

## Wind Power Assessment for Turkey and Evaluation by APLUS Code

**Authors :** Ibrahim H. Kilic, A. B. Tugrul

**Abstract :** Energy is a fundamental component in economic development and energy consumption is an index of prosperity and the standard of living. The consumption of energy per capita has increased significantly over the last decades, as the standard of living has improved. Turkey's geographical location has several advantages for extensive use of wind power. Among the renewable sources, Turkey has very high wind energy potential. Information such as installation capacity of wind power plants in installation, under construction and license stages in the country are reported in detail. Some suggestions are presented in order to increase the wind power installation capacity of Turkey. Turkey's economic and social development has led to a massive increase in demand for electricity over the last decades. Since the Turkey has no major oil or gas reserves, it is highly dependent on energy imports and is exposed to energy insecurity in the future. But Turkey does have huge potential for renewable energy utilization. There has been a huge growth in the construction of wind power plants and small hydropower plants in recent years. To meet the growing energy demand, the Turkish Government has adopted incentives for investments in renewable energy production. Wind energy investments evaluated the impact of feed-in tariffs (FIT) based on three scenarios that are optimistic, realistic and pessimistic with APLUS software that is developed for rational evaluation for energy market. Results of the three scenarios are evaluated in the view of electricity market for Turkey.

**Keywords :** APLUS, energy policy, renewable energy, wind power, Turkey

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020