

The Comparison of Solar Irradiance Assessment at Different Terrain In West Malaysia

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ABSTRACT

Solar energy is one of the renewable energies that is emerging in our country's development, in conjunction with the developing green technology effort. Environmental difficulties and the costly price of energy are two of the most concerning aspects of electrical power production. The primary goal of this study is to determine the optimal solar panel angle. The objectives are to achieve the goal to determine the maximum azimuth angle for solar panels in hilly and flat locations in Ampang, Malaysia, as well as to calculate the sun irradiance of solar panels at the chosen location. To maximise the overall output of electrical energy, the tilt angle of the fixed structure solar module was carefully analysed for various locations and periods. Two different locations in Ampang were analysed for observing the maximum input of solar irradiance which were in a hilly area of 3°10'25.1" N 101°47'28.7" E and a flat area of 3.1491° N, 101.7625° E. This study identified the maximum solar irradiance for generating solar energy at hilly area projected at 1333.56 W/m² compared to a flat area that received at 942.67 W/m². It gives a review of the critical indicators that the solar industry looked forward to when dealing with site selection or the potential for the development of new solar power plants. Ampang receives between 1273.43 W/m² and 1333.56 W/m² at hilly area, suggesting that the sky is clear, and the sun is shining brilliantly for a significant portion of the year.

KEYWORDS: Solar Plant, Solar Irradiance, Solar Angle, 3d Sun Path, Solar Energy

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