
- Feature scaling: Normalise or standardise numerical features.

Split the Dataset:

Split our dataset into training and testing subsets to evaluate our model's performance. A common split is 80% for training and 20% for testing.

Model Building:

Select a machine learning or deep learning model for electricity price prediction, train it on the training data, and evaluate it on the testing data. We might choose regression models, time series models, or neural networks based on the nature of your data.

Model Evaluation:

Assess the model's performance using appropriate metrics (e.g., Mean Absolute Error, Root Mean Squared Error) and make any necessary improvements.