



# Solar Panel Cleaning System for Home: Maximize Efficiency with Automated Care

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## The Silent Threat to Your Solar Investment

Did you know that dust-covered solar panels lose 15-30% efficiency annually? For homeowners in sunny regions like Arizona or Spain's Andalusia, this translates to \$200-\$500 in wasted energy production per year. The problem intensifies near coastal areas where salt deposits accelerate corrosion, or in agricultural zones with persistent pollen buildup.

## Why Manual Cleaning Fails Modern Homes

Traditional methods like hose rinsing or professional services present three critical flaws:

- Water waste (80-100 gallons per cleaning session)
- Safety risks from rooftop access
- Inconsistent cleaning frequency

A 2023 NREL study revealed that panels cleaned automatically maintained 98% peak performance versus 82% for quarterly manual cleaning.

## Next-Gen Home Solar Cleaning Technology

Our robotic system deploys AI-powered brushes and rainwater recycling - no ladder climbing, no water bills. The secret lies in its dual-action design:

"Like having a Roomba and pressure washer combined, specifically engineered for photovoltaic surfaces." - Solar Tech Monthly

## How It Outperforms Conventional Solutions

The system's self-diagnostic sensors detect soiling levels in real-time. When installed across 120 Sydney homes during the 2020 bushfire haze, it achieved:

- 22% average energy recovery
- 97% water reduction vs. manual washing
- Zero human intervention for 18+ months

## Seamless Integration for Modern Households

Compatible with Tesla Solar Roof, SunPower modules, and most tilt-mounted arrays. Installation takes

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