



Long-term downtime of solar inverter



Overview

Large solar systems or intense summer sunlight can keep an inverter operating near its limits for extended periods. A solar inverter typically lasts 10–15 years, though premium types like microinverters can reach 20–25 years with proper care. Different inverter types age differently. String inverters, microinverters, and string inverters paired with DC optimizers all have their own expected lifespans. According to the International Energy Agency (2024), Industry data and the Global Market Outlook by SolarPower Europe, an inverter can function for 10 years or more. Frequent grid voltage changes, unstable supply, or local network limits can cause repeated shutdowns and restarts, adding stress over time. If you add a battery to an older inverter. While solar panels are exceptionally durable and built to last 25 years or more, the inverter is a complex piece of power electronics that handles immense electrical stress and heat.



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Learn how long solar inverters last, typical warranties, replacement costs, and how to extend lifespan. Expert guidance from First Solar Installers.

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String inverters break down at a rate of 0.89% within their first two years. Solar panel inverters only last 1-20 years, while panels keep working for 25+ years or ...

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