**Solar Energy Potential in Turkey**

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**Summary**

Renewable energy production sources have emerged as an alternative to fossil fuels in the last two decades and have turned into an indispensable energy source to reduce carbon emissions. Today, improvement studies of individual and industrial applications significantly increase energy consumption. Fossil fuels such as coal, oil and natural gas are primarily used to meet this energy need. The priority of these resources poses two main problems. The first is that fossil fuels are likely to run out in the future. The second is the increase in environmental pollution caused by the use of these fossil fuels due to the concentration of industrial facilities in certain geographical areas. As a result of the burning of fossil fuels, CO2, SOx and NOx emissions have reached significant values. The greenhouse effect caused by CO2 has reached an important point. As a result of the CO2-induced greenhouse effect, it is estimated that the increase in world temperature will be between 1.5 ° C and 4.5 ° C in the next 40 years. In addition, SOx returns to the earth as acid rain with atmospheric events and affects ecological balances completely.

In addition to these two problems in our country, another problem is that approximately 60% of energy production is obtained from these fossil sources. This also means imported energy. Overcoming these problems brings to the agenda the research of domestic and renewable energy resources and their use in all possible sectors. For this purpose, researches are being carried out to apply renewable energy sources such as solar, wind, geothermal and biomass in different sectors.

Our country is located in a region called the solar belt and rich in solar energy. However, solar energy cannot be utilized sufficiently. The fact that the average annual total sunshine duration in our country is approximately 2650 hours and its annual average value of 1.6 MWh / kWp is an indication that it is one of the countries with the richest solar potential in the world. In this study, in addition to the solar energy potential in our country, the total installed solar energy power and environmental comparisons with fossil fuels are included.

**Keywords:** Renewable Energy, Solar Energy, Fossil Fuels,