**Solar Panel energy**

Solar panel usage per day during the sunlight produces 2kwh per day

Depends on the output rating of 250 and 400

With 250 watts it produces 546 kwh per year

With 400 watts it produces 874 kwh per year

**Average usage of energy in Belgium**

Average electricity consumption

Individual 600kwh peak hours

Average consumer 2036 kwh peak hours

Average household 3500 kwh (1600kwh peak hours)(1900 kwh off peak hours)

Large scale consumer or big families 7500kwh per hour(3,600kwh peak hours)(3900kwh peak hours)

**The math**

Determine average daily energy usage:

For example 7500kwh/365 = 20.55kwh

Estimate daily sunlight hours: determine how many hours of sunlight you get per day, lets assume 5 hours per day

Calculate AC rating in KW: divide average daily usage with the average hours per day and 20.55/5 = 4.11kw ac

Calculate DC rating in KW: to find the DC rating, you'll need to account for losses due to converting DC to AC. Apply a derate factor, which is typically around 0.8. So, DC rating = AC rating / derate factor. For this example, it's 4.11 kW / 0.8 ≈ 5.14 kW DC.

Determine Number of Panels: Divide the DC rating by the rating of a single solar panel. Assuming each panel is 250 watts (0.25 kW), you'll need approximately 5.14 kW / 0.25 kW/panel ≈ 20.56 panels. Since you can't have a fraction of a panel, you'd need 21 panels

Useful Links

[How Much Energy Does A Solar Panel Produce? – Forbes Home](https://www.forbes.com/home-improvement/solar/how-much-power-does-a-solar-panel-produce/#:~:text=With%20the%20rated%20wattage%20of,sunlight%20%3D%20Daily%20Watt-hours.&text=With%20this%20basic%20approach%2C%20it,by%20week%2C%20month%20and%20year)

Solar panel prices calculator from another website to check

https://prijsschatting.zonnebroeders.be/

Houses with different angle that have shadow during the day. That impacts the sunlight if the solar gets a full light or half shadow light

[Full Sun, Part Shade; Some Basic Insights On Light (northcoastgardening.com)](https://northcoastgardening.com/2008/11/full-sun-part-shade-some-basic-insights-on-light/)