



# Tirana solar energy for the environment

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So far, we have conducted calculations to evaluate the solar photovoltaic (PV) potential in 6 locations across Albania. This analysis provides insights into each city/location's potential for harnessing solar energy through PV installations.

Seasonal solar PV output for Latitude: 41.3253, Longitude: 19.8184 (Tirana, Albania), based on our analysis of 8760 hourly intervals of solar and meteorological data (one whole year) retrieved for that set of coordinates/location from NASA POWER (The Prediction of Worldwide Energy Resources) API:

To maximize your solar PV system's energy output in Tirana, Albania (Lat/Long 41.3253, 19.8184) throughout the year, you should tilt your panels at an angle of 35°; South for fixed panel installations.

As the Earth revolves around the Sun each year, the maximum angle of elevation of the Sun varies by +/- 23.45 degrees from its equinox elevation angle for a particular latitude. Finding the exact optimal angle to maximise solar PV production throughout the year can be challenging, but with careful consideration of historical solar energy and meteorological data for a certain location, it can be done precisely.

We use our own calculation, which incorporates NASA solar and meteorological data for the exact Lat/Long coordinates, to determine the ideal tilt angle of a solar panel that will yield maximum annual solar output. We calculate the optimal angle for each day of the year, taking into account its contribution to the yearly total PV potential at that specific location.

If you can adjust the tilt angle of your solar PV panels, please refer to the seasonal tilt angles below for optimal solar energy production in Tirana, Albania. As mentioned earlier, for fixed-panel solar PV installations, it is optimal to maintain a 35°; South tilt angle throughout the year.

Our recommendations take into account more than just latitude and Earth's position in its elliptical orbit around the Sun. We also incorporate historical solar and meteorological data from NASA's Prediction of Worldwide Energy Resources (POWER) API to assign a weight to each ideal angle for each day based on its historical contribution to overall solar PV potential during a specific season.

This approach allows us to provide much more accurate recommendations than relying solely on latitude, as it considers unique weather conditions in different locations sharing the same latitude worldwide.

The topography around Tirana, Albania is generally hilly and mountainous. Areas to the southeast of Tirana, particularly near the town of Farka, are relatively flat and would be most suitable for large-scale solar PV projects. The nearby mountain ranges provide good protection from strong winds that could damage solar panels. Additionally, the area receives plenty of sunlight throughout the year making it an ideal location for



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solar energy production.

The solar PV analyses available on our website, including this one, are offered as a free service to the global community. Our aim is to provide education and aid informed decision-making regarding solar PV installations.

However, please note that these analyses are general guidance and may not meet specific project requirements. For in-depth, tailored forecasts and analysis crucial for feasibility studies or when pursuing maximum ROI from your solar projects, feel free to contact us; we offer comprehensive consulting services expressly for this purpose.

Enhance your solar panel's performance with our in-depth guide. Determine the best tilt angle using hard data, debunk common misunderstandings, and gain insight into how your specific location affects solar energy production.

Contact us for free full report

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