

Beginner's Guide to Solar PV Systems

1. The Basic Setup

- **Essential Components:** Solar panels, an inverter and safety components are the core. A typical 5 kW system consists of 12 panels, needs about 25m² of space and will produce ~4500 kWh/year.
- **Optional Extras:** A battery increases the % of your PV electricity that you use, offers protection during grid failures and can charge at night rate. A changeover switch allows your entire house to continue operating if the grid fails. A battery can be added later.
- **Where does it all go ?** The panels can go on a roof or on the ground. The inverter and batteries go together (between the panels and the fuseboard) and can go inside , outside, in the attic. Utility room is best option.

2. Financials: Costs and Savings

- **Costs:** For a 5 kW system with a 5 kWh battery, expect to spend ~€8,5k if getting SEAI grant (€1800) or ~€5k if getting TAMS grant (60%). The battery costs ~€2k
- **Grants:** €1800 SEAI grant for domestic, 60% DAFM grant for farmers (limited to cover actual usage), ~25% SEAI grant for businesses.
- **Payback Calculations:** You save in two ways, by using your own electricity (which is cheaper) and selling your excess to your electricity company (~20c/kWh). The system should pay for itself in 6~7 years for domestic/business or 2~3 years for farms.

3. Getting Quotes and choosing

- **Know Your Need :** Before talking to installers, know your current electricity usage. This helps in specifying the right size and features of your PV system. Understand the seasonal variation in your usage and PV production.
- **Gathering Quotes:** The more detailed your request for quote input (with photos !), the better and faster the quotes will be. Make it easy for the installer to reply. Request details on brand/model warranty for all components.
- **Assessing Quotes:** Evaluate the quality and reliability of the components, the installer's track record, and the comprehensiveness of their warranty. Make sure the quote is clear on all material, civil works, BER, changeover switch so you can compare like with like