Tracking vs. Fixed-Angle Solar

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The need for large-scale implementation of solar energy served as inspiration for this experiment. When using renewable energy, efficiency must be maximized because it is currently much less efficient than non-renewable energy. Determining the effectiveness of solar tracking technology could be vital to the wide-spread implementation of solar energy. This experiment had two independent variables: the weather conditions, which were not controllable, and whether the solar panel would follow the sun or not. The dependent variables greatly influenced the output of the solar panels, the independent variable. The experiment showed that tracking technology makes a considerable difference in the output of a solar panel. The experiment revealed that a set angle is not sufficient to maximize the efficiency of a solar panel. The data showed that the stationary panel could only match the output of the tracking panel at peak hours, which were 11:30–12:30. This was due to the position of the sun, which was directly above the stationary solar panel. Tracking solar panels will consistently outperform static solar panels, no matter the weather or time of year.

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