

This paper deals with finding the optimum tilt angle of solar panels for solar energy applications. The objective is to maximize the output electrical energy of the photovoltaic (PV) modules. A ...

Explore the solar photovoltaic (PV) potential across 6 locations in Syria, from Aleppo to Duma. We have utilized empirical solar and meteorological data obtained from NASA's POWER API to determine solar PV potential and identify the optimal panel tilt angles for these locations.

Assuming you can modify the tilt angle of your solar PV panels throughout the year, you can optimize your solar generation in Duma, Syria as follows: In Summer, set the angle of your panels to 17°; facing South. In Autumn, tilt panels to 37°; facing South for maximum generation.

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A mathematical model was used for estimating the solar radiation on a tilted surface, and to determine the optimum tilt angle and orientation (surface azimuth angle) for the solar collector in the main Syrian zones, on a daily basis, as well as for a specific period.

