

Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management

DATE	28-02-2026
TEAM ID	LTVIP2026TMIDS90651
PROJECT NAME	Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management
MAXIMUM MARKS	2 MARKS

6.2 - Data Collection:

ML depends heavily on data, without data, a machine can't learn. It is the most crucial aspect that makes algorithm training possible. In Machine Learning projects, we need a training data set. It is the actual data set used to train the model for performing various actions.

➤ **Download dataset /create dataset:**

The dataset for wind energy prediction is to be collected. The dataset which is considered here will have the environmental conditions. You can collect datasets from different open sources like kaggle.com, data.gov, UCI machine learning repository etc.

Step 1: Open Kaggle.com in Google.



Step 2: Click on the link and select Sign in with google.

Step 3: In the search bar “Weather-Based Prediction of Wind Turbine Energy Output: A Next-Generation Approach to Renewable Energy Management” to see the dataset.

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The screenshot shows a Kaggle dataset page titled "Wind Power Generation Data - Forecasting". At the top, there's a user profile icon, the name "MUBASHIR RAHIM", and a note "UPDATED 2 YEARS AGO". To the right are buttons for "Code" (with a count of 65), "Download" (with a download icon), and a more options menu. Below the title is a sub-header "Wind Energy Dataset from 4 different locations" and a small thumbnail image of wind turbines at sunset.

Below the header, there are navigation links: "Data Card" (underlined), "Code (11)", "Discussion (1)", and "Suggestions (0)".

About Dataset

This dataset is a unique compilation of field-based meteorological observations and wind power generation data, collected directly from one of our company's operational sites. The dataset represents a detailed hourly record, starting from January 2, 2017. This rich dataset provides real-world insights into the interplay between various weather conditions and wind energy production.

Context and Inspiration: The dataset was conceived out of the necessity to understand the dynamic relationship between meteorological variables and their impact on wind power generation. By collecting data directly from the field and the wind turbine installations, we aim to provide a comprehensive and authentic dataset that can be instrumental for industry-specific research, operational optimization, and academic purposes.

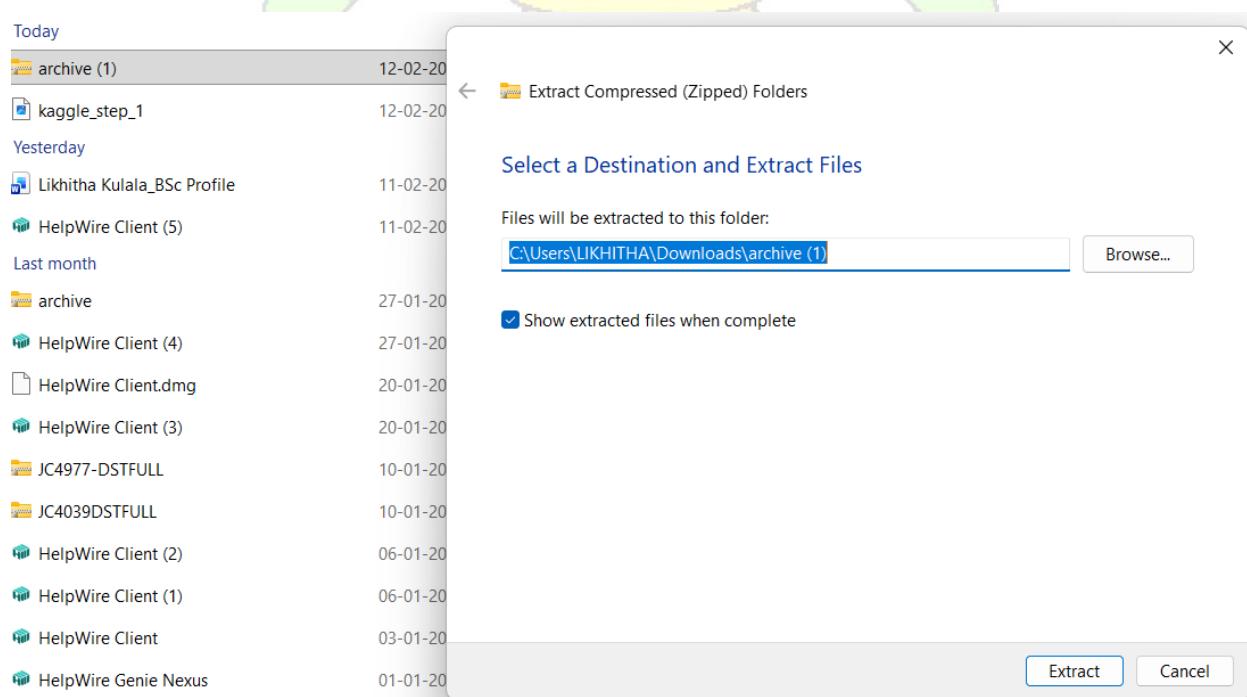
Usability: 10.00
License: CC0: Public Domain
Expected update frequency: Never
Tags:

Step 4: Click the download option to download the dataset.

Step 5: Click on Download dataset as zip (3MB).

Step 6: Open the downloaded file.

Step 7: Unzip the file.



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Step 8: Use the XL sheet which you have used in the project.

Name	Date modified	Type	Size
▼ Today			
Location1	12-02-2026 15:20	Microsoft Excel Co...	2,643 KB
Location2	12-02-2026 15:20	Microsoft Excel Co...	2,647 KB
Location3	12-02-2026 15:20	Microsoft Excel Co...	2,633 KB
Location4	12-02-2026 15:20	Microsoft Excel Co...	2,638 KB
readme	12-02-2026 15:20	Text Document	2 KB

