

Sunny prospects for solar systems in Germany

Not so long ago, there was a belief that solar systems were only profitable in the sun-drenched south. Fortunately, times have changed.

In addition to irradiation, factors such as financing, area and operating costs as well as electricity revenues naturally also play a decisive role in the profitability of solar projects.

Forecasting future yields is of central importance for solar projects, which is why we have yield reports prepared by experts when acquiring projects and have these updated regularly after acquisition. These reports forecast the expected annual amount of energy based on long-term average values of global radiation.

A report by the [German Weather Service \(DWD\)](#)¹ now shows that we can actually expect more hours of sunshine in Germany today than in the 1980s or 1990s. According to the report, global radiation in Germany increased by an average of 3.4 kWh/m² per year between 1983 and 2020. This corresponds to an increase of around 3% per decade, with a downward trend. While the average irradiation in the 1980s was 1,014 kWh/m²p.a., in the 2010s it was already 1,114 kWh/m².

The increase varies from region to region: it was highest in Brandenburg at 4.4 kWh/m², particularly in the region bordering Poland, while it was lowest in Baden-Württemberg at 2.8 kWh/m².

The possible causes of this increase are varied and include changes in cloud cover and the reduction of aerosols in the air. The so-called brightening effect, which describes increased light transmission in the atmosphere, is associated with measures to improve air quality. However, according to the DWD, this effect is not yet fully understood. In fact, we have observed that for many of our plants, more recent reports assume higher average irradiation levels.

To summarise, it can be said that solar installations in Germany today are likely to record more hours of sunshine than in previous decades.

Despite this positive development, however, yields also depend on a number of other factors. Our teams at re:cap deal with these diverse influences on a daily basis in order to achieve optimum results for our projects.

Citations

¹ Püschel, A., Winzig, W. & Theel, M., 2022. Entwicklung der Globalstrahlung 1983 - 2020 in Deutschland. Deutscher Wetterdienst

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