

# DLZP Wind Prediction Model

## Background

Client is interested in improving their Wind Generation Forecasting, this project was to assist the client in evaluation of their current capabilities and working with them to improve their forecasting accuracy.

The key steps and deliverables for the client and DLZP Group.

- Develop a Wind Generation Model that can accurately predict the wind for an area around the wind farm.
- Develop a Generation Prediction Model that will ingest the Wind Prediction to accurately predict the actual power generation of a wind turbine or wind turbine farm.

Some Interesting data sets that we may be able to access to help with the forecasting.

NEXTRAD <https://registry.opendata.aws/noaa-nexrad/>

NREL Wind Integration Data <https://registry.opendata.aws/nrel-pds-wtk/#usageexamples>

NREL Data Sets <https://www.nrel.gov/research/data-tools-alpha.html>

Partner Opportunities with NREL

<https://www.labpartnering.org/lab-technologies/048ea3ef-cd28-4767-a91e-abd401cfe981>

<https://www.labpartnering.org/lab-technologies/345b5ef4-36ff-48f6-ad8c-8117e7a06ae9>

Community Earth System Model Large Ensemble (CESM LENS)

<https://registry.opendata.aws/ncar-cesm-lens/>

NOAA Global Historical Climatology Network Daily (GHCN-D) <https://registry.opendata.aws/noaa-ghcn/>

ECMWF ERA5 Reanalysis <https://registry.opendata.aws/ecmwf-era5/>

Hourly Load Demand Response US DOE <https://catalog.data.gov/dataset/demand-response>

General Information on Energy Supply - US DOE

[https://catalog.data.gov/organization/735d0118-b2a7-4246-a0e3-608b0fa8d1ec?vocab\\_category\\_all=Energy+Supply](https://catalog.data.gov/organization/735d0118-b2a7-4246-a0e3-608b0fa8d1ec?vocab_category_all=Energy+Supply)

General Information on Energy Demand - US DOE

[https://catalog.data.gov/organization/735d0118-b2a7-4246-a0e3-608b0fa8d1ec?vocab\\_category\\_all=Energy+Supply&vocab\\_category\\_all=Energy+Demand](https://catalog.data.gov/organization/735d0118-b2a7-4246-a0e3-608b0fa8d1ec?vocab_category_all=Energy+Supply&vocab_category_all=Energy+Demand)

NOAA Datasets <https://www.ncdc.noaa.gov/data-access/model-data/model-datasets>

Data on Electricity Generation

<https://www.eia.gov/beta/electricity/data/browser/#/topic/1?agg=2,0,1&fuel=vtvv&geo=g&sec=g&freq=M&start=200101&end=201710&ctype=linechart&ltype=pin&maptype=0&rse=0&pin=>

<https://www.eia.gov/opendata/>

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Last update: **2022/03/21 12:04**

