

Solar generation forecasting [utilities]



Business Objective

- To help electricity grid management by providing forecasts of demand and generation of solar power using past weather trends and weather forecasts.
- To reduce imbalances between demand and generation



Benefit

- The solution covers the forecast of demand and generation of solar power at hourly level which provides balance and economic opportunity to integrate larger shares of renewable energy sources in power grid.



Expected Outputs

- Predict the demand and generation of solar power at hourly level using real time weather forecasts.

Data Used

- Weather data
- Customers meter data
- Real time weather data taken from 3rd party weather data provider

Design

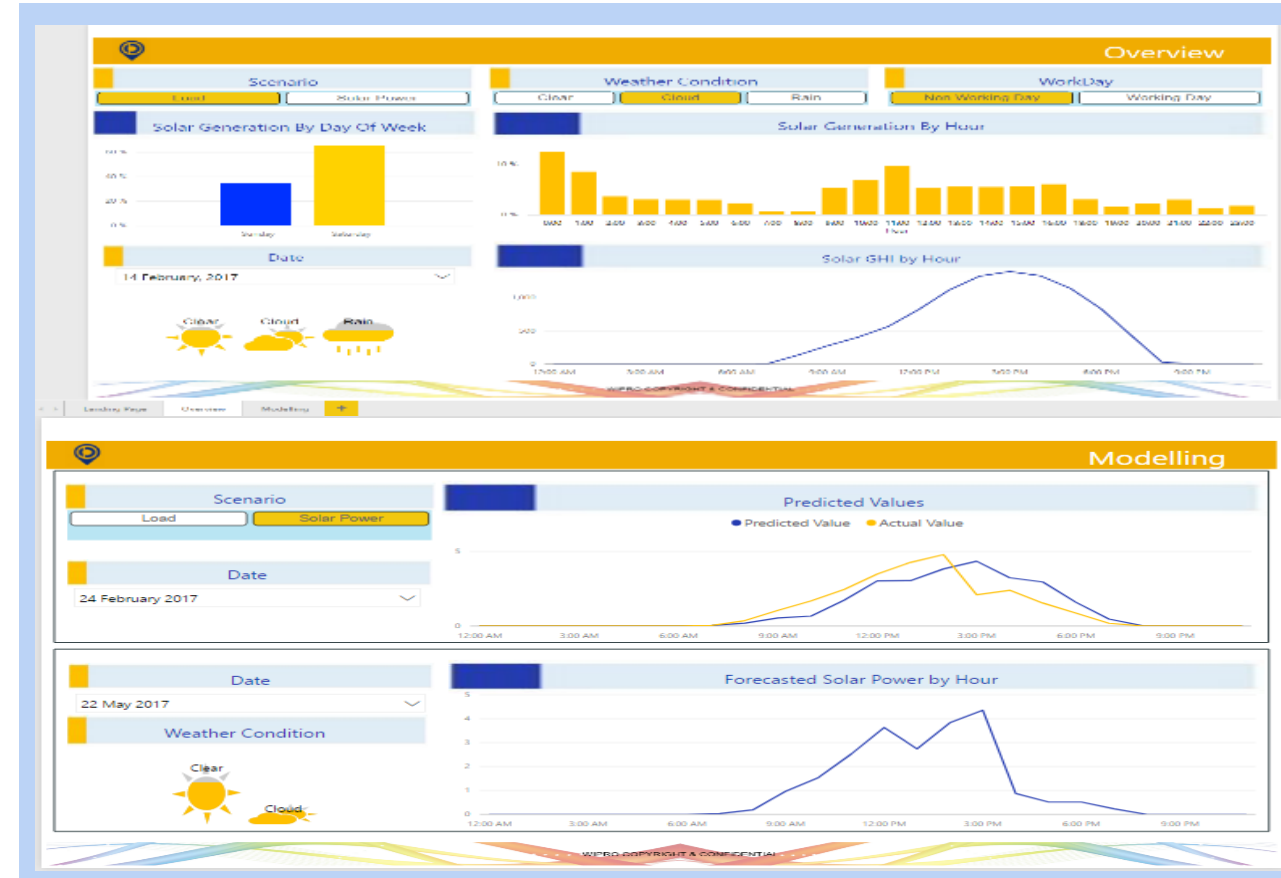
- Building a quantile regression forest model to forecast the demand and generation.
- Forecasting solar power generation value for future dates using the weather information fetched from 3rd party API on real time.

Output

- Forecasted values of demand of solar power using real time weather data.
- Impact analysis framework for forecasting.

Benefits

- Better energy consumption planning
- Optimal assurance of grid stability
- Mitigation of balancing power costs
- Improved profits
- Future visibility of solar power generation



Solar Generation Forecasting