



SMA

DESIGNED FOR MAXIMUM EFFICIENCY,  
BUILT FOR HIGHER PROFITABILITY

# Sunny Central Storage UP-S

Redefining large-scale energy storage with maximum efficiency and grid stability. Advanced technology optimizes renewable energy integration while minimizing infrastructure costs.

# Maximum Efficiency, Higher Power and Grid Stability

Building on the success of its predecessor, the new **Sunny Central Storage UP-S** marks a major advancement in inverter technology. It combines higher performance with reduced infrastructure costs and exceptional reliability.

With cutting-edge **SiC MOSFET\* technology**, the new battery inverter delivers higher power conversion

efficiency, significantly lowers thermal stress, and enables full-capacity operation – even in grid-forming applications.

By optimizing a Battery Energy Storage System (BESS) and providing grid stability, the Sunny Central Storage UP-S unlocks new opportunities for large-scale energy solutions.



## KEY BENEFITS

- ✓ **High Power Density:** Delivers up to 4,600 kVA with no power derating at 35°C in charging and discharging direction.
- ✓ **Outstanding Efficiency:** Achieving up to 99.2% efficiency using innovative SiC MOSFET\* technology, resulting in reduced battery charging costs and battery CAPEX.
- ✓ **Reduced Infrastructure Costs:** Fewer inverters are needed (compared with Sunny Central Storage UP), reducing capital expenditure, installation, and maintenance costs.
- ✓ **Short-term Overload Capability:** Provides dynamic grid support during peak demand.
- ✓ **Optimized Harmonic Output:** Minimizes harmonic emissions, ensuring compatibility with even the most challenging grid conditions.
- ✓ **All-Climate Performance:** Optimized with the OptiCool™ air cooling system for efficient thermal management in any environment.
- ✓ **Modern BESS Container Compatibility:** Designed to economically match modern 5+ MWh BESS containers in 2-, 4- and 8-hour storage configurations.

\*Silicon Carbide Metal-Oxide-Semiconductor Field-Effect Transistor

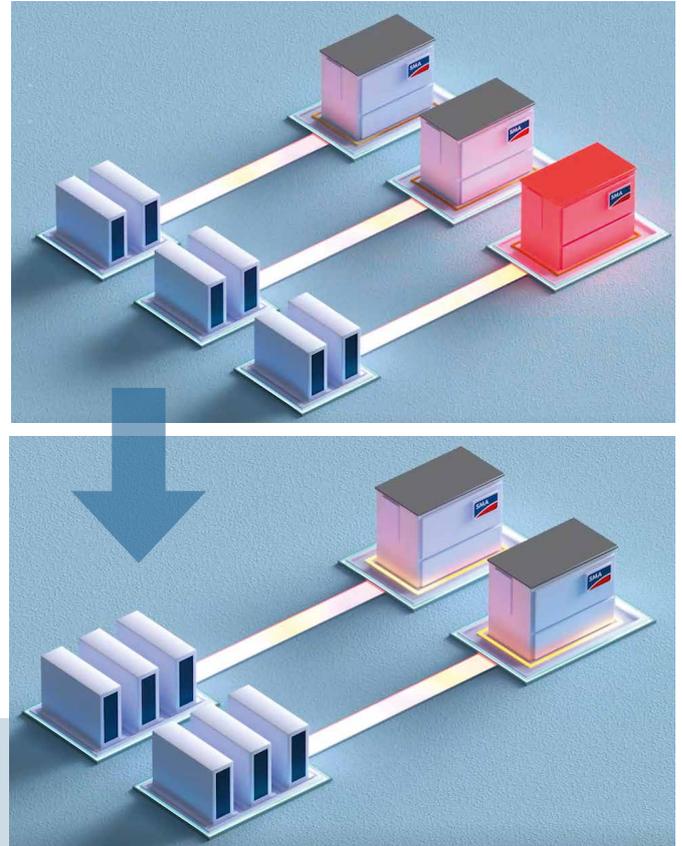
## Maximize Profitability with Advanced Semiconductor Technology – SiC MOSFET

The Sunny Central Storage UP-S supports seamless operation for both energy arbitrage and grid stability, eliminating the traditional trade-off. Powered by the advanced SiC MOSFET technology, you can now capitalize on both without the risk of thermal overload, maximizing efficiency and profitability. The innovative design provides:

- **Higher Efficiency & Reduced Thermal Loading:**  
No need to limit power output for ancillary services.
- **Symmetrical Charge & Discharge:**  
Enhanced flexibility in energy trading.
- **Unrivaled Short-term Overload Capacity:**  
Supports power system stability without reducing nominal power.
- **Extended Inverter Lifespan:**  
Lower stress on components, maximizing ROI.

**Fewer inverters  
required, reducing  
CAPEX & OPEX.**

### OPTIMIZED SYSTEM DESIGN:



## Maximize Revenue with Grid-Forming Technology

The Sunny Central Storage UP-S offers essential grid-forming capabilities, enhancing grid stability and resilience, while maximizing revenue potential:

- **Inertia & System Strength:** Supports grid stability with inverter-based inertia and improved short-circuit level, ensuring reliable power during disturbances and stabilizing the grid.
- **Black Start Capability:** Provides decentralized system restoration to quickly restore the local grid and delivers dependable energy supply during outages.
- **Grid Booster:** Enhances transmission network flexibility, alleviating system constraints and improving grid reliability.



Medium Voltage Power Station  
with Sunny Central Storage UP-S



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