

## Solar power optimizer vs micro inverter

Solar optimizers and micro inverters are both module-level power electronics (MLPE) used in solar energy systems to enhance performance, but they operate differently and have distinct advantages and disadvantages<sup>1234</sup>.

Solar optimizers are ideal for systems with partial shading and complex roof layouts, offering lower initial costs and simpler maintenance. Micro inverters, while more expensive, provide higher efficiency and reliability, especially in installations with varied panel orientations<sup>1234</sup>.

Haven't yet made the switch to solar? We can help. Simply pop your details into this form, and we'll connect you with local installers who'll provide you with free quotes to compare.

In a solar PV system, a solar inverter (or solar panel inverter) is essentially the gateway between your panels and your home. Any electricity that your panels generate must pass through this corridor before it can be used to power your premises.

But what's the point of this middle man? Well, solar panels create direct current (DC) electricity, whereas the majority of home appliances need alternating current (AC) electricity. The inverter transforms all DC electricity into AC electricity.

Alongside crucial AC/DC conversion, most solar inverters also offer some kind of monitoring, typically via an app. This means you can keep an eye on how much electricity your panels are producing, and spot any faults with the system.

Over time, this will give you a sense of when your solar panels' electricity production is highest – which is when you should be carrying out most of your daily electricity usage. Although, this is easier said than done, we admit.

A typical solar inverter is around 95-98% efficient, meaning it loses around 2-5% of the electricity it converts. This is understandable, as an inverter needs to use some of the electricity to power itself.

Andrew had a 3.95 kWh solar panel system installed in June 2022, which cost roughly £6,000. Despite electricity prices increasing around the world, Andrew's panels are already saving him £32.93 on energy bills. He's also projected to save around a tonne of CO<sub>2</sub> a year with his panels.

So if you had a 3.5 kW solar PV system comprised of 10 350W panels, you'd need to spend either £1,000-1,500 for 10 microinverters, or £1,000 for £400 worth of optimisers and a £600 inverter.



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The first time you buy solar panels for your home, the inverter will come as part of the purchase and installation. This means that any solar panel quotes you receive will include the cost of the inverter – so no need to worry about adding on any extras.

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