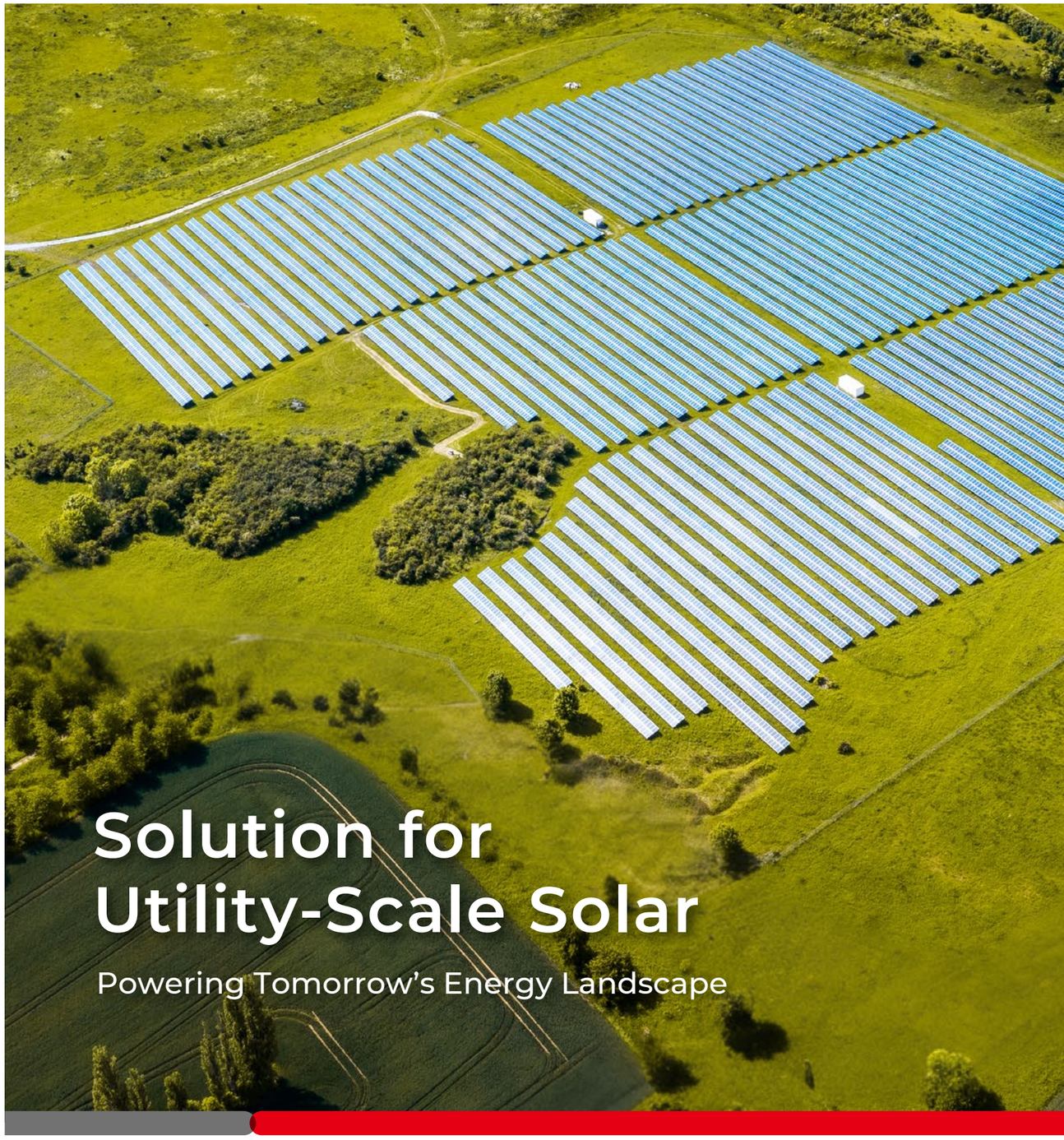
GOODWE
Smart Energy Innovator

Driving the World's Smart Energy Future



Solution for Utility-Scale Solar

Powering Tomorrow’s Energy Landscape

Scan and Follow GoodWe

Disclaimer

The technical data above mentioned may be modified in order to reflect continuous technical innovation and improvements achieved by GoodWe’s R & D team. GoodWe has the sole right to make such modification at any time without further notice. GoodWe’s customers have the right to request the latest version of GoodWe product datasheets and any commercial contracts that may be signed will be based on the most recent version of the datasheet at the moment of signing the contract.

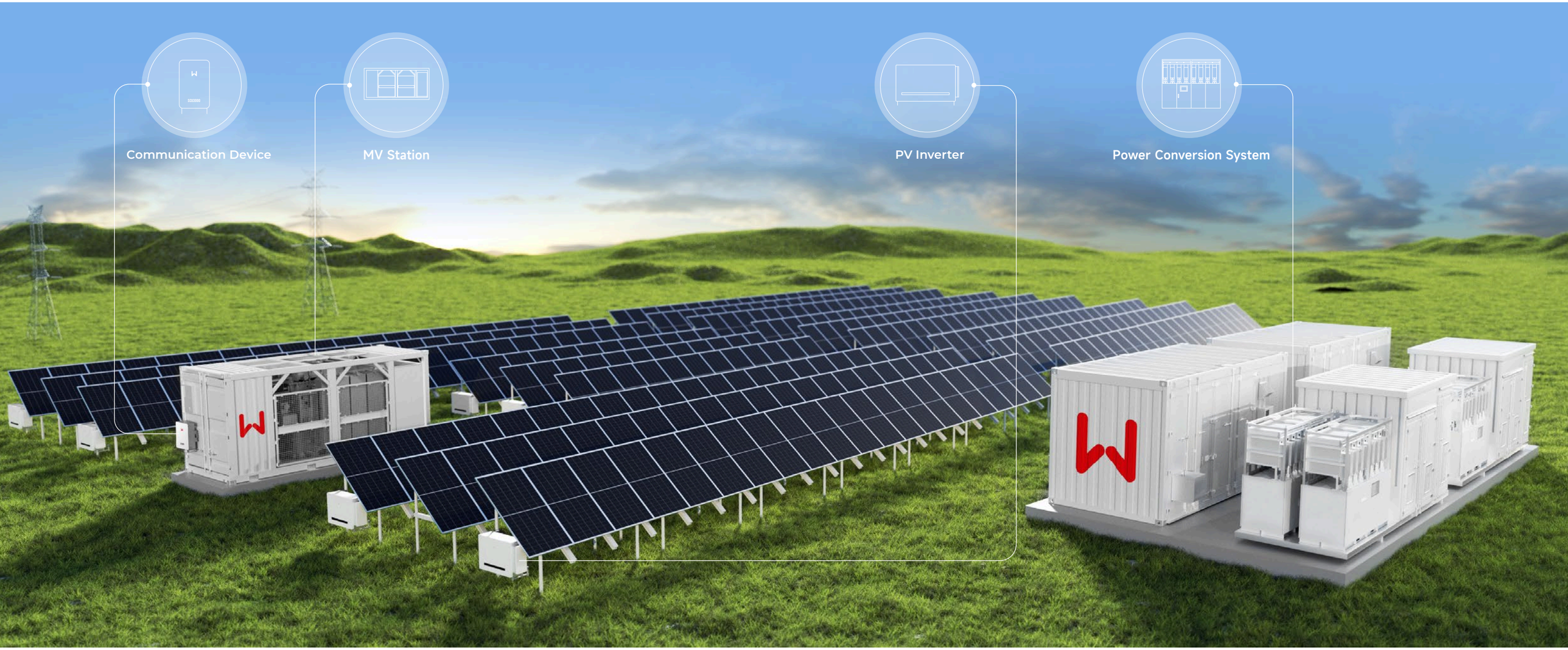
Elevate Your Energy Infrastructure

As the world transitions towards sustainable energy solutions, the role of utility-scale projects in meeting the growing demand for renewable power has never been more critical. Solar power plants provide utility-scale energy providers with a clean, renewable option. They deliver a steady electricity supply at a consistent rate, thereby circumventing higher costs associated with peak demand periods.

At GoodWe, we are proud to be at the forefront of this transformation, offering cutting-edge solutions designed to power tomorrow's infrastructure. Our comprehensive range of products and services is designed to empower large-scale projects around the world, enabling them to harness the power of renewable energy and drive sustainable development. From high-performance inverters to advanced monitoring platforms, our solutions are engineered to meet the unique challenges and requirements of utility-scale installations.

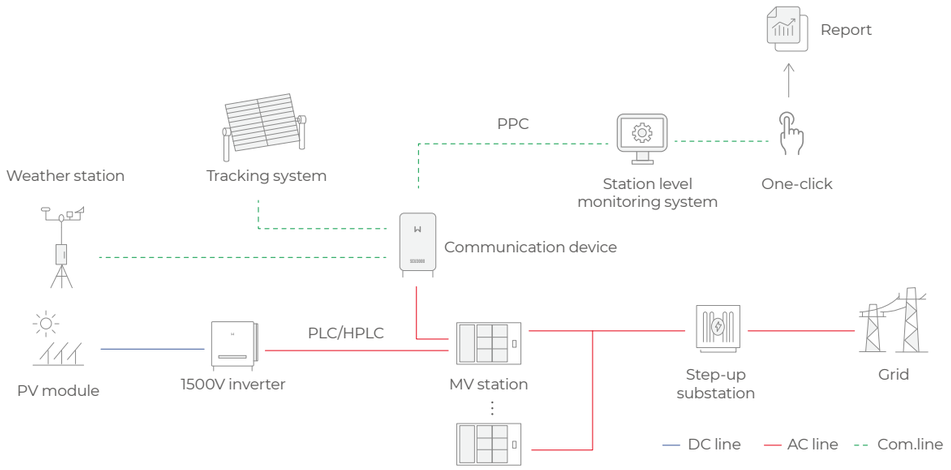
Discover GoodWe's Utility-Scale Solutions

At GoodWe, we now offer a comprehensive range of utility-scale solutions tailored to meet the demands of large-scale renewable energy projects. Our lineup includes high-performance HT and UT string inverters, MV Stations for seamless grid connection, as well as communication devices and data loggers for comprehensive monitoring and control. Designed to deliver exceptional performance, reliability, and efficiency, GoodWe's utility-scale solutions provide an integrated approach to utility-scale installations. With our commitment to excellence and innovation, GoodWe is your trusted partner in driving the success of utility-scale projects worldwide.



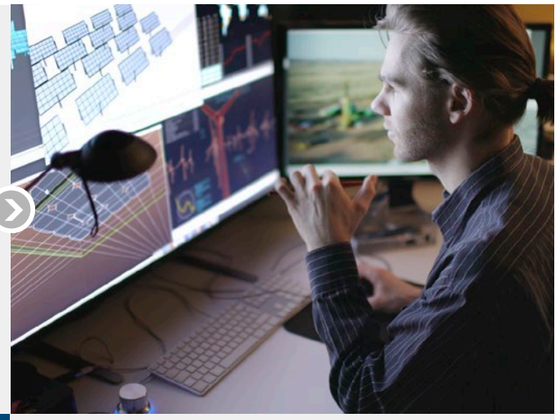
Overall Solution & Benefits

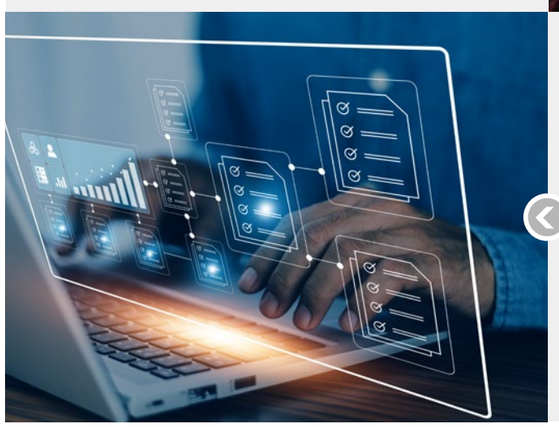
Comprehensive Solution for Varied Needs



Easy O&M

- IV curve diagnosis & remote shutdown
- Convenient configuration
- Flexible monitoring solutions
- High failure detection capabilities



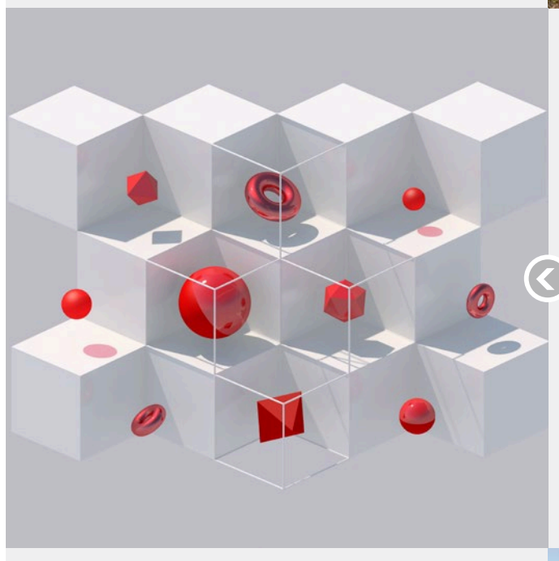


Efficiency and High Performance

- Advanced MPPT algorithms for maximum energy capture
- High conversion efficiency for optimal power output
- Consistent performance in diverse environmental conditions

Reliability and Durability

- Robust design with high-quality components
- Rigorous testing ensures reliability in various conditions
- Longevity backed by warranty and proven track record

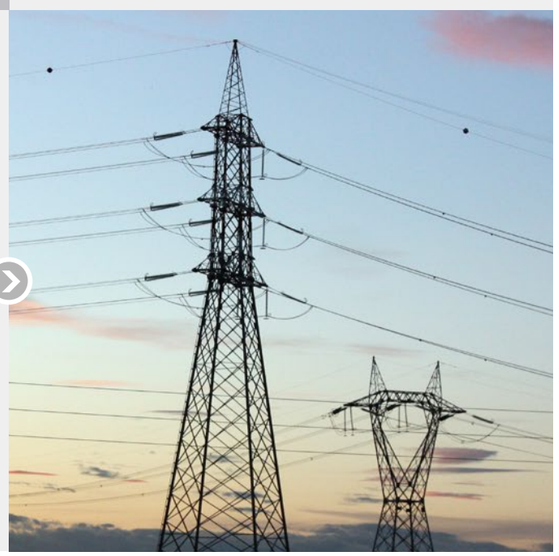


Scalability and Adaptability

- Modular design for easy integration and expansion
- Compatibility with different system sizes and configurations
- Flexibility to meet changing project requirements

Grid Compatibility and Stability

- Compliance with grid standards and regulations
- Power quality management ensures grid stability
- Integration with smart grid technologies enhances reliability



HT Series

225/250kW I Three Phase I 6/12 MPPTs

The new HT1500V Series (225/250kW) is GoodWe's top inverter with an extensive list of features designed to reduce system and O&M costs. It is a perfect choice for the utilization of utility-scale centralized PV plants to maximize the return of investment. The HT1500V Series boasts options of 6 MPPTs and 12 MPPTs, reactive power compensation, and is compatible with bifacial 182mm/210mm modules. It features string level monitoring for intelligent detection of current issues. The series is also equipped with optional Anti-PID function and can realize 24-hour monitoring. For GW225KN-HT & GW250KN-HT, the unique mechanism of smart string protection switch is supported for the DC side protection against short circuits or reverse connections. The configuration of the HT1500V can be easily done via bluetooth, while firmware diagnosis and upgrading can be operated remotely. These outstanding sets of features were conceived to ensure the lowest levelized cost of energy (LCOE) and a utility that runs efficiently.

Smart O&M
- String level monitoring
- Real-time monitoring

Lower Cost
- AC terminal ready for 300mm² aluminum cables
- Reactive power compensation at night

Superb Safety & Reliability
- Smart string protection switch[1]
- Type II SPD for both DC and AC

Higher Yields
- 20A max. current per string[1]
- Anti-PID function

1: For GW225KN-HT and GW250KN-HT only.

Technical Data	GW225K-HT	GW250K-HT	GW225KN-HT	GW250KN-HT
Input				
Max. Input Voltage (V)	1500			
MPPT Operating Voltage Range (V)	500 ~ 1500			
Start-up Voltage (V)	550			
Nominal Input Voltage (V)	1160			
Max. Input Current per MPPT (A)	30	30	60	60
Max. Short Circuit Current per MPPT (A)	50	50	90	90
Number of MPP Trackers	12	12	6	6
Number of Strings per MPPT	2	2	3	3
Output				
Nominal Output Power (kW)	225	250	225	250
Nominal Output Apparent Power (kVA)	225	250	225	250
Max. AC Active Power (kW)	247.5	250	247.5	250
Max. AC Apparent Power (kVA)	247.5	250	247.5	250
Nominal Output Voltage (V)	800, 3L / PE			
Output Voltage Range (V)	640 ~ 920			
Nominal AC Grid Frequency (Hz)	50 / 60			
AC Grid Frequency Range (Hz)	45 ~ 55 / 55 ~ 65			
Max. Output Current (A)	178.7	180.5	178.7	180.5
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%			
Efficiency				
Max. Efficiency	99.0%			
European Efficiency	98.5%	98.5%	98.7%	98.7%
Protection				
PV String Current Monitoring	Integrated			
PV Insulation Resistance Detection	Integrated			
Residual Current Monitoring	Integrated			
PV Reverse Polarity Protection	Integrated			
Anti-islanding Protection	Integrated			
AC Overcurrent Protection	Integrated			
AC Short Circuit Protection	Integrated			
AC Overvoltage Protection	Integrated			
DC Switch	Integrated			
DC Surge Protection	Type II			
AC Surge Protection	Type II			
Emergency Power Off	Optional			
Remote Shutdown	Optional			
Anti-PID	Optional			
PID Recovery	Optional			
Reactive Power Compensation at Night	Integrated			
Power Supply at Night	Integrated			
General Data				
Operating Temperature Range (°C)	-30 ~ +60			
Relative Humidity	0 ~ 100%			
Max. Operating Altitude (m)	5000 (>4000 derating)			
Cooling Method	Smart Fan Cooling			
User Interface	LED (LCD optional), Bluetooth + APP			
Communication	RS485 or PLC			
Communication Protocols	Modbus RTU			
Weight (kg)	111			
Dimension (W × H × D mm)	1091 × 678 × 341			
Topology	Non-isolated			
Self-consumption at Night (W)	<18			
Ingress Protection Rating	IP66			
DC Connector	MC4-Evo2 (4 ~ 6mm²)			
AC Connector	OT / DT terminal (Max. 300mm²)			

*: Please visit GoodWe website for the latest certificates.
*: The product appearance shown is GW225KN-HT / GW250KN-HT. The appearance may vary for GW225K-HT / GW250K-HT.

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UT Series

320/350kW I Three Phase I 12/15 MPPTs

The UT 1500V Series (320/350kW) is GoodWe's new three-phase string inverter designed to increase the profitability of utility-scale projects. Offering options of 12 MPPTs and 15 MPPTs, this series comes with a maximum string input current of 15/20A, thus supporting bifacial 182mm/210mm module access. The Anti-PID (Potential Induced Degradation) and PID-recovery functions are available to mitigate and recover from PID effects. Moreover, designed for harsh outdoor environments, the UT inverter is built to withstand extreme temperatures, with a wide operating range of -35°C to +60°C. With enhanced safety, optimal LCOE, and ensured cost-effectiveness, the high-performance UT inverter provides a future-ready solution for utility-scale PV projects.

Higher Yields

- 20A max. DC input current per string[1]
- Anti-PID and PID recovery

Superb Safety & Reliability

- IP66 and optional C5 protection
- Full power operation at high temperatures: 350kW@40°, 320kW@45°

Lower Costs

- Reactive power compensation at night
- High-speed Power Line Communication (HPLC) for reduced wiring costs

Grid Friendly

- Stable operation under weak grid conditions:SCR≥1.2
- Dynamic reactive power response <30ms

1: For GW320KH-UT and GW350KH-UT only.

Technical Data	GW320K-UT	GW320KH-UT	GW350K-UT	GW350KH-UT
Input				
Max. Input Voltage (V)	1500			
MPPT Operating Voltage Range (V)	480 ~ 1500			
Start-up Voltage (V)	500			
Nominal Input Voltage (V)	1160			
Max. Input Current per MPPT (A)	30	40	30	40
Max. Short Circuit Current per MPPT (A)	50	60	50	60
Number of MPP Trackers	15	12	15	12
Number of Strings per MPPT	2			
Output				
Nominal Output Power (kW)	320	320	352	352
Nominal Output Apparent Power (kVA)	320	320	352	352
Max. AC Active Power (kW)	352	352	352	352
Max. AC Apparent Power (kVA)	352	352	352	352
Nominal Output Voltage (V)	800, 3L / PE			
Output Voltage Range (V)	720 ~ 880			
Nominal AC Grid Frequency (Hz)	50 / 60			
AC Grid Frequency Range (Hz)	45 ~ 55 / 55 ~ 65			
Max. Output Current (A)	254			
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)			
Max. Total Harmonic Distortion	<3%			
Efficiency				
Max. Efficiency	99.01%			
European Efficiency	98.80%			
Protection				
PV String Current Monitoring	Integrated			
Internal Humidity Monitoring	Integrated			
PV Insulation Resistance Detection	Integrated			
Residual Current Monitoring	Integrated			
PV Reverse Polarity Protection	Integrated			
Anti-islanding Protection	Integrated			
AC Overcurrent Protection	Integrated			
AC Short Circuit Protection	Integrated			
AC Overvoltage Protection	Integrated			
DC Switch	Integrated			
DC Surge Protection	Type II			
AC Surge Protection	Type II			
Anti-PID and PID recovery	Optional			
Reactive Power Compensation at Night	Optional			
Power Supply at Night	Integrated			
I-V Curve Scan	Optional			
General Data				
Operating Temperature Range (°C)	-35 ~ +60			
Relative Humidity	0 ~ 100%			
Max. Operating Altitude (m)	5000 (>4000 derating)			
Cooling Method	Smart Fan Cooling			
User Interface	LED, LCD (Optional), WLAN + APP			
Communication	RS485 or HPLC			
Communication Protocols	Modbus RTU			
Weight (kg)	124			
Dimension (W × H × D mm)	1120 × 810 × 368			
Topology	Non-isolated			
Self-consumption at Night (W)	<3			
Ingress Protection Rating	IP66			
DC Connector	MC4 (4 ~ 6mm², 10mm² Optional)			
AC Connector	OT / DT terminal (Max. 400mm²)			

*: Please visit GoodWe website for the latest certificates.

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MV Station

3.5/5/7/9.152MVA

GoodWe Medium-voltage Station, a compact step-up power center, is capable of withstanding various types of environments. It offers the highest power density in an energy-efficient and safe solution comprised of MV switchgear, transformer, and LV switchgear for power transformation in large-scale solar plants. The pre-assembled and cost-effective solution is integrated into a prefabricated 20ft container, ideal for easy transportation and quick installation. The Plug-and-Play design makes grid connection exceptionally easy and rapid, and the modular architecture allows for simplified maintenance. All contained electrical components are type-tested according to strict safety standards, providing safety for operators.

Cost-saving Solution

- 20ft container for easy transportation
- A complete pre-assembled solution to minimalize deployment

High Reliability & Safety

- Type-tested components of reliable quality
- Suitable for harsh environments

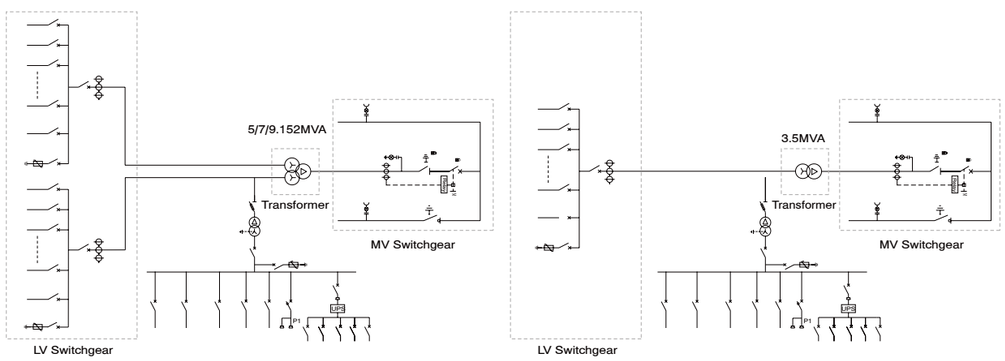
Easy Operation & Maintenance

- Plug-and-play installation
- Integrated modular design simplifying maintenance

Trustworthy

- Compatible with HT/UT inverters*
- Outstanding adaption to extreme environments

CIRCUIT DIAGRAM



*: For GW3500K-MVS, GW5000K-MVS, GW7000K-MVS, the MCCB model of UT needs to be selected separately.

Model	GW3500K-MVS	GW5000K-MVS	GW7000K-MVS	GW9100K-MVS
Transfomer				
Transformer Type	Oil immersed			
Rated Power (kVA)	3500kVA@40°C	5000kVA@40°C	7000kVA@40°C	9152kVA@40°C
Winding Connection	Dy11	Dy11-y11	Dy11-y11	Dy11 - y11
LV / MV Voltage (kV)	0.8 / 10 ~ 35	0.8 / 10 ~ 35	0.8 / 10 ~ 35	0.8 / 20 ~ 35
Maximum Input Current at Nominal Voltage (A)	2526	2 × 1805	2 × 2526	2 × 3302
Frequency (Hz)	50 / 60			
Tapping range	±2 × 2.5%			
Peak Efficiency Index	≥99%			
Cooling Type	ONAN (Oil Natural Air Natural)			
Impedance	7.0% (±10%)	7.5% (±10%)	8.0% (±10%)	9.5% (±10%)
Oil Type	Mineral oil (PCB free)			
Winding Material	Al / Al			
Insulation Class	A			
MV Switchgear				
Insulation Type	SF6			
Rate Voltage (kV)	12.0 ~ 40.5	12.0 ~ 40.5	12.0 ~ 40.5	24.0 ~ 40.5
Rate Current (A)	630			
Internal Arcing Fault	IAC AFL 20kA / 1s			
Qty.of Feeder	2-3 feeders (D / V / C)			3 feeders (DCV, Optional: CCV)
LV Room				
ACB Specification	3200A / 800Vac / 3P, 1pcs	3200A / 800Vac / 3P, 2pcs	3200A / 800Vac / 3P, 2pcs	4000A / 800Vac / 3P, 2pcs
MCCB Specification	250A / 800Vac / 3P, 14pcs 320A / 800Vac / 3P, 10pcs	250A / 800Vac / 3P, 20pcs 320A / 800Vac / 3P, 14pcs	250A / 800Vac / 3P, 28pcs 320A / 800Vac / 3P, 20pcs	320A / 800Vac / 3P, 26pcs
Protection				
AC Input Protection	Circuit breaker			
Transformer Protection	Oil-temperature, oil-level,oil-pressure			
LV Overvoltage Protection	AC Type I + II			
General Date				
Dimensions (W × H × D mm)	6058 × 2896 × 2438			
Approximate Weight (t)	<22	<22	<22	<25
Operating Temperature Range (°C)	-25 ~ +55			-25 ~ 55 (>40°C derating)
Auxiliary Power Supply	5kVA / 400V (Optional: max. 20kVA)			5kVA / 400V (Optional: max. 50kVA)
Ingress Protection Rating	IP54			
Relative Humidity	0 ~ 95%			
Max. Operating Altitude (m)	1000 (Optional: 2000)			
Anti-corrosion Class	C4H (Optional: C5M)			
Communication	Standard: RS485, Ethernet Optional: Optical Fiber			
Compliance	IEC 60076, IEC 62271-200, IEC 62271-202, IEC 61439-1/2, EN50708			IEC 60076, IEC 62271-200, IEC 62271-202, IEC 61439-1/2, EN50708-1, CE

*: Please visit GoodWe website for the latest certificates

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SCU3000

GoodWe provides the SCU3000 (Solar Communication Unit) to achieve optimal data acquisition and centralized monitoring & maintenance for devices within PV systems. With its flexible networking and easy operations, the unit is an ideal choice for smart inverters in large-scale commercial and industrial (C&I) as well as utility-scale PV projects. Additionally, it supports optical fiber ring network communication to ensure accurate data transmission between PV sub-arrays.

- SD memory card for log storage and export
- Embedded Web server for batch configuration and upgrade
- Support of multiple protocols
- Support of various communication ports

Model	SCU3000-S	SCU3000	SCU3000A-S	SCU3000A
Communication				
Max. Inverters Supported	200			
RS485 interface	8			
Ethernet	2 × RJ45, 10 / 100Mbps			
Number of PLC	1 × PLC	2 × PLC	1 × HPLC	2 × HPLC
Input Voltage Range of PLC (V)	800			
Configuration				
Datalogger	EzLogger3000U × 1	EzLogger3000U × 1	EzLogger3000U-A × 1	EzLogger3000U-A × 1
Fibre Channel Switch	2 optical ports, 6 electrical ports			
Fiber Termination Box	24 ports, SC single-mode			
Power Supply	100 ~ 240Vac, 50 / 60Hz			
Power Consumption (W)	≤30	≤35	≤30	≤35
Mechanical				
Dimensions (W × H × D mm)	723 × 780 × 226			
Weight (kg)	25	28	25	28
Installation Method	Wall mounting, bracket mounting, pole mounting			
Environment				
Operating Temperature Range (°C)	-30 ~ +60			
Storage Temperature Range (°C)	-40 ~ +70			
Relative Humidity	5 ~ 95%			
Max. Operating Altitude (m)	5000			
Ingress Protection Rating	IP65			

*: Please visit GoodWe website for the latest certificates.
*: All pictures shown are for reference only. Actual appearance may vary.

Smart DataLogger

GoodWe's Smart DataLogger EzLogger3000U is designed for data acquisition, transmission, and protocol conversion in utility-scale PV projects. In combination with a GoodWe solar inverter, it can easily read and record all key plant data and constantly transmit the data to the GoodWe or third-party SCADA systems via the internet.

- Connecting up to 200 devices
- Support of multiple protocols
- Data breakpoint resume
- USB and embedded web for data reading and software upgrade

Model	EzLogger3000U	EzLogger3000U-A
Device Management		
Max. Number of Connected Devices	200	
Electrical		
AC Power Supply	100 ~ 240V, 50 / 60Hz	
DC Power Supply	24V	
Power Consumption (W)	≤27	
Communication Interface		
LAN	2	
PLC	1×PLC	1×HPLC
RS485	COM × 8	
Digital / Analog Input/Output	DI × 8, DO × 4, AI × 8	
PT100 / PT1000	PT100×2, PT1000×2	
Active DO	12V, 100mA	
Communication Protocol		
Ethernet	Modbus-TCP, IEC 60870-5-104	
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645	
User Interface		
LED	LED × 4	
WEB	Embedded Web	
USB	USB 2.0 x 1	
Mechanical		
Dimensions (W × H × D mm)	430 × 44 × 161	
Weight (kg)	1.2	
Installation Method	Wall Mounting, DIN Rail Mounting, Tabletop Mounting	
Environment		
Operating Temperature Range (°C)	-30 ~ +60	
Storage Temperature Range (°C)	-40 ~ +70	
Relative Humidity	5 ~ 95%	
Max. Operating Altitude (m)	5000	
Ingress Protection Rating	IP20	

*: Please visit GoodWe website for the latest certificates.

Case Studies

74 MW solar project in Thessaloniki, Greece

Solution:

230 units of 250kW-HT string inverter

86 units of 100kW-HT string inverter

SEC1000 communication device

Expected Benefits

Maximizes the plant's yield generation in high temperature areas due to an advanced design and unique late temperature derating

Brings in a high level of digitalization and uptime for utility solar farms through its PLC and Anti-PID technology

80MW PV Project in Gansu, China

Solution:

356 units of 225kW-HT string inverter

System Benefits

Optimizes local economic and industrial structures while fostering environmental protection and economic growth

Generates 186.84 million kWh yearly

Cuts CO_2 emissions by 142,800 tons annually

50MW Fishery-Photovoltaic Complementary Project in Hubei, China

Solution:

157 units of 350kW-UT string inverter

System Benefits

Combines fishery farming with PV to maximize land efficiency

Provides locals with varied revenue sources

Generates 70,400 MWh yearly

Saves 234,600 tons of coal and cuts 633,400 tons of CO_2 annually

11 MW PV project located in Perak, Malaysia

Solution:

52 units of 250kW-HT string inverter

2 units of 6750kVA MV Station

SCB3000 communication device

SolarOS monitoring platform

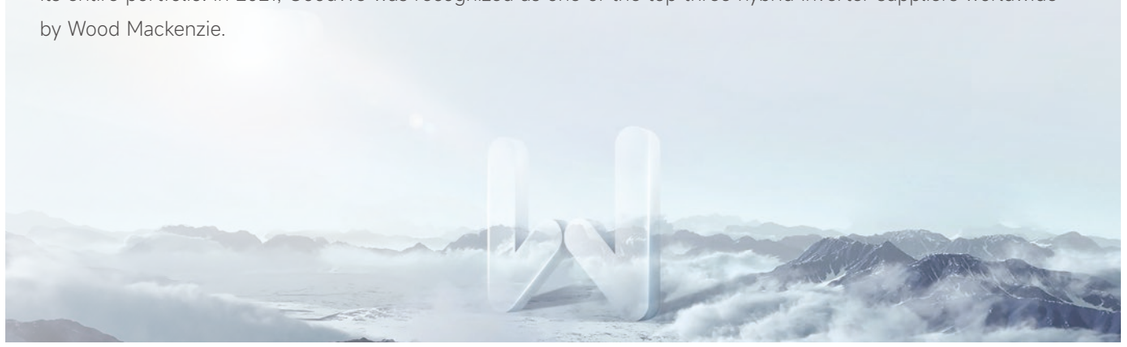
Expected Benefits

Produces 24.095 GWh, generating yearly revenues of $1 million

Lowers emissions by 17.1 metric tons annually

GoodWe - Bankable Brand with Higher Product Reliability

GoodWe is a world-leading PV inverter manufacturer and smart energy solution provider established in 2010. The company has around 5,000 employees worldwide and has a track record of over 71 GW of installations in over 100 countries and regions. GoodWe offers an extensive range of products and solutions tailored for residential, commercial and industrial, and utility-scale PV systems, delivering reliable and high-performance solutions across its entire portfolio. In 2021, GoodWe was recognized as one of the top three hybrid inverter suppliers worldwide by Wood Mackenzie.



Reliability and Innovation

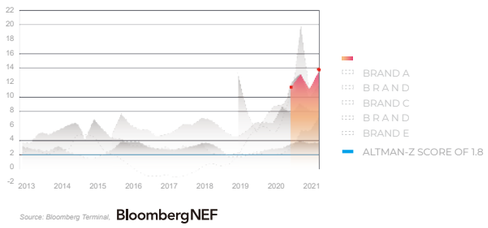
NO.1 Wood Mackenzie | TOP 3 Wood Mackenzie | TOP 6 IHS Markit | AWARD 2019 | SILVER 2022 ecovadis | reddot Design | TÜVRheinland | NO.4

DNV 2021 DNV BANKABLE

Bankable brand with higher product reliability

GoodWe is recognized as a bankable brand with higher product reliability by DNV. Concluded from the report issued in 2021, DNV views GoodWe as a well-established manufacturer of power conversion products with a successful history in design and manufacturing.

GoodWe' s positive operating performance and solid potential over the period has landed it the highest Altman-Z score among PV manufacturers on BloombergNEF' s 2021 report, displaying its strong financial health and bankability.



Source: Bloomberg Terminal BloombergNEF

Global Presence with Local Service

3 Production Facilities

China: Suzhou, Guangde
Vietnam: Haiphong

4 R&D Centers

China: Suzhou, Shenzhen, Wuhan, Nanjing

Quality Assurance at Every Stage

Emphasizing quality as our priority, GoodWe upholds the highest standards in every aspect of our operations. From customer satisfaction to product performance, our commitment to excellence drives innovation and growth in the renewable energy sector.

- Supplier Quality Management
- Incoming Quality Management
- Process Quality Management
- Outgoing/Open Box Audit
- Quality Engineering