

Valletta solar pv

So far, we have conducted calculations to evaluate the solar photovoltaic (PV) potential in 37 locations across Malta. This analysis provides insights into each city/location's potential for harnessing solar energy through PV installations.

Seasonal solar PV output for Latitude: 35.8956, Longitude: 14.5161 (Valletta, Malta), 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 Valletta, Malta (Lat/Long 35.8956, 14.5161) throughout the year, you should tilt your panels at an angle of 31°; 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 Valletta, Malta. As mentioned earlier, for fixed-panel solar PV installations, it is optimal to maintain a 31°; 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 Valletta, Malta is generally flat and low-lying. The area is mostly made up of limestone bedrock with some small hills. Areas to the south and east of Valletta are more suitable for large scale solar PV due to their higher elevations and increased exposure to sunlight. These areas include Hal Far, Marsaxlokk, Birzebbugia, Maghtab, and Zurrieq.

Malta ranks 73rd in the world for cumulative solar PV capacity, with 196 total MW's of solar PV installed. This means that 6.50% of Malta's total energy as a country comes from solar PV (that's 12th in the world). Each year Malta is generating 373 Watts from solar PV per capita (Malta ranks 8th in the world for solar PV Watts generated per capita). [source]

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.

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