

# Shaping the new energy landscape



202501-V1.0



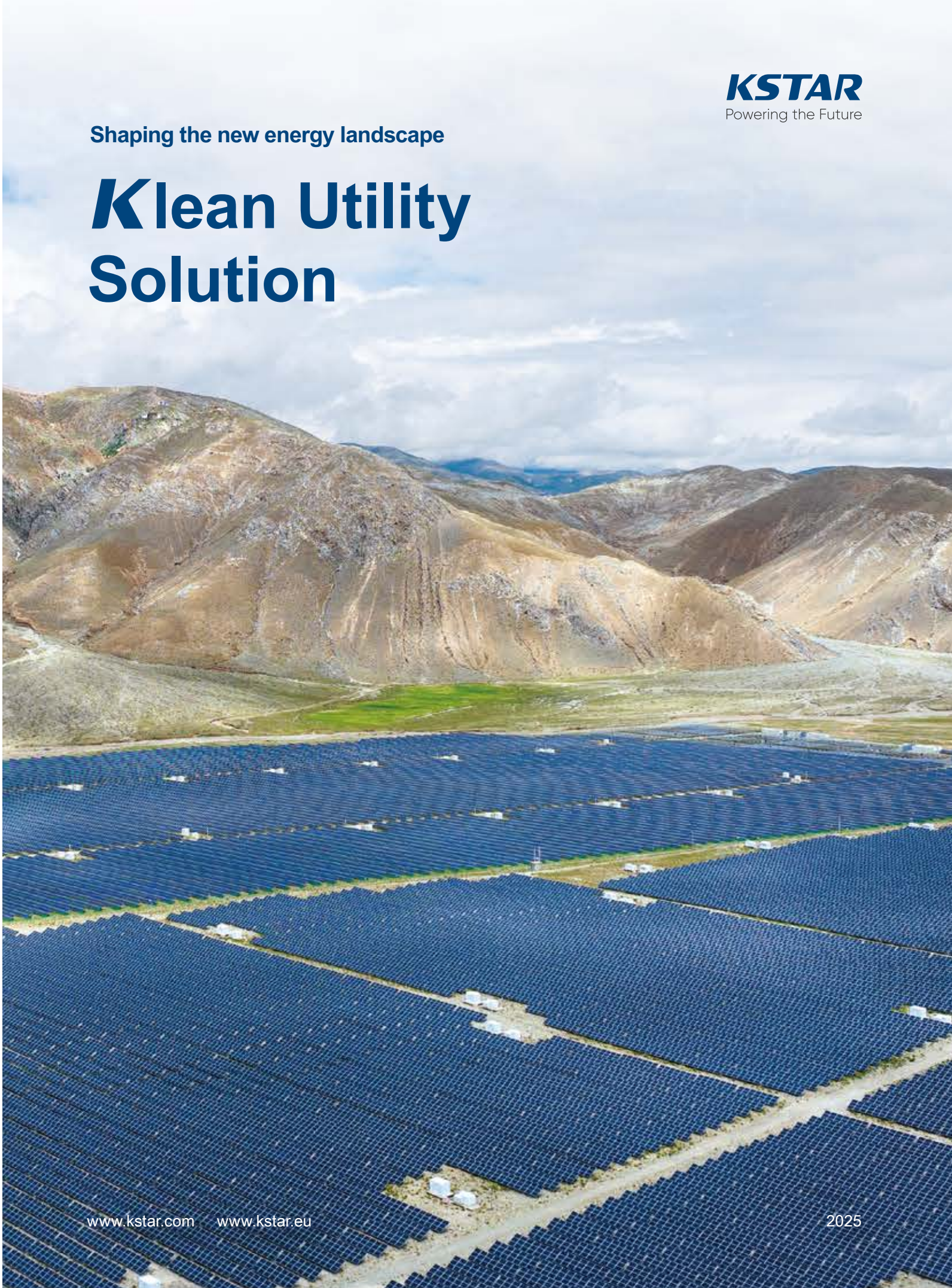
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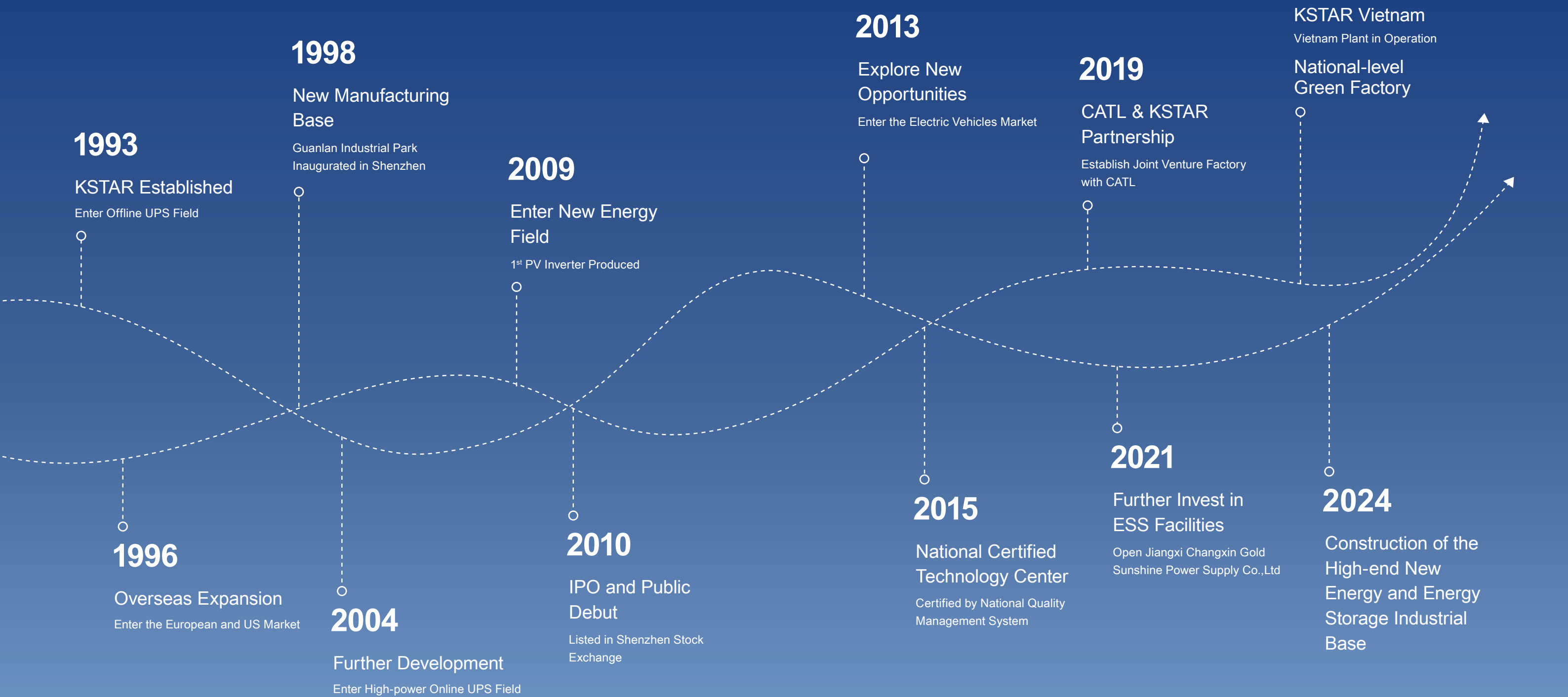


Shaping the new energy landscape

# Klean Utility Solution



# ABOUT KSTAR



# Shaping the new energy landscape



180+

Countries & Regions

60GW

PV Installation

30+

Years History

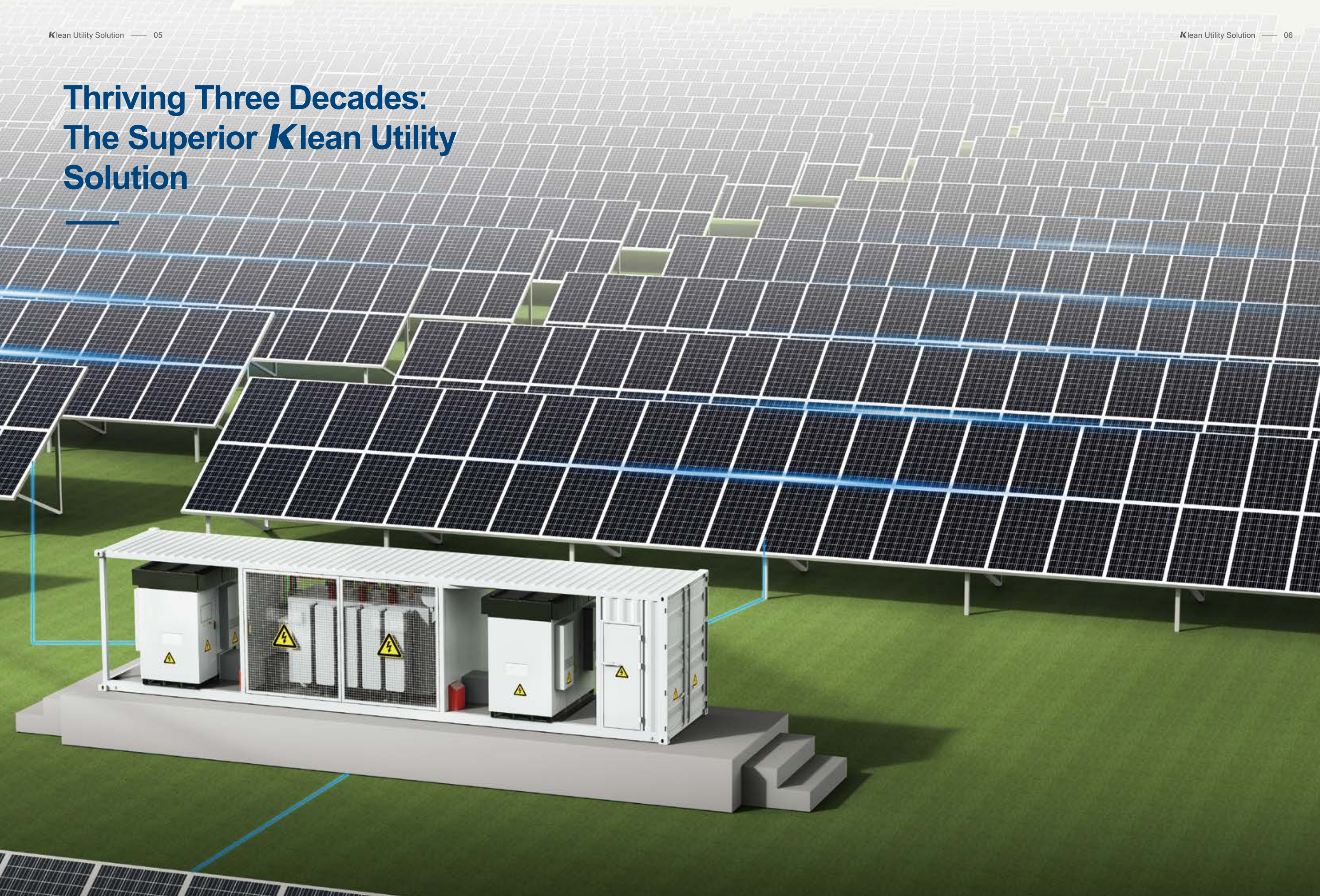
KSTAR, a leading global new energy solution provider founded in 1993, excels in key solar markets worldwide. Our expertise spans the spectrum, delivering cutting-edge PV inverters and energy storage systems for residential, commercial & industrial, and large-scale utility needs.

Backed by 30+ years of experience in electrical and electronic technology, KSTAR is committed to superior new energy

solutions for a diverse clientele in 180 countries and regions, with an impressive 60GW of KSTAR products already installed globally.

We are always generating superior solutions for energy and more. Let's power the future together.

# Thriving Three Decades: The Superior **K**lean Utility Solution



BlueWave Series

NEW

Three Phase / 1500 Vdc / 350 kW

Lower CapEx and OpEx

- ▶ Power Line Communication (PLC)
- ▶ Night SVG Function
- ▶ Support Both Al and Cu Cable

Maximize Solar Yield

- ▶ 16 Independent MPPT
- ▶ Max. Efficiency up to 99%
- ▶ Smart I-V Curve Scan

Improved Safety

- ▶ Type II DC & AC SPD
- ▶ Anti-PID Function
- ▶ AFCI Optional



| MODEL                               | G350KTHC                     |  | G350KTH |
|-------------------------------------|------------------------------|--|---------|
| Input (DC)                          |                              |  |         |
| Max. DC Voltage                     | 1500 V                       |  |         |
| Max. Input Current per MPPT         | 30 A                         |  | 40 A    |
| Max. Short-circuit Current per MPPT | 45 A                         |  | 60 A    |
| Start Voltage                       | 650 V                        |  |         |
| MPPT Voltage Range                  | 500 V ~ 1500 V               |  |         |
| Number of Strings                   | 32                           |  | 24      |
| Number of MPPT                      | 16                           |  | 12      |
| Strings per MPPT                    | 2                            |  |         |
| Output (AC)                         |                              |  |         |
| Nominal AC Output Power             | 350 kW                       |  |         |
| Max. AC Apparent Power              | 352 kVA                      |  |         |
| Nominal AC Voltage                  | 800 V, 3W+PE                 |  |         |
| Nominal Frequency                   | 50 / 60 Hz ±5Hz              |  |         |
| Frequency Range                     | 45 ~ 55 Hz / 55 ~ 65 Hz      |  |         |
| Max. Output Current                 | 254 A                        |  |         |
| Power Factor (cosΦ)                 | 0.8 leading - 0.8 lagging    |  |         |
| THDi                                | < 3% ( at nominal power )    |  |         |
| Efficiency                          |                              |  |         |
| Max. Efficiency                     | 99%                          |  |         |
| Protection Devices                  |                              |  |         |
| DC Switch                           | Yes                          |  |         |
| Anti-islanding Protection           | Yes                          |  |         |
| Over Current Protection             | Yes                          |  |         |
| DC Reverse Polarity Protection      | Yes                          |  |         |
| String Fault Detection              | Yes                          |  |         |
| DC / AC Surge Protection            | Type II                      |  |         |
| AC Short Circuit Protection         | Yes                          |  |         |
| Residual Current Detection          | Yes                          |  |         |
| PID Recovery                        | Optional                     |  |         |
| Night SVG Function                  | Optional                     |  |         |
| General Specifications              |                              |  |         |
| Dimensions (W x H x D)              | 1180 x 860 x 362 mm          |  |         |
| Weight                              | 125 kg                       |  |         |
| Operating Temperature Range         | -30 ~ 60°C                   |  |         |
| Cooling Type                        | Fan Cooling                  |  |         |
| Max. Operation Altitude             | 5000 m ( > 3000 m Derating ) |  |         |
| Max. Operating Humidity             | 0 ~ 100% (non-condensing)    |  |         |
| AC Output Terminal Type             | OT terminal                  |  |         |
| IP Class                            | IP66                         |  |         |
| Noise ( dB )                        | ≤ 75 dB                      |  |         |
| Topology                            | Transformerless              |  |         |
| Communication                       | Modbus RS-485 / PLC          |  |         |
| Display                             | LED , Buletooth+APP          |  |         |

# MV Central Inverter

Outdoor / 1500 Vdc / 2500–3125 kW

- 

Max. PV Voltage up to 1500 V  
DC / AC Ratio up to 1.8
- 

AGC / AVC, Night SVG Function  
LVRT / HVRT / FRT Function
- 

Full Power Output under 55°C  
IP55 for Outdoor Use
- 

Modular Design for Easy Maintenance  
Max. 18 DC Inputs



| MODEL                               | GSM2500D                             |          | GSM3125D |
|-------------------------------------|--------------------------------------|----------|----------|
| Input (DC)                          |                                      |          |          |
| Max. DC Input Voltage               | 1500 Vdc                             |          |          |
| Min./Start Voltage                  | 860 ~ 940 V (adjustable)             |          |          |
| MPPT Voltage Range                  | 875 ~ 1300 V                         |          |          |
| No. of MPPT                         | 2                                    |          |          |
| No. of DC Input                     | Max. 18                              |          |          |
| Max. DC Input Current <sup>1)</sup> | 3207 A                               | 4009 A   |          |
| Output (AC)                         |                                      |          |          |
| Rated AC Output Power               | 2500 kW                              | 3125 kW  |          |
| Max. AC Output Apparent Power       | 2750 kVA                             | 3437 kVA |          |
| Rated AC Voltage                    | 600 Vac, 3W+PE                       |          |          |
| AC Voltage Range                    | 510 Vac ~ 660 Vac                    |          |          |
| Rated Grid Frequency                | 50 / 60 Hz                           |          |          |
| AC Grid Frequency Range             | 45 ~ 55 Hz / 55 ~ 65 Hz (adjustable) |          |          |
| Rated Output Current                | 2406 A                               | 3007 A   |          |
| Max. Output Current                 | 2646 A                               | 3308 A   |          |
| Power Factor (cosΦ)                 | 0.8 leading - 0.8 lagging            |          |          |
| THDi                                | < 3% (at nominal power)              |          |          |
| Efficiency                          |                                      |          |          |
| Max. Efficiency                     | 99.00%                               |          |          |
| Euro Efficiency                     | 98.70%                               |          |          |
| Protection                          |                                      |          |          |
| DC Input Protection                 | Load Break Switch + Fuse             |          |          |
| AC Output Protection                | Circuit Breaker                      |          |          |
| Surge Protection                    | DC Type I+II; AC Type II             |          |          |
| Anti-islanding Protection           | Yes                                  |          |          |
| Insulation Monitoring               | Yes                                  |          |          |
| Leakage Current Monitoring          | Yes                                  |          |          |
| Overheat Protection                 | Yes                                  |          |          |
| DC Reverse Polarity Protection      | Yes                                  |          |          |
| AC Short-circuit Protection         | Yes                                  |          |          |
| Anti-PID Function                   | Optional                             |          |          |
| General Specifications              |                                      |          |          |
| Dimensions (W x H x D)              | 2725 x 2350 x 1602 mm                |          |          |
| Weight                              | 3.5 t                                |          |          |
| IP Class                            | IP55                                 |          |          |
| Topology                            | Transformerless                      |          |          |
| Operating Ambient Temperature Range | -40 ~+ 60°C ( > 50°C derating )      |          |          |
| Operating Relative Humidity Range   | 0 ~ 100%                             |          |          |
| Max. Operating Altitude             | 4000 m ( > 3000 m derating )         |          |          |
| Cooling Method                      | Forced Air Cooling                   |          |          |
| Power Consumption at Night          | < 250 W                              |          |          |
| Communication                       | Modbus RS-485                        |          |          |
| Display                             | Touch Screen                         |          |          |

1) Limited by software under DC input voltage of 875 V.

# MV Power Station

Turnkey solution for large-scale PV plants

20-ft Standard Container / All-in-one / 2500–3125 kW

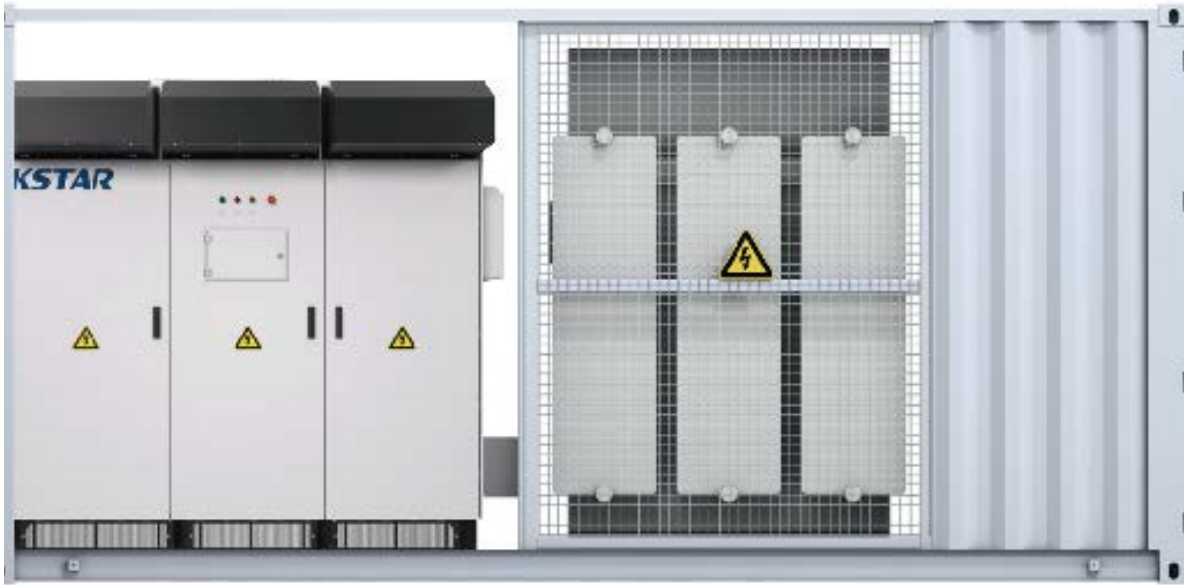
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Max. PV Voltage up to 1500 V  
DC / AC Ratio up to 1.8
- 

AGC / AVC, Night SVG Function  
LVRT / HVRT / FRT Function
- 

Full Power Output under 50°C  
Support Outdoor Installation
- 

Modular Design for Easy Maintenance  
Multiple DC Inputs



| MODEL                               | GSM2500D-MV                             |  | GSM3125D-MV |
|-------------------------------------|-----------------------------------------|--|-------------|
| Input (DC)                          |                                         |  |             |
| Max. DC Input Voltage               | 1500 Vdc                                |  |             |
| Min./Start Voltage                  | 860 ~ 940 V (adjustable)                |  |             |
| MPPT Voltage Range                  | 875 ~ 1300 V                            |  |             |
| No. of MPPT                         | 2                                       |  |             |
| No. of DC Input                     | Max. 18                                 |  |             |
| Max. DC Input Current <sup>1)</sup> | 3207 A                                  |  | 4009 A      |
| Output (AC)                         |                                         |  |             |
| Rated AC Output Power               | 2500 kW                                 |  | 3125 kW     |
| Max. AC Output Power                | 2750 kVA                                |  | 3437 kVA    |
| Inverter Max. Output Current        | 2646 A                                  |  | 3308 A      |
| AC Output Voltage                   | 10 ~ 35 kV                              |  |             |
| Rated Grid Frequency                | 50 / 60 Hz                              |  |             |
| AC Grid Frequency Range             | 45 ~ 55 / 55 ~ 65 (adjustable)          |  |             |
| Power Factor (cosΦ)                 | 0.8 leading - 0.8 lagging               |  |             |
| THDi                                | < 3% (at nominal power)                 |  |             |
| Efficiency                          |                                         |  |             |
| Inverter Max. Efficiency            | 99.00%                                  |  |             |
| Inverter Euro Efficiency            | 98.70%                                  |  |             |
| Transformer                         |                                         |  |             |
| Transformer Rated Power             | 2500 kVA                                |  | 3125 kVA    |
| Transformer Max. Power              | 2750 kVA                                |  | 3437 kVA    |
| LV / MV Voltage                     | 0.6 kV / (10 ~ 35) kV                   |  |             |
| Vector Group                        | Dy 11                                   |  |             |
| Cooling Type                        | ONAN                                    |  |             |
| Oil Type                            | Mineral Oil (PCB free)                  |  |             |
| Protection                          |                                         |  |             |
| DC Input Protection                 | Load Break Switch + Fuse                |  |             |
| Inverter AC Output Protection       | Circuit Breaker                         |  |             |
| AC MV Output Protection             | Circuit Breaker                         |  |             |
| Surge Protection                    | DC Type I+II; AC Type II                |  |             |
| Anti-islanding Protection           | Yes                                     |  |             |
| Insulation Monitoring               | Yes                                     |  |             |
| Leakage Current Monitoring          | Yes                                     |  |             |
| Overheat Protection                 | Yes                                     |  |             |
| DC Reverse Polarity Protection      | Yes                                     |  |             |
| AC Short-circuit Protection         | Yes                                     |  |             |
| Anti-PID Function                   | Optional                                |  |             |
| General Specifications              |                                         |  |             |
| Dimensions (W x H x D)              | 6058 x 2896 x 2438 mm                   |  |             |
| Weight                              | 13 t                                    |  |             |
| IP Class                            | Inverter IP55 / Others IP54             |  |             |
| Auxiliary Power Supply              | 10 kVA                                  |  |             |
| Operating Ambient Temperature Range | -40 ~+ 60°C                             |  |             |
| Operating Relative Humidity Range   | 0 ~ 100% (non-condensing)               |  |             |
| Max. Operating Altitude             | 1000 m (Standard) / > 1000 m (Optional) |  |             |
| Cooling Method                      | Forced Air Cooling                      |  |             |
| Communication                       | IEC 104 Optical Fiber                   |  |             |
| Display                             | Touch Screen                            |  |             |

1) Limited by software under DC input voltage of 875 V.

# MV Power Station

Turnkey solution for large-scale PV plants

40-ft Standard Container / All-in-one / 5000–6250 kW

 Max. PV Voltage up to 1500 V  
DC / AC Ratio up to 1.8

 AGC / AVC Night SVG Function  
LVRT / HVRT / FRT Function

 Max.36 DC Inputs  
IP55 for Outdoor Use

 Modular Design for Easy Maintenance  
Full Power Output under 50°C



| MODEL                               | GSM5000D-MV                             |          | GSM6250D-MV |
|-------------------------------------|-----------------------------------------|----------|-------------|
| Input (DC)                          |                                         |          |             |
| Max. DC Input Voltage               | 1500 Vdc                                |          |             |
| Min./Start Voltage                  | 860 ~ 940 V (adjustable)                |          |             |
| MPPT Voltage Range                  | 875 ~ 1300 V                            |          |             |
| No. of MPPT                         | 4                                       |          |             |
| No. of DC Input                     | Max. 36                                 |          |             |
| Max. DC Input Current <sup>1)</sup> | 6414 A                                  | 8018 A   |             |
| Output (AC)                         |                                         |          |             |
| Rated AC Output Power               | 5000 kW                                 | 6250 kW  |             |
| Max. AC Output Power                | 5500 kVA                                | 6875 kW  |             |
| Inverter Max. Output Current        | 5293 A                                  | 6616 A   |             |
| AC Output Voltage                   | 10 ~ 35 kV                              |          |             |
| Rated Grid Frequency                | 50 / 60 Hz                              |          |             |
| AC Grid Frequency Range             | 45 ~ 55 Hz / 55 ~ 65 Hz (adjustable)    |          |             |
| Power Factor (cosΦ)                 | 0.8 leading - 0.8 lagging               |          |             |
| THDi                                | < 3% (at nominal power)                 |          |             |
| Efficiency                          |                                         |          |             |
| Inverter Max. Efficiency            | 99.00%                                  |          |             |
| Inverter Euro Efficiency            | 98.70%                                  |          |             |
| Transformer                         |                                         |          |             |
| Transformer Rated Power             | 5000 kVA                                | 6250 kVA |             |
| Transformer Max. Power              | 5500 kVA                                | 6875 kVA |             |
| LV / MV Voltage                     | 0.6 kV - 0.6 kV / (10 ~ 35) kV          |          |             |
| Vector Group                        | Dy 11 y11                               |          |             |
| Cooling Type                        | ONAN                                    |          |             |
| Oil Type                            | Mineral Oil (PCB free)                  |          |             |
| Protection                          |                                         |          |             |
| DC Input Protection                 | Load Break Switch + Fuse                |          |             |
| Inverter AC Output Protection       | Circuit Breaker                         |          |             |
| AC MV Output Protection             | Circuit Breaker                         |          |             |
| Surge Protection                    | DC Type I+II; AC Type II                |          |             |
| Anti-islanding Protection           | Yes                                     |          |             |
| Insulation Monitoring               | Yes                                     |          |             |
| Leakage Current Monitoring          | Yes                                     |          |             |
| Overheat Protection                 | Yes                                     |          |             |
| DC Reverse Polarity Protection      | Yes                                     |          |             |
| AC Short-circuit Protection         | Yes                                     |          |             |
| Anti-PID Function                   | Optional                                |          |             |
| General Specifications              |                                         |          |             |
| Dimensions (W x H x D)              | 12192 x 2896 x 2438 mm                  |          |             |
| Weight                              | 29 t                                    |          |             |
| IP Class                            | Inverter IP55 / Others IP54             |          |             |
| Auxiliary Power Supply              | 10 kVA                                  |          |             |
| Operating Ambient Temperature Range | -40 ~+ 60°C                             |          |             |
| Operating Relative Humidity Range   | 0 ~ 100%                                |          |             |
| Max. Operating Altitude             | 1000 m (Standard) / > 1000 m (Optional) |          |             |
| Cooling Method                      | Forced Air Cooling                      |          |             |
| Communication                       | IEC 104 Optical Fiber                   |          |             |
| Display                             | Touch Screen                            |          |             |

1) Limited by software under DC input voltage of 875 V.

# KSM-SCS-04

## PV Communication Box

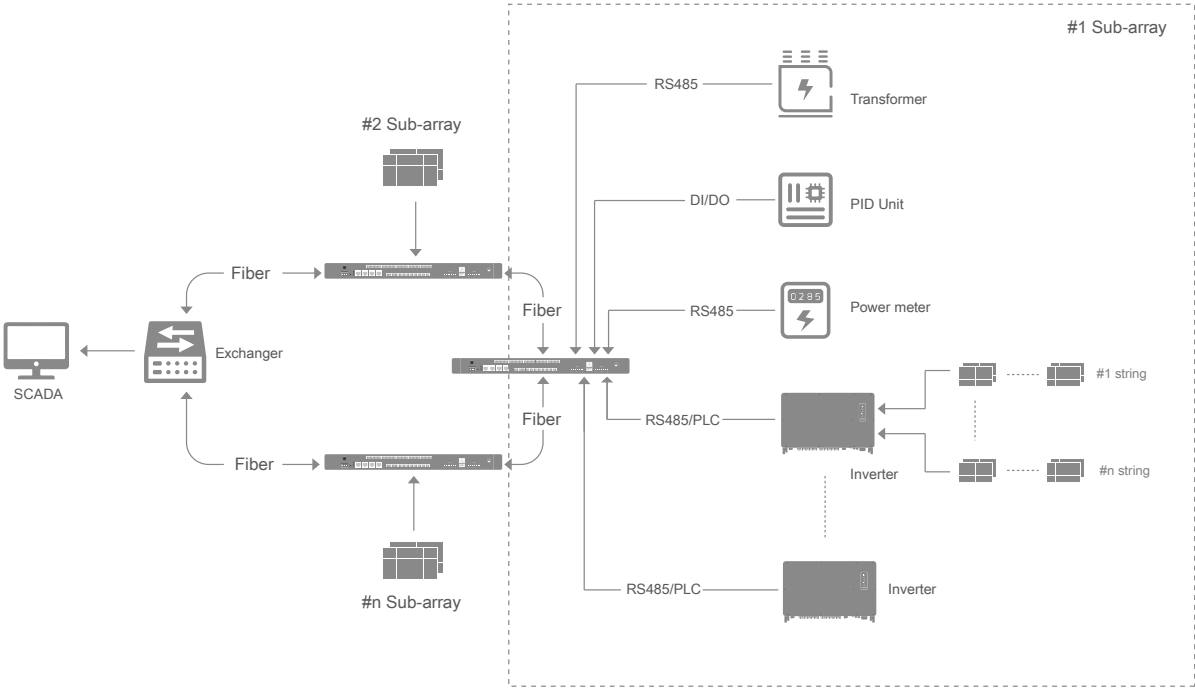
 Multiple Communication:  
RS-485+CAN+PLC+4G (optional)

 Maximum Transmission  
Distance up to 20km

 Built-in High Performance  
Data Collector



| MODEL                              | KSM-SCS-04                              |
|------------------------------------|-----------------------------------------|
| <b>Configuration</b>               |                                         |
| Internal Data Collector Model      | KSM-DCU-04                              |
| Number of RS-485 Port              | 8                                       |
| Number of CAN Port                 | 2                                       |
| Number of PLC Port                 | 1                                       |
| 4G Communication                   | Optional                                |
| Optical Fiber Ring Network         | 1 pair                                  |
| Number of FE Ports                 | 4                                       |
| Number of DI & DO Ports            | 16*DI; 8*DO                             |
| <b>Technical Parameters</b>        |                                         |
| Power Supply Voltage Range         | 100 ~ 240 Vac                           |
| Rated PLC Operating Range          | 800 Vac                                 |
| Rated PID Operating Range          | 800 Vac                                 |
| Rated Operating Frequency          | 50 Hz / 60 Hz                           |
| <b>Opeical Fiber Communication</b> |                                         |
| Central Wavelength                 | 1310 nm                                 |
| Transmission Distance              | 20 km                                   |
| <b>General</b>                     |                                         |
| Operating Temperature Range        | -20°C ~ 55°C                            |
| Relative Humidity                  | 5% ~ 95% (Non-condensing)               |
| Cable Access Mode                  | Bottom in & out                         |
| Maintenance                        | Front                                   |
| Dimensions (W x H x D)             | 540 x 670 x 290 mm                      |
| Weight                             | 31 kg                                   |
| IP Degree                          | IP65                                    |
| Installation                       | Bracket / Wall Mounting / Pole Mounting |



# GSC24-MH

1500Vdc PV Array Combiner Box

- 

Positive & Negative DC Fuse Protection  
Alarms for PV Array and Blown Fuse
- 

IP65 Protection  
Modular Design for Easy and Quick Maintenance

- 

Real-time Monitoring of the status  
of Fuse, Breaker, and SPD
- 

RS-485 and Modbus-RTU Protocol  
String Current and Voltage Monitoring



| MODEL                          | GSC24-MH                                  |
|--------------------------------|-------------------------------------------|
| Input                          |                                           |
| Max. PV String Parallel Inputs | 24                                        |
| Rated Current for Each String  | Optional                                  |
| Operating Voltage Range        | 400 ~ 1500 Vdc                            |
| System Power                   | From PV array                             |
| Communication                  | RS-485 / Modbus - RTU protocol , 9600 bps |
| Isolation Resistance           | > 10 MΩ                                   |
| Physical                       |                                           |
| Dimensions (W x H x D)         | 860 x 655 x 233 mm                        |
| Weight                         | 45 kg                                     |
| Environment                    |                                           |
| Operating Temperature          | -40°C ~ + 65°C                            |
| Humidity Range                 | 0 ~ 95% (non-condensing)                  |
| Max. Operational Altitude      | 3000 m                                    |
| Ingress Protection Rating      | IP65                                      |

# One click away from 24/7 technical support

- |                                        |                                     |
|----------------------------------------|-------------------------------------|
| Remote Energy Monitoring and Analytics | Integration with Smart Home Systems |
| Fault Detection and Maintenance        | Comprehensive Data Visualization    |
| Grid Interaction and Net Metering      | Detailed Configuration Settings     |
| Enhanced System Lifespan               | Collaborative Monitoring            |
|                                        | Extended Historical Data Analysis   |



## KSTAR SPIRIT

At KSTAR, we understand that technical service is the cornerstone of a reliable and efficient solar solution. Our commitment to unparalleled technical support ensures that your solar investment operates at peak performance throughout its lifecycle.

**Illuminate Tomorrow:  
Technical Support Today,  
Tomorrow, Always.**

# Global Presence, Local Excellence: Our Worldwide Network

With offices strategically positioned across the globe, we seamlessly connect our innovative solar solutions with communities everywhere. Experience the assurance of a truly global partner — from the manufacturing floor to your doorstep, our commitment to excellence transcends borders.



With cutting-edge technology and a dedicated workforce, we boast a robust production capacity that ensures timely delivery without compromising quality. From concept to creation, our commitment to innovation and streamlined processes empowers us to meet the growing demands for renewable energy solutions.



PV Assembly Workshop



IGBT/MOS Welding



Aging Test



Large-machine Fully Automatic Test System



01 Utility Project in the Ukraine 240MW PV Plant



02 Utility Project in the Russian 300MW PV Plant



03 Utility Project in the Spain 10MW PV Plant



04 Utility Project in the Pakistan 900MW PV Plant



05 Utility Project in the  
Tibet 4747m Altitude PV Plant



06 Utility Project in the  
Zhejiang 550MW Watersurface PV Plant



07 Utility Project in the  
Ukraine 200MW PV Plant



08 Utility Project in the  
Ukraine 15MW PV Plant