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7 environmental factors that impact solar power plant performance

Solar irradiation components

The amount of sunlight received by the solar panels is the primary factor that determines the energy generated.

Albedo

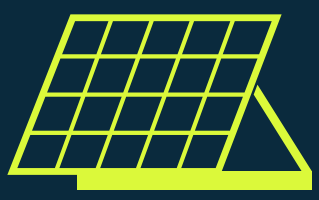
Higher albedo values result in higher annual PV energy by up to 8%.

Temperature

Solar panel efficiency decreases as their temperature increases.

Soiling

Solar panels cleaned once or twice yearly produce 3.5% and 5.1% more electricity than uncleaned ones.



Humidity

Higher humidity reduces the performance ratio of solar systems, especially in humid and tropical regions.

Wind velocity

Wind cools PV panels and increases efficiency, but high wind speed can damage them.

Rainfall

Rainfall data is used to estimate the cleanliness of the PV panels.

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