



Sigenergy Innovative Utility PV Solution for Optimal LCOE

February 2026



Gregory Lukens



Sales Director EU Key Accounts

A Year of Growing & Succeeding



88

Countries

120+


Distribution partners

€1.07 billion

2025 Revenue

Growth vs. 2024

625%



As of the end of 2025

17,600+

Installers

Growth vs. 2024

400%





Global Headquarter

50%

R&D personnel

Excluding manufacturing and assembly staff

1,500+

Number Of Employees

690+

Number Of Patents



Shanghai Global Marketing Center



Shanghai Global Center

Smart Manufacturing

>99%

Product Manufacturing Yield

202,000+ m²

Total Manufacturing Area In 2026

26GWh

Total production capacity in 2026



Shanghai R&D Manufacturing Center



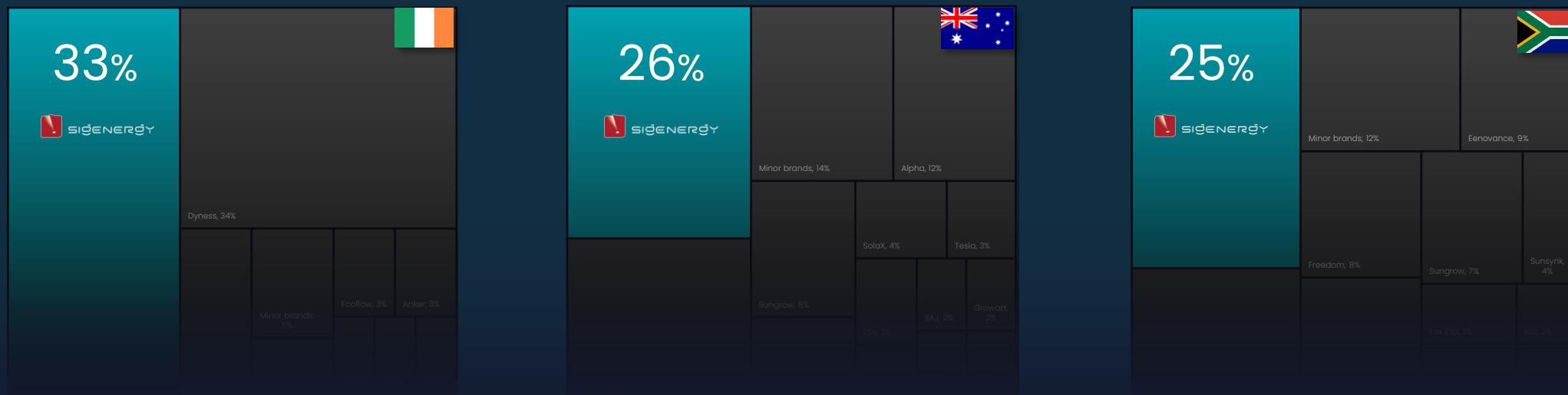
Jiangsu Production Base



Shanghai Prototyping Manufacturing Center

Proven Leadership Across Regions





Regional leader with 2025 market share by capacity.



Source: SunWiz, as of Jan. 2026




Pioneering AI Innovation, Defining the Future of Energy

Data Higher quality

-  **20,000+** global systems under AI mode
-  **400+** Polish systems under AI mode
-  **16%** AI mode activation rate in Poland
-  **80** Electricity tariff operator



Algorithms Industry Know-how

-  **15** years of expertise combining AI and energy
-  **>90%** load & solar forecast accuracy
-  **4** iterations of AI mode

Solar forecast



Spike load

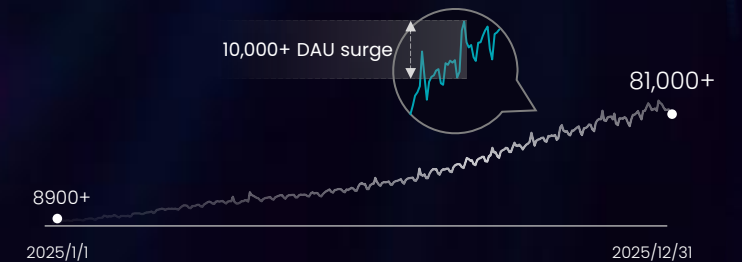
Peak shaving

AI insight

Electricity tariff & load usage forecast

Compute More scalable & stable

-  Continuous training of the Sigenery energy model, powered by elastic public cloud resources
-  **Elastic Compute**
Scale on demand to handle any DAU surge
*DAU: Daily Active Users



Pioneering AI Innovation, Defining the Future of Energy

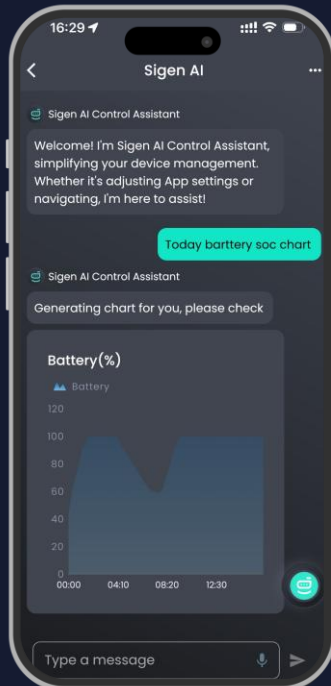


External LLM attached to existing systems

AI Assistant

One-click diagnosis

Service tickets



AI deeply embedded into system operation strategy

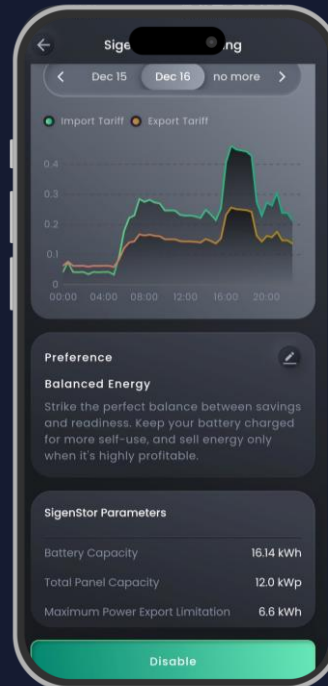
AI Mode Update

EV Charging

Smart Load

Generator Control

Bidirectional EV Charging



AI defines Energy Interaction Ecosystem

SigenCare

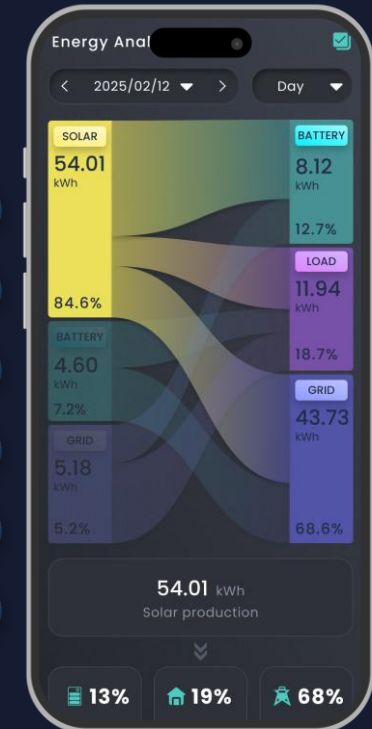
AI Insight

Energy Sankey Diagram


Battery Energy Source

Virtual Battery Allocation

Sigen Community



Lifecycle Quality Control, Long-term Reliability Guarantee

 Inverter shipment **285,000+** pcs

 Battery shipment **524,000+** pcs

1

Product design

2,000+ function test
SigenStack C&I energy system

1,500+ function test
SigenStor home energy system

2

Incoming control

100% inspection, **0 DPPM**
(critical materials)

Annual **DPPM ≤ 100**
(Non-critical materials)

*DPPM: Defective Parts Per Million

3

Production

100% end-to-end digital
manufacturing mgmt.

>99% Product
manufacturing yield rate

4

Factory test

100% battery capacity test

100% aging test

5

Extreme test

ESS
extreme thermal runaway test

Battery
24 hours water immersion test

6

All-round insurance

\$15M insurance
For entire product series

60+ national institutions
certifications

Residential Energy Solution

Stackable All-in-one BESS

Global No.1

- Innovative AI-powered
- 0 ms load-side disruption
- Pioneering V2X application

C&I Energy Solution

Modular C&I ESS

Industry 1st

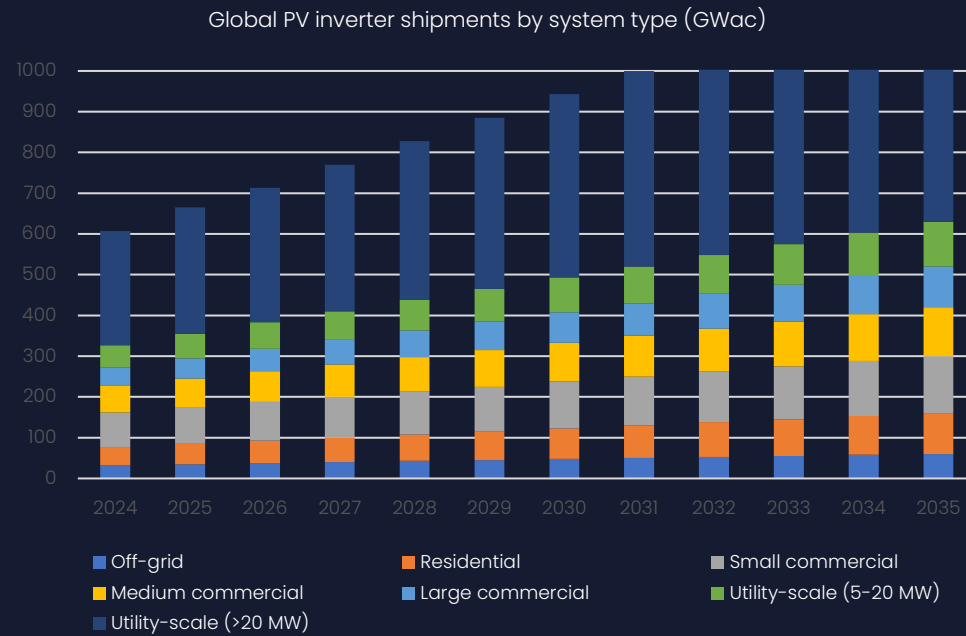
- Modular design & stackable installation
- Innovative DC-coupled architecture
- Built-in EMS for streamlined configuration

Utility-scale Energy Solution

2026 Coming soon...

Utility-Scale PV: The Structural Backbone Across Global Markets

Utility-scale remains the backbone of the PV inverter market, accounting for about **52% of total shipments over 2025–2035**, even as other segments accelerate.



* Source: 2025 S&P Global.

Australia

9.33 GW of utility PV installations forecast for 2025–2030, backed by CIS and government support.

Greece

The utility-scale segment is expected to account for 5.7 GW of new installations from 2025 to 2030.

This growth will be primarily driven by PPAs and merchant investments.

Finland

The utility segment will reach 2.8 GW by 2025–2030, supported by large solar park investments, favorable policies, and hybrid solutions.

Germany

The utility-scale segment will see strong growth, boosted by both tender plants and unsubsidized projects.

Bulgaria

Utility-scale dominates Bulgaria's solar growth, with 6.9 GW added by 2035 under the updated NECP.

Ireland

From 2025 to 2030, Ireland is expected to install 6.0 GW of solar PV, led by utility-scale projects (3.6 GW), supported by RESS.

Three Growth Engines Behind Utility-Scale PV Solutions

1

Grid Integration Needs

From Grid Connection to Grid Participation

- Coordinated multi-inverter operation
- Reduced harmonic distortion (low THDi)
- Robust thermal & electrical design
- ...

2

Cost Competitiveness

From Device Cost to Lifecycle Value

- Lower product and system costs
- Advanced technologies
- BOS & O&M reduction
- ...

3

Policy & Market Support

From Incentives to Technical Access

- Net-Zero Industry Act (NZIA)
- EU Solar Strategy & REPowerEU
- Evolving PPA and market reform frameworks
-

Emerging Challenges in Developing Utility-Scale PV Plants

1 Technology Choices Under Market Pressure

- More strings per MPPT
- Technological path changes
- Increasing safety issues

Which architecture truly fits future projects

?

2 Diverse Sites, Fewer Ideal Locations

- Complex terrain
- One-size-fits-all no longer works

How adaptable is the solution when site conditions change

?

3 Scaling Up Projects, Scaling Up O&M Complexity

- More equipment to maintain
- Higher O&M workload

How can O&M remain manageable

?



Sigenergy Utility PV Solution

Designed for the Next Phase of Utility-Scale PV

Ultimate LCOE

Safe & Reliable

Optimized O&M

Sigenenergy Utility PV Solution

Sigen Data Logger
Sigen Communication Box

Sigen Cloud
mySigen App

Sigen PV
Inverter

Sigen MV
Transformer





Sigenergy *Utility PV Inverter*

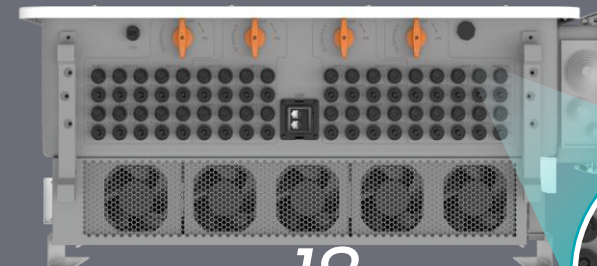
Power and Voltage, Redefined.



500+ kW

	Sigen PV 500H1	Sigen PV 370/400H2
Nominal power	460 kW	333/360 kW
Max. DC input voltage	1500 V	
MPPT voltage range	480~1500 V	
Number of MPP. trackers	18	14
Number of PV strings per MPPT	2	
Max. input current per MPPT	40 A	

Sigen PV 500H1

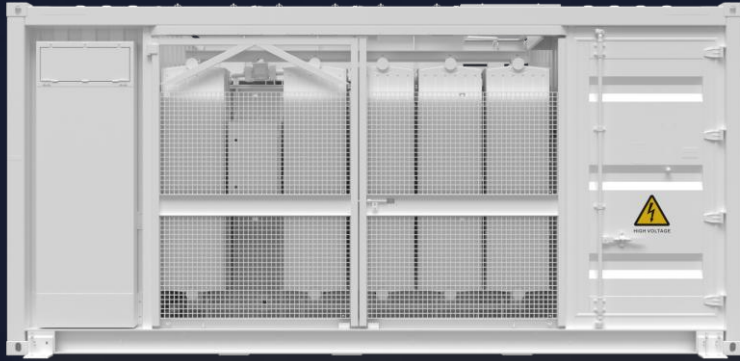


18 MPPT Design

2 PV Inputs per MPPT



Comprehensive Offerings for System-Level Excellence



Sigen Transformer Station

SigenMVT 4000/9000H1

- 20' HC Container
- Higher efficiency, Tier 2 PEI $\geq 99.615\%$ available
- Leading Large PV Subarrays - up to 9.2 MW
- Form 2b design, prevent risk spread



Sigen Communication Box / Sigen Data Logger

- Support PLC network
- Supports connection of up to 160 Inv.
- Comm. Box support Anti-PID

Exceeding 500kW, Pioneering 1000V Innovation, Saving CAPEX

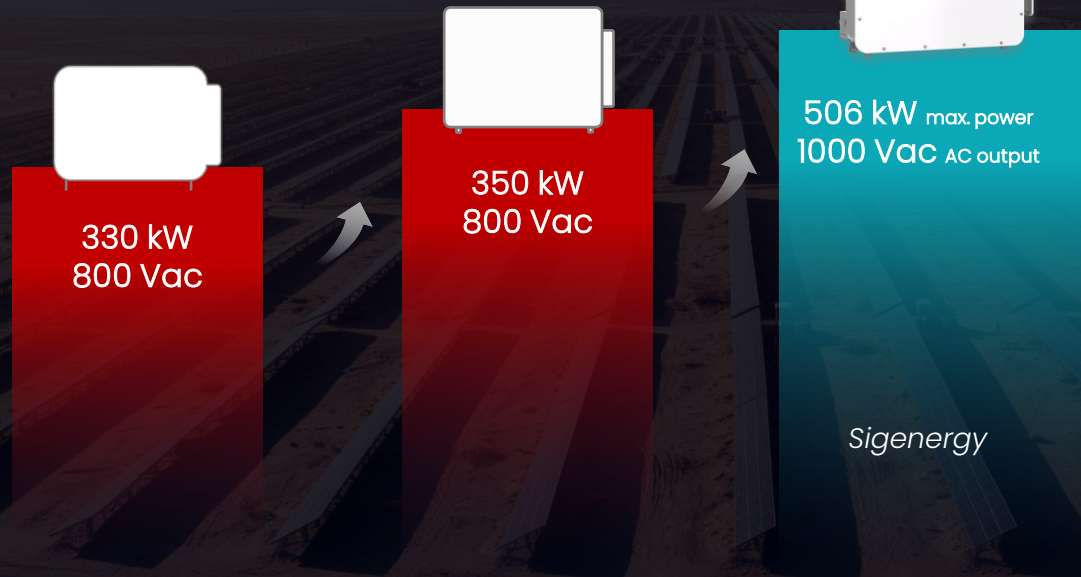
500 kW+ & 1000V AC System

50%+

AC Output Power

200Vac

AC Output Voltage



1 Component Upgrade



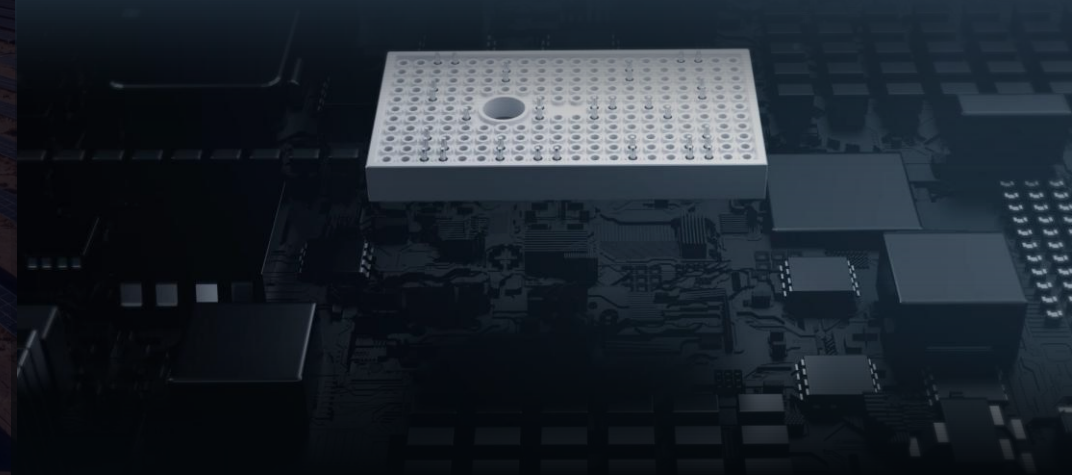
Based on SiC technology

2000V MOSFET

2 Thermal Design Upgrade

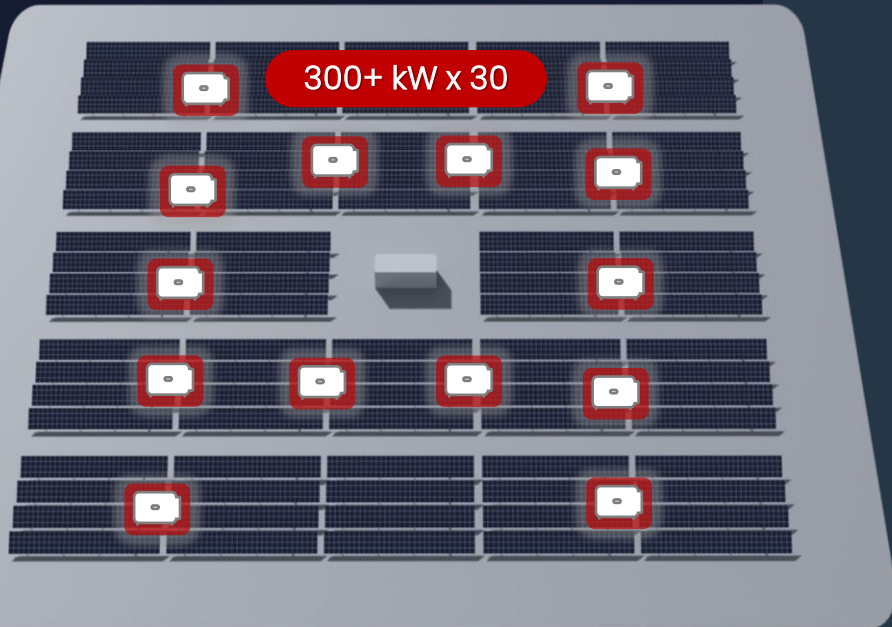
Directed airflow – eliminating
internal airflow interference

Zigzag heat exchange –
8°C lower chamber temperature



Lowered BOS with Higher AC Voltage & Power

Traditional 9 MVA
Standard Block PV Solution



Others

AC Cables
300 mm²
9018 m

INV Qty
30 pcs

BOS
19.4 \$/kW



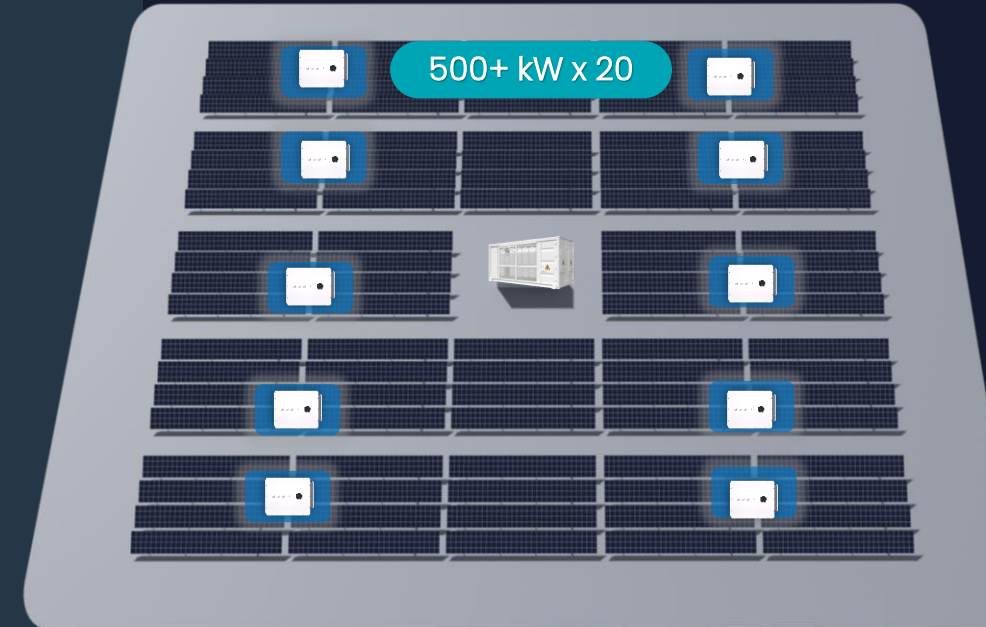
Sigenenergy

AC Cables
300 mm²
6662 m

INV Qty
20 pcs

BOS
15.7 \$/kW

Sigenenergy 9.2 MVA
Standard Block PV Solution



OPEX – Lower down by 10%

CAPEX – Lower down by 19%

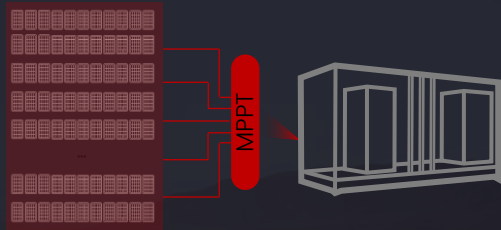
*Calculation assumption: DC/AC ration = 1.2; Cable derating = 0.75; Use aluminum wire as AC cable; PV Modules = 710Wp

Multi-MPPT Design, Better Fit for Complex Terrain



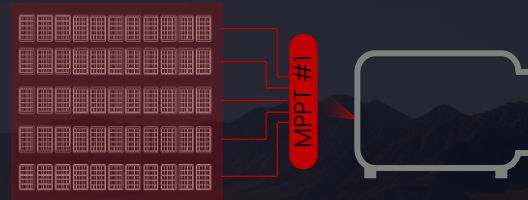
Traditional Solution

Cost reduction at the expense of power generation



Central Inverter

MPPT inputs - 20+ Strings



Traditional String Inverter

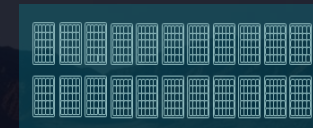
MPPT inputs - 4/5 Strings



Sigenenergy Solution

A true string inverter, boosting energy yield

Single MPPT: 2 Strings



Higher efficiency in complex scenarios

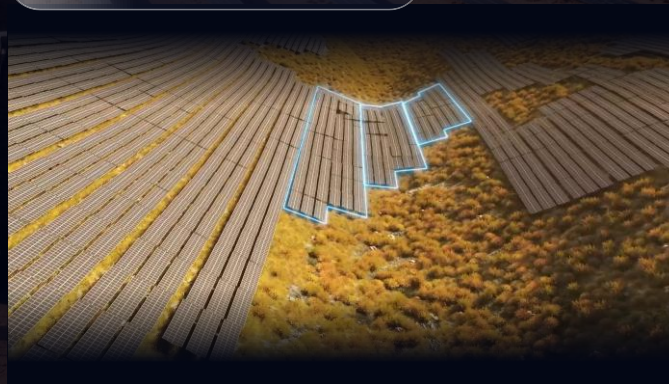


1.5~2% Higher Yield
by reducing string mismatch loss

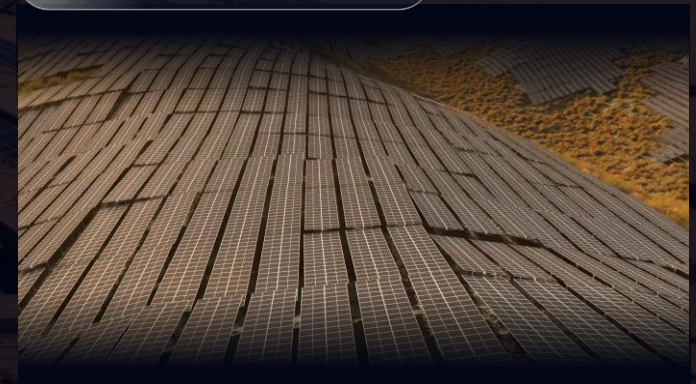
Inter-row Shading



Mismatched Orientation



Edge Shading





SIGENERGY

Safe and Reliable, Complete
Coverage of DC-side Faults

Utility level AFCI
for arc fault

Sigenergy

500m detection

*The distance is measured in specific scenarios

Other Solution

No AFCI function



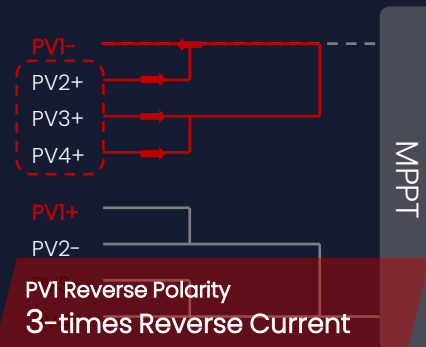
SIGENERGY

Safe and Reliable, Complete Coverage of DC-side Faults

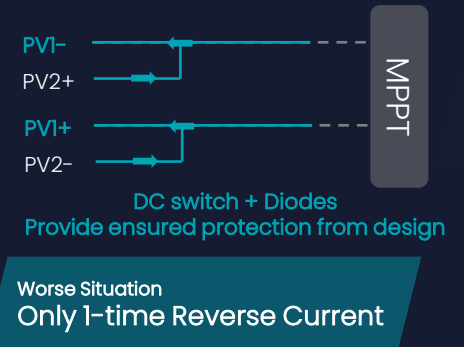
Reverse Polarity Protection for reverse polarity

Multi MPPT Less reverse current, less fire risks

Industry: Reverse polarity may cause fire risks



Sigenergy: Less inputs per MPPT, less fire risks





SiG ENERGY

Safe and Reliable, Complete Coverage of DC-side Faults

Terminal Temp. Detection
for loose connection

Tiered Protection Minimize downtime loss
Cover DC & AC terminals

Alarms

Derating

Shutdown

Safe and Reliable, Built for Harsh Environments

IP66 Protection Rate

Integrated with dual-compartment design, no need to open power compartment, preventing foreign objects from entering



C5-H Anti-corrosion Rate

Featuring high weather resistance, enhanced anti-corrosion, and high-fume environment resilience, available as an upgrade



Enhanced Lightning Protection

As the preferred solution for superior lightning protection exceeds Type I standards, with an optional DC SPD to further enhance resilience





Geo-tagging, Accurate Inspections without Detours



O&M App Built-in Map

Recording device location coordinates during commissioning

GPS Chips-free

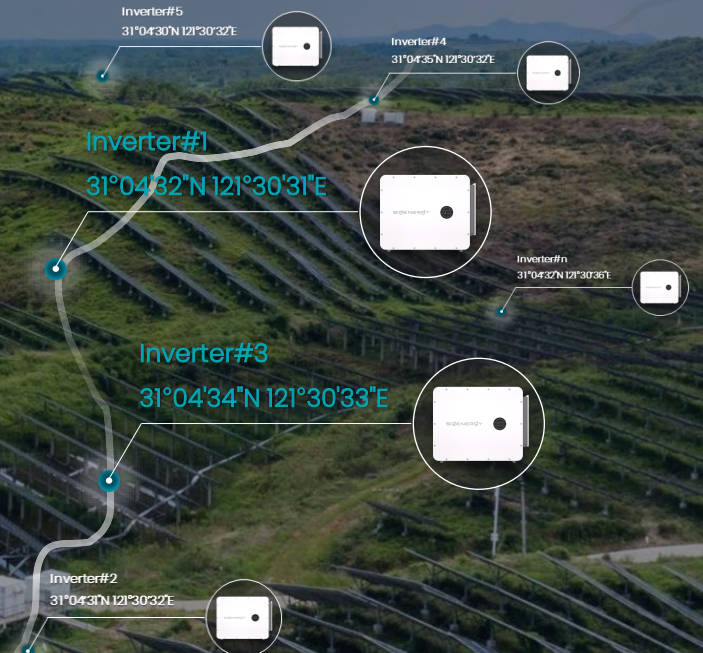
Privacy worry free

Latitude & Longitude

Inv. locations


Device Name

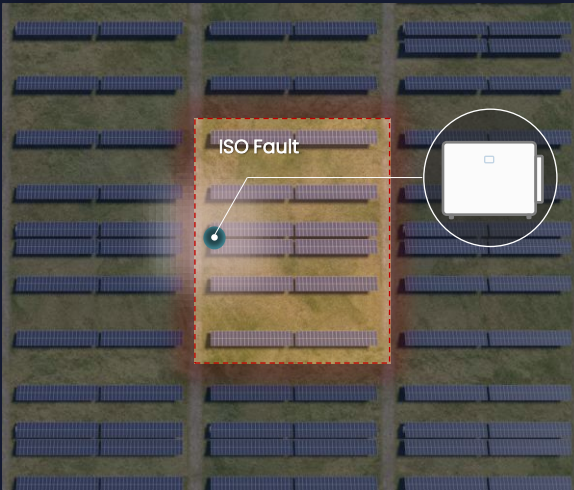
Inv. information



Inspection without wasted detours

MPPT-level ISO Fault Location, Boosting Efficiency by 15 Times


 Traditional
Inverter-level Solution



Average Level

30+ Strings

Need to detect


 Traditional
MPPT-level Solution



Industry-Leading

6 Strings

Need to detect

 Sigenenergy
MPPT-level Solution



Sigenenergy – Multi-MPPT Design

2 Strings

Only Need to detect

High Positioning accuracy

Only 2 string & 4+ dc cables
need to be checked

Low Power generation loss

Reduce downtime loss



Powering the Future of Utility-Scale PV

Sigenergy Utility PV Solution

Ultimate LCOE



Safe & Reliable



Optimized O&M

Thank you!



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