LITERATURE SURVEY

A wind turbine transforms the mechanical energy of wind into electrical energy. A turbine takes the kinetic energy of a moving fluid, air in this case, and converts it to a rotary motion. As wind moves past the blades of a wind turbine, it moves or rotates the blades. These blades turn a generator.[1]

The regression tree method predicts wind turbine energy capture with two to three times more accuracy than the industry-standard power curve method and may be more useful for predictions of energy capture at sites that experience different conditions than the test site.[2]

The dataset represents the input data on which the article Bayesian CNN-BiLSTM and Vine-GMCM Based Probabilistic Forecasting of Hour-Ahead Wind Farm Power Outputs, is based. The data consist of a two-year hourly time series of measured wind speed and direction, air density, and production of two wind farms (WTs) in Croatia (Bruška and Jelinak). In addition to the two listed WTs, measurements of two nearby WTs (Glunca and Zelengrad) are also attached in training files (these WPPs are not directly analyzed in the article).[3]

As well as predicting the response of a single wind turbine, regression trees could be used to predict energy produced by multiple turbines at a wind plant. The regression tree could be trained using observations of inflow conditions, turbine availability, and power produced by individual turbines.[4]

REFERENCE:

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