

How to Reduce Initial Investment in Solar Storage Systems

In today's era of increasingly decentralized and cost-conscious energy demands, off-grid microgrid systems have become the go-to solution for remote areas, islands, mining sites, emergency scenarios, and even urban backup power. However, challenges such as high initial investment, complex maintenance, and poor environmental adaptability remain industry pain points. Leveraging advanced technology integration, LCOE optimization, and a global service network, the ATESS SMC200 smart MPPT controller redefines the standard for off-grid solar energy storage system — empowering users to achieve uncompromised energy independence.

1. 8-Way MPPT Integrated Design: Save Equipment, Space, and Costs

Traditional PV systems require multiple external MPPT controllers, leading to scattered equipment and complex installation. The SMC200, with its 8 built-in independent MPPTs, supports 8 PV string inputs and a maximum 200kW PV power capacity. This makes it ideal for a wide range of applications—from 100 kW community microgrids to commercial and industrial backup power systems up to MW Scale. It delivers three core advantages:

- **Equipment Cost Reduction of 20%:** Eliminates external MPPT controllers, cutting procurement and cabling expenses.
- **50% Increase in Installation Efficiency:** Compact, optimized design enables rapid deployment, saving labor and construction time.



- **Enhanced Power Generation Efficiency:** Independent MPPT tracking minimizes shading losses, boosting annual output by 8%–12%.

2. High Protection + Intelligence: The Hidden Cost Killer

High maintenance costs for outdoor equipment? The SMC200, with its IP65 protection rating and multiple safety features, tackles challenges with robust performance, from desert heat to tropical rain, adapting to harsh environments like coastal salt spray and arid sandstorms, delivering a “maintenance-free” experience:

- **Intelligent Warning System:** Tenfold protections against overvoltage, overcurrent, short circuits, overheating, and lightning, reducing failure rates by 90%.
- **Waterproof and Dustproof Design:** Adapts to extreme weather, minimizing cleaning and inspection frequency, saving over \$1,400 in annual maintenance costs.
- **Remote Monitoring Compatibility:** Seamlessly integrates with the ATESS Enerclo monitoring cloud platform, enabling real-time power generation tracking and faster fault response.

3. Flexible Expansion + Container Compatibility: Phased

Investment Optimization

If you are facing investment pressures, the SMC200 supports modular scalability, solving the “all-in-one-go” dilemma:

- **On-Demand Investment:** Starts at 200kW per unit, with the option to parallel multiple units for megawatt-scale systems, avoiding excessive initial costs.



- **Doubled Space Efficiency:** Optimized for container solutions, saving 30% of land area and reducing transportation costs.
- **Multi-Scenario PCS Compatibility:** Pairs with ATESS PCS series energy storage inverters, supporting systems from a 100kW single unit to megawatt-level parallel setups, minimizing compatibility upgrade costs.

4. Green and Economic Win-Win: Lower Carbon Footprint, Faster ROI

Off-grid energy must balance environmental and financial goals. The SMC200 achieves both through technological innovation:

- **Low-Carbon Material Process:** Uses recyclable galvanized alloy housing, reducing production carbon footprint by 40%.
- **Zero Fuel Dependency:** Solar-storage synergy covers 100% daytime power needs, with nighttime storage costs 50% lower than diesel generation.

4. Full Lifecycle Service: One-Stop Support from Design to Maintenance

ATESS empowers global users to maximize system returns:

- **Free Feasibility Analysis:** Customized system solutions based on local sunlight and load demands.
- **EnerCollege:** Online training platform empowering local teams with intelligent diagnostic skills.



- **Localized Technical Teams:** Over 30 certified engineers in South Africa and Nigeria, offering language-adapted installation training and after-sales support.

To address the need for cost optimization, ATESS offers complimentary customized system design for the SMC200 series. For technical specifications and quotation requests, please visit atesspower.com.

