

# Predicting wind power generation capacity

How to predict wind power output?

The prediction of wind power output is part of the basic work of power grid dispatching and energy distribution. At present, the output power prediction is mainly obtained by fitting and regressing the historical data. The medium- and long-term power prediction results exhibit large deviations due to the uncertainty of wind power generation.

# How to forecast wind power generation?

According to different modeling methods, wind power generation forecasting can be divided into physical methods, statistical methods, artificial intelligence methods, and deep learning methods.

# What is wind power prediction?

Wind power prediction involves applying state-of-the-art algorithms to the field of wind power generationso that wind power generation can be better connected to the electricity grid, and key technologies have developed rapidly.

# How can a prediction model for wind power be improved?

These methods have a complex structure and too many parameter adjustments for each method, resulting in a long calculation time that should be improved in future works. (D) The prediction models for wind power can be established using cross-validation combined with grid search to improve their accuracy and reliability.

#### What data should be used for wind power prediction?

In previous wind power prediction studies,most researchers used past meteorological datafor evaluation. However,we were able to obtain more data, such as satellite data, future meteorological data, etc., due to the advanced information techniques.

### How was wind power estimated?

Wind power was estimated using ANN,CNN,RNN,and LSTM methodsusing meteorological and turbine characteristic data. Figure 6 represents a flowchart of the intended prediction model.



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