Wind Energy

Emin Akdag[1], Zarina Oflaz[2]
[1]*Institution, City, Country, email address, ORCID: KTO Karatay University-Turkey-emin.akdag@ogrenci.karatay.edu.tr-0000-0003-1366-7413*
[2*]*Institution, City, Country, email address, ORCID: KTO Karatay University -Turkey-zarina.oflaz@karatay.edu.tr-0000-0003-3234-3879*

Wind energy is a type of renewable energy that converts the kinetic energy of the air into electricity via wind turbines. As a result of air currents, the wind begins to carry kinetic energy, and wind power plants generate electricity by turning turbines with this wind power. At the current rate of consumption, it is estimated that the world's oil reserves will run out in 48 years, coal reserves in 216 years, and natural gas reserves in 47 years. Consequently, nations around the globe are turning to renewable energy sources. Wind energy has disadvantages as well as advantages. One of the disadvantages is that in order for the wind turbine to generate electricity, the wind must blow at the optimum speed range. When the wind blows at a speed above or below this range the turbine will not operate, and the efficiency of the wind power plants will decrease. This research aims to analyze real wind data, estimate real-time production at the optimal level by applying models to it, and save time by identifying which parameters can produce optimal results.

Keywords: *data analysis, random forest model, renewable energy, wind energy*