

Does tilt angle affect solar panel performance?

Conclusions This study analyzes the performance of a solar panel over a four-month period, considering meteorological parameters like temperature, humidity, wind speed, dew point, and solar intensity. It examines the effect of the tilt angle on efficiency and establishes correlations between efficiency and meteorological factors.

Does solar panel efficiency depend on meteorological parameters?

Investigations over the years show that the solar panel efficiency significantly depends on the different meteorological parameters. Therefore, there is an imminent need for a correlation explaining the relations between the efficiency and different meteorological parameters.

Does humidity affect PV panel efficiency?

According to the investigation, humidity levels cause a drop in PV panel efficiency (Figure 4 a). The regression line equation  $y = -0.021x + 20.797$  shows that this is the case. Efficiency and humidity have a negative association, as seen by the negative coefficient (-0.021).

What factors affect solar panel efficiency?

This efficiency is influenced by multiple factors, including solar intensity, temperature, wind speed, rainfall, humidity, dew point, and cloud cover. Consequently, investigating the impact of these factors on solar panel efficiency has become a key area of interest for researchers.

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