Technology with Spirit

TWS Technology
ESS BU introduction

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TWS Technology ESS Overview

- Group Organizational Structure
- Global Footprint
- TWS Milestones
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- Awards & Honors
- ESG & Carbon Footprint

Group Organizational Structure

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TWS Group

MPS	CBS	ESS	Arkpax	UltraXel
				

Vision
Create a Better Life for People

Mission
To Be the Industry Leader in Rechargeable Energy Solutions

- Employee Engagement
- Integrity
- Customer Oriented
- Teamwork
- Pursuit of Excellence

TWS Core Values

Global Footprint

TWS Milestones

1998-2025

1998
- Founded and started production of OEM Lithium-ion batteries in Guangzhou, China

2001
- Awarded "New High-Tech Enterprise" status by Science and Technology Committee in China
- Achieved ISO 9001 certification

2005
- High growth leading to our expanded global presence among the USA, Japan, and Korea
- Ranked Forbes's top 100 Potential Enterprises in China for three consecutive years

2016
- Commenced operations of TWS Technology LLC in Chicago, USA
- Attained ISO/TS 16949 certification

2019
- Established and expanded ESS manufacturing site in Huaibei, Anhui, PRC

2020
- Inaugurated TWS GmbH in Frankfurt to drive European business expansion.
- Introduced VDA battery module solutions.
- Designated as AEO Advanced Certified Enterprise.

2021
- Launched TITAN container ESS solution

2023
- Launched its 6th R&D center in Nanjing, Jiangsu Province.
- 25th anniversary

2024
- Debuted MAX-PRO & MAX-Classic series C&I liquid-cooling ESS cabinets
- Delivered 450 MWh for China's largest string ESS power station project

2025
- Released PowerCore & PowerMod ESS container
- Added HV419 ESS cabinets
- Presented ProeM315 series C&I ESS cabinet

TWS Manufacturing Sites




Guangzhou

- Production capacity: 1.1 GWh
- Flexible & automated battery PACK assembly, SMT and injection molding production









Huaibei

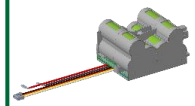
- **Production capacity: 10 GWh**
- **Automated ESS and large format module & battery PACK production**






Xuyi

- Production capacity: 1.5 GWh
- Flexible & automated battery PACK assembly

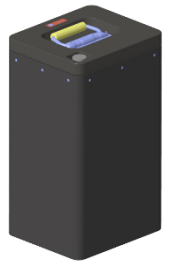






Jakarta

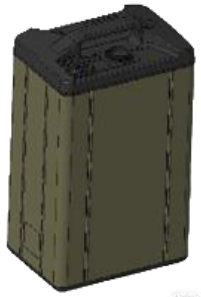
- Production capacity: 0.5 GWh
- Fully automated battery PACK production





Nakhon Pathom

- Production capacity: 0.5 GWh
- Vehicle Integration Mfg. Assembly



ESS BU Overview

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Production scale

- Existing site area: **50,000** m²
- Existing building area: **66,000** m²
- ESS Container assembly area: **4,100** m² (capable of accommodating assembly of **50 40**-foot containers)

Production capacity

- About **40,000** cells are welded daily, with an annual capacity of **10** GWh+
- **5** CTP Module + PACK production lines
- **1** pilot production line
- **4** channels of ESS charge-discharge test equipment

Awards & Honors

TWS
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Ranking

DC BESS Shipments in China in 2023 — No. 5

BESS Shipments in China in 2022 — No. 5

Honors

Top 500 Global Renewable Energy Companies — No. 343

Top 10 Brands of Energy Storge System Integration

Employees
200+

Global R&D Team
50+

Annual Production Capacity
10 GWh

Global Reach
20+

Local Support in Europe
6 Years

Total Commissioned Capacity
8 GWh By the end of 2025

ESG & Carbon Footprint

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Certified Products

Provincial Green Factory

TWS has established product carbon footprint quantification management capabilities compliant with international standards, laying a solid foundation for addressing EU regulations and expanding into international markets.

Product Carbon Footprint Certificate

No.: 04125CFP0416

Product Name: Battery pack（1P104S）
Product Model: 1P104S PACK
Standard: ISO 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification
Reporting Period: From January 1, 2024 – December 31, 2024
Boundary: Cradle-to-gate
Functional Unit: The output is 1 kWh in the whole life cycle
*GHG Emissions: 13.27 gCO_2e
Commissioned by: TWS Technology(Anhui) Limited
Manufacturer: TWS Technology(Anhui) Limited
Factory Location: 89 Binhe Rd., New Economic Development Zone, Huaibei City, Anhui Province
Issue Date: August 22, 2025

Life cycle distribution:

* The carbon footprint data expressed in the certificate is scientifically modeled, calculated and verified according to recognized standards and within a set of strict limits. The data only demonstrates that the responsible party is meeting its responsibility and commitment to combat climate change and is publicly disclosing its efforts to control greenhouse gas emissions over the long term.
Drawing direct comparisons between carbon footprint data from similar products and data from the certificate is unscientific and it is inappropriate to draw conclusions of superiority or inferiority based on such comparisons. Anyone using the carbon footprint data in a misleading manner shall be held responsible for the consequences in accordance with relevant laws and regulations.

CTI

General manager:

CTI Certification Co., LTD.
Zone A 8F CTI Building, No.4 Liu Xian San Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong Province, China

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GREENHOUSE GAS VERIFICATION STATEMENT

Certificate No.: 04125GHGA20369

The 2024 Greenhouse Gas Inventory Report of

TWS Technology(Anhui) Limited

(Issue date: July 10, 2025; Time period: January 1, 2024- December 31, 2024) has been verified in accordance with ISO 14064-3:2019 with the materiality and the level of assurance satisfied.

Verification Criteria: ISO 14064-1:2018
Verification Programmes: ISO/IEC 17029:2019; ISO 14065:2020; ISO 14064-3:2019; ISO 14066:2011
Boundary(ies): Verified greenhouse gas statement:
The 2024 Greenhouse Gas Inventory Report of TWS Technology(Anhui) Limited
Organizational boundaries:
All facilities under the operational control and related to greenhouse gas emissions and removals of TWS Technology (Anhui) Limited,which located at 89 Binhe Rd.,New Economic Development Zone, Huaibei City, Anhui Province.P.R.China.
Scope of business and activities:
Technical research and development, assembly, and sales of lithium battery packs
Time period:
January 1, 2024- December 31, 2024
GHG Category(ies):
■ Category 1 ■ Category 2 □ Category 3
□ Category 4 □ Category 5 □ Category 6.
Total emissions: 2,143 tCO_2e
Type of entity: Third-party
Issue date: July 31, 2025
Commissioned by: TWS Technology(Anhui) Limited

Details of the objectives, assurance levels, materiality, intend users of the GHG statement, etc. are given in the appendix to this verification statement of which forms an integral part.

CTI

General manager

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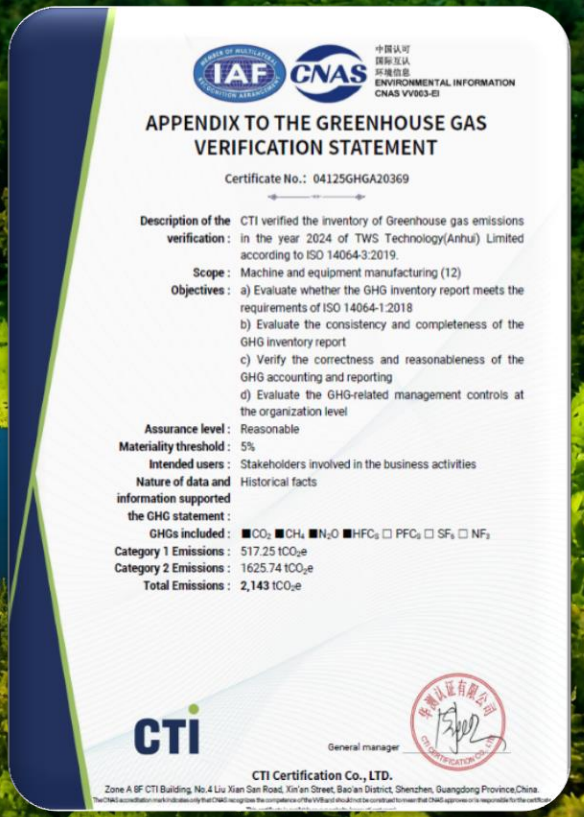
Zone A 8F CTI Building, No.4 Liu Xian San Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong Province,China.



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APPENDIX TO THE GREENHOUSE GAS VERIFICATION STATEMENT

Certificate No.: 04125GHGA20369

Description of the verification: CTI verified the inventory of Greenhouse gas emissions in the year 2024 of TWS Technology(Anhui) Limited according to ISO 14064-3:2019.
Scope: Machine and equipment manufacturing (12)
Objectives: a) Evaluate whether the GHG inventory report meets the requirements of ISO 14064-1:2018
b) Evaluate the consistency and completeness of the GHG inventory report
c) Verify the correctness and reasonableness of the GHG accounting and reporting
d) Evaluate the GHG-related management controls at the organization level
Assurance level: Reasonable
Materiality threshold: 5%
Intended users: Stakeholders involved in the business activities
Nature of data and information supported the GHG statement: Historical facts
GHGs included: ■CO_2 ■CH_4 ■N_2O ■HFC_s □ PFC_s □ SF_6 □ NF_3
Category 1 Emissions: 517.25 tCO_2e
Category 2 Emissions: 1625.74 tCO_2e
Total Emissions: 2,143 tCO_2e

CTI

General manager

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Zone A 8F CTI Building, No.4 Liu Xian San Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong Province,China.

2

Energy Storage Solutions

- Standard Product Matrix
- Energy Storage Solutions
- Energy Storage Services

Our Product Portfolio

Standard Product Matrix

Category	ESS cabinets				ESS containers		
Series	ProeM 315	Max-Pro	Max-Classic	Max-Solaris	PowerMod	PowerCore	PowerM-Pro
Cell	315 Ah LFP	315 Ah LFP	315 Ah LFP	315 Ah LFP	315 Ah LFP	315 Ah LFP	315 Ah LFP
Capacity	209-419 kWh	262 kWh	262 kWh	104 / 262 kWh	1677-2515 kWh	5031 kWh	2525-3354kwh
Rate	≤0.5 P	≤0.5 P	≤0.5 P	≤0.5 P	≤0.5 P	≤0.5 P	≤0.5 P
Including PCS	/	125KW	/	50KW/125KW	/	/	125KW/215KW

ProeM315 Series Cabinets

Product Model	ProeM315-209	ProeM315-262	ProeM315-314	ProeM315-366	ProeM315-419
System configuration	1P208S	1P260S	1P312S	1P364S	1P416S
Pack quantity	4	5	6	7	8
Rated energy (BOL) at DC side	209 kWh	262 kWh	314 kWh	366 kWh	419 kWh
System output voltage range	582.4~738.4 Vdc	728.0~923.0 Vdc	873.6~1107.6 Vdc	1019.2~1292.2 Vdc	1164.8~1476.8 Vdc
Rate for charging & discharging	≤0.5P				
Weight	2160 kg	2500 kg	2840 kg	3180 kg	3520 kg
Dimensions (W*D*H)	1330*1350*2300 mm				
Ingress protection rating	IP55				
Anti-corrosion grade	C4-M				
Operating ambient humidity	0%~95% (non-condensing)				
Operating ambient temperature	-20 ℃~55 ℃				
Maximum working altitude	4000 m				
Cooling method	Liquid-cooling				
Fire safety equipment	Aerosol + combustible gas detection + ventilation + water extinguishing system				
Communication interface	LAN				
Communication protocol	Modbus TCP				
Certification (On going)	IEC62619, IEC63056, IEC62477, EN IEC61000, UL1973, UL9540A, UN38.3				

Max-Pro Cabinets

Product Model		Max-Pro
Cell parameters	Type	315 Ah LFP
PCS parameters	Rated output power	125 kW
	Rated power grid voltage	230/400 Vac
	Rated power grid frequency	50/60 Hz
Cabinet parameters	System configuration	1P260S
	Rated energy at DC side	262 kWh
	Voltage range	728V~923V
	Weight	2600 kg
	Dimensions (W*D*H)	950*1400*2330 mm
	Ingress protection rating	IP55
	Auxiliary power supply	Self-powered
	Anti-corrosion grade	C4-M
	Operating ambient humidity	0%~95% (non-condensing)
	Operating ambient temperature	-20 ℃~55 ℃
	Maximum working altitude	4000 m
	Cooling method	Liquid-cooling
	Fire safety equipment	Aerosol + combustible gas detection + ventilation + water extinguishing system
	Communication interface	LAN
	Communication protocol	Modbus TCP
Certification		IEC62619, IEC63056, IEC62477, IEC62933, EN 61000, UL9540A, UN38.3

Max-Classic Cabinets

Product Model		Max-Classic
Cell parameters	Type	315 Ah LFP
Cabinet parameters	Cell configuration	1P260S
	Rated energy at DC side	262 kWh
	Voltage range	728V~923 V
	Weight	2400 kg
	Dimensions (W*D*H)	950*1400*2120 mm
	Ingress protection rating	IP55
	Auxiliary power supply	External power supply
	Anti-corrosion grade	C4-M
	Operating ambient humidity	0%~95% (non-condensing)
	Operating ambient temperature	-20 ℃~55 ℃
	Maximum working altitude	4000 m
	Cooling method	Liquid-cooling
	Fire safety equipment	Aerosol + combustible gas detection + ventilation + water extinguishing system
	Communication interface	LAN
	Communication protocol	Modbus TCP
Certification		EC62619.IEC63056.IEC62477.EN61000. UL1973.UL9540A.UN38.3

Max-Solaris Cabinets

Product Model			Max-Solaris 104	Max-Solaris 262
Cell parameters	Type		315 Ah LFP	
Cabinet parameters	System configuration		1P104S	1P260S
	Rated energy at DC side		104 kWh	262 kWh
	Voltage range		291.2 V~369.2 V	728 V~923 V
	Weight		1380 kg	2380 kg
	Dimensions (W*D*H)		950*1400*2120 mm	
Hybrid inverter parameters	DC input (PV side)	Max. input power	100 kW	250 kW
		Withstand voltage	1000 V	
		Input voltage range	180V~950 V	
		Start-up voltage	180 V	
	AC output (Grid side)	Rated AC power	50 kW	125 kW
		Max. AC output power	55 kVA	137.5 kVA
		Rated AC voltage	380 V/400 V, 3W+N+PE or 3W+PE	
	AC input (Grid side)	Max. AC input power	207 kVA	
		Max. bypass current	300 A	
	EPS output (Load)	Max. AC output power	55 kVA	137.5 kVA
		Peak AC output power (10s)	155kVA	
		Switching time	<10 ms	
	Efficiency	Max. efficiency	98.5%	
	General specification	Dimensions (W*H*D)	730*1060*305 mm	
		Weight	115 kg	120 kg

PowerMod Containers

Product Model	PowerMod-1600	PowerMod-2000	PowerMod-2500
Cell type	LFP 315 Ah		
System configuration	4P416S	5P416S	6P416S
Rated energy (BOL) at DC side	1677 kWh	2096 kWh	2515 kWh
System output voltage range	1164.8-1476.8 Vdc		
Rate for charging and discharging	≤0.5P		
Dimensions (W*D*H)	3360*2438*2896 mm		
Weight	17,400 kg	20,110 kg	22,790 kg
Ingress protection rating	IP55		
Anti-corrosion grade	C4/C5		
Operating ambient humidity	0%~95% (non-condensing)		
Operating ambient temperature	-20 ℃~55 ℃		
Maximum working altitude	4000 m		
Cooling method	Liquid-cooling		
Fire protection/safety features	Aerosol + combustible gas detection + ventilation + water extinguishing system		
Communication interface	LAN		
Communication protocol	Modbus TCP		
Certification	IEC62619, IEC63056, IEC62477, EN IEC61000, UL1973, UL9540A, UN38.3		

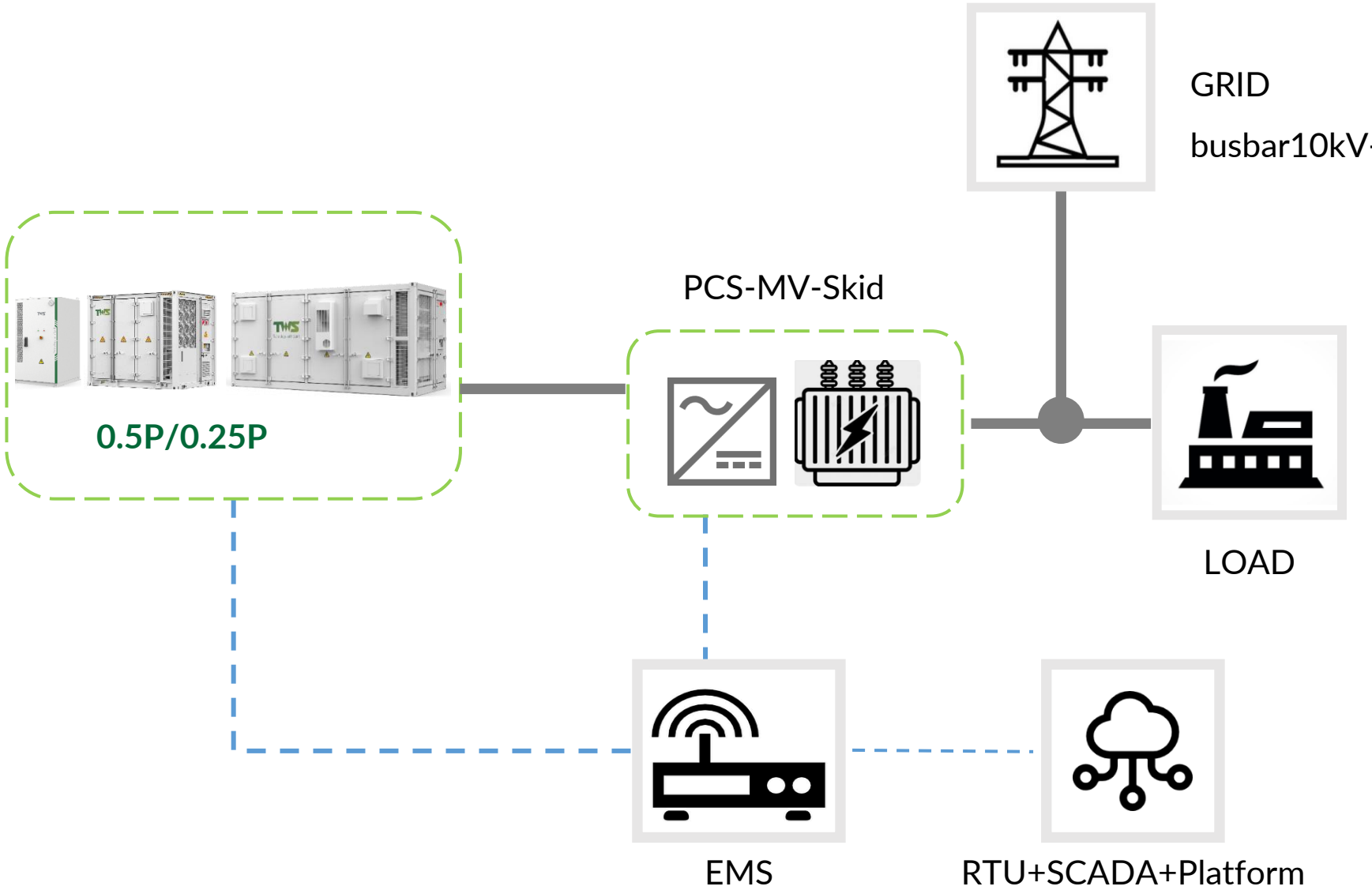
PowerCore Containers

Product Model	PowerCore
Cell type	LFP 315 Ah
System configuration	12P416S
Rated energy (BOL) at DC side	5031 kWh
System output voltage range	1164.8-1476.8 Vdc
Rate for charging and discharging	≤0.5P
Dimensions (W*D*H)	20 ft (6058*2438*2896 mm)
Weight	43,000 kg
Ingress protection rating	IP55
Anti-corrosion grade	C4
Operating ambient humidity	0%~95% (non-condensing)
Operating ambient temperature	-20 ℃~55 ℃
Maximum working altitude	4000 m
Cooling method	Liquid-cooling
Fire safety equipment	Aerosol + combustible gas detection + ventilation + water extinguishing system
Communication interface	LAN
Communication protocol	Modbus TCP
Certification	IEC62619, IEC63056, IEC62477, EN IEC61000, UL1973, UL9540A, UN38.3

PowerM-Pro Containers

Product Model	Power M-Pro 2500/1000-400	Power M-Pro 3300/1700-690V	Power M-Pro 3300/1700-800V
Cell type	LFP 315 Ah		
System configuration	8P312S	8P416S	
Rated energy	2515 kWh	3354 kWh	
System voltage range	873.6~1107.6Vdc	1164.8~ 1476.8Vdc	1206.4~1476.8Vdc
Rate for charging and discharging	≤0.5P		
PCS quantity	8		
DC input voltage range	615~1200V	1060~1500V	1200~1500V
Rated AC output voltage	400V	690V	800V
Max. output power	8*137.5kW	8*237kW	
Current distortion rate	<3% (@rated power)		
Dimensions (W*D*H)	20ft.(6058 mm* 2896mm *2438 mm)		
Weight	<28t	<33t	
Ingress protection rating	IP55		
Anti-corrosion grade	C4(C5 customizable)		
Operating ambient humidity	0%~95% (non-condensing)		
Operating ambient temperature	-20 ℃~55 ℃		
Max. operating altitude	4000m(derated when the operating altitude is over 2000m)		
Cooling method	Battery compartment: liquid-cooling / PCS: smart air cooling		
Fire safety equipment	Aerosol + combustible gas detection + ventilation + water extinguishing system		
Communication interface	LAN		
Communication protocol	Modbus TCP		
Certification	Battery rack: IEC 62619, IEC 63056, IEC 62477, EN IEC 61000, UL 1973, UL 9540A, UN 38.3 PCS: IEC 62477,EN IEC 61000		

Solution 1： High-Voltage Grid-Connected Energy Storage



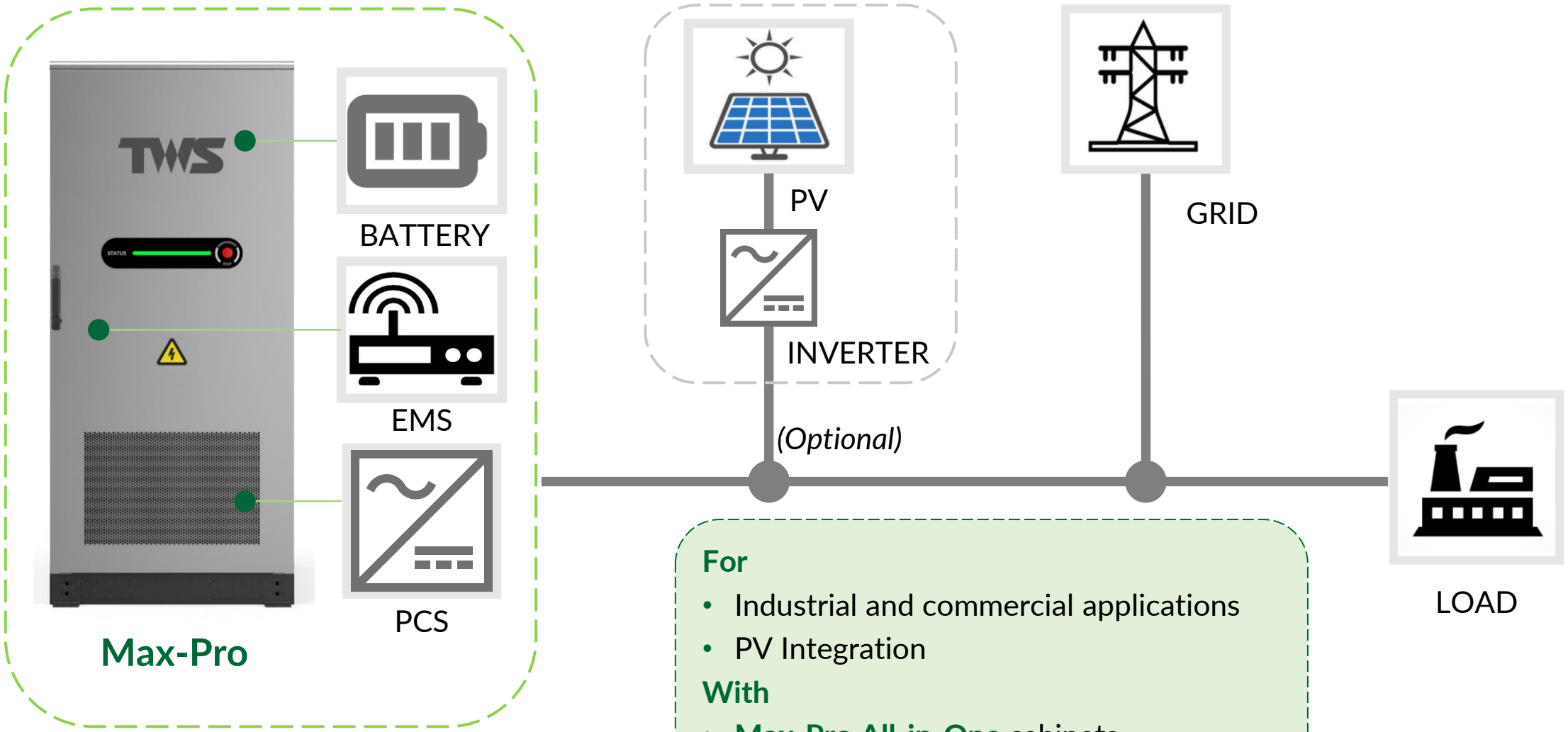
For

- Standalone energy storage station
- Renewable energy integration and storage

With

- ProeM315 cabinets / PowerCore / PowerMod containers for 0.5P/0.25P system

Solution 2: Low-Voltage Grid-Connected PV + Energy Storage



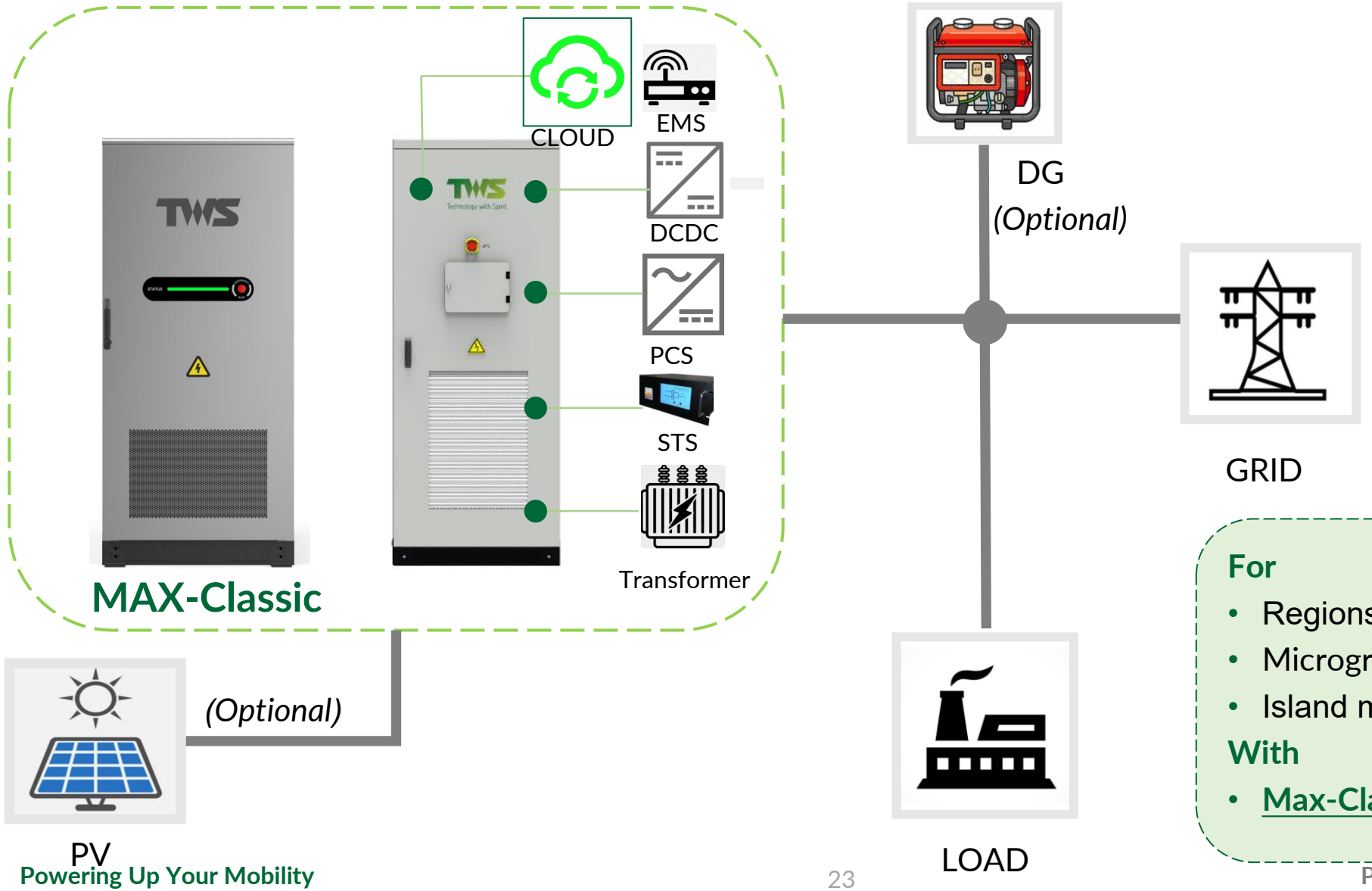
For

- Industrial and commercial applications
- PV Integration

With

- Max-Pro All-in-One cabinets

Solution 3: Low-Voltage Off-Grid & Micro-Grid Energy Storage
Storage + PV + Diesel



For
- Regions with unstable power
- Microgrids
- Island mode operation

With
- Max-Classic cabinet

TWS
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TWS ESS Services

Comprehensive System Solutions

Field Survey & Consultation

Technical Support & Training

Warehousing & Logistics

After-sales Service

TWS Technical Services

Consulting Services

- *Solution design and optimization*
- *Existing system diagnostics*
- *Profitability analysis*
- *Case studies*

O&M for TWS Equipment

- *Cloud platform regular inspections*
- *Fault recovery*
- *Equipment maintenance*

O&M for Third-party Equipment

- *Fault recovery*
- *System upgrades*
- *Equipment maintenance*

3

Featured Projects

TWS ESS in place: Deployed, Energized, Global

Technology with Spirit

TWS ESS solutions serve in:

- State Power Plants
- State Grid
- Manufacturing
- Aquaculture
- Agriculture
- Iron & Steel Groups
- Mining
- Automated Sawmills
- Municipal Sewage Treatment Plants
- Commercial Complexes
- Laboratories
- Industrial Parks
- EV Charging Stations
- Electric Dredging Vessels
- Microgrid Systems

Technology with Spirit

1.725 MW/ 5 MWh

The Netherlands

Delivery time: 2025

Application: Horticulture

on/off switch + energy arbitrage with PV

ESS product: PowerCore container

400 kW/ 978 kWh

The Netherlands

Delivery time: 2025

Application: Greenhouses

peak shifting

ESS product: ProeM cabinet

2.5 MW/ 5.24 MWh

Belgium

Delivery time: 2025

Application: Food processing

demand management + energy arbitrage

ESS product: Max-Pro cabinet

300 kW/ 978 kWh

The Netherlands

Delivery time: 2025

Application: Manufacturing

dynamic capacity expansion

ESS product: ProeM cabinet

500 kW/ 978 kWh

The Netherlands

Delivery time: 2025

Application: Municipal sewage treatment plant

peak shifting

ESS product: ProeM cabinet

500 kW/ 745 kWh

Germany

Delivery time: 2025

Application: Automated Sawmill, off-grid system, ESS+PV+diesel generator

ESS product: ProeM cabinet

500 kW/1.956 MWh

The US

Delivery time: 2025

Application: Commercial site load shedding

ESS product: ProeM cabinet

3.75 MW/ 7.45 MWh

The US

Delivery time: 2025

Application: Manufacturing microgrid

ESS product: ProeM cabinet

4.7 MW/5.9 MWh

South Africa

Delivery time: 2024

Application: Agriculture & aquaculture, PV+ESS
35 kV access, automatic on/off-grid switching

ESS product: ProeM cabinet

Technology with Spirit

1.63 MW/3.4 MWh

The Balkan Peninsula

Delivery time: 2025

Application: Industrial site, PV+ESS

ESS product: Max-Pro cabinet

2 MW/4.176 MWh

Korea

Delivery time: 2025

Application: Wind power plant

dynamic frequency regulation

ESS product: ProeM cabinet

1 MWh

Japan

Delivery time: 2025

Application: Electric dredging vessel
generator configuration & operation time reduction， backup power

ESS product: RACK

2MW/6.7 MWh

Japan

Delivery time: 2025

Application: Utilities

PV power plant

ESS product: ProeM cabinet

125 kW & 262 kWh

Vietnam

Delivery time: 2025

Application: Manufacturing

dynamic capacity expansion

ESS product: MU series cabinet

TWS
Technology with Spirit

125 kW & 262 kWh

Vietnam

Delivery time: 2025

Application: Municipal Building

low-carbon power supply

ESS product: Max-Solaris cabinet

1.89 MW/ 3.845 MWh

Hong Kong

Delivery time: 2025

Application: EV charging station

ESS product: MU series cabinet

1.2MWh
Huaibei

Delivery time: 2023

Application: ESS+PV+charging+diesel generator, automatic on/off-grid switching

ESS product: ProeM cabinet


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