GOODWE
Smart Energy Innovator

GoodWe

Portfolio and applications

We, the Smart Energy Innovator

GOODWE SOLUTIONS

0.7-250kW

Portfolio & Application

1. GoodWe company introduction
2. Residential Inverters
3. C&I inverters
4. Energy Storage products
5. Monitoring and Communication

GOODWE PRODUCT PORTFOLIO

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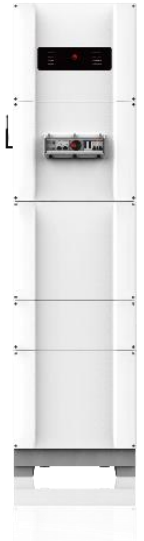

String inverters			Storage inverters		Battery storage	
Residential 0.7 – 15 kW	C&I 17 – 136 kW	Utility Scale 250 kW	Hybrid 3 – 50kW	AC coupled 3 – 50 kW	Battery (LV & HV)	All-in-one storage

Energy Management & Communications 0

Residential Series

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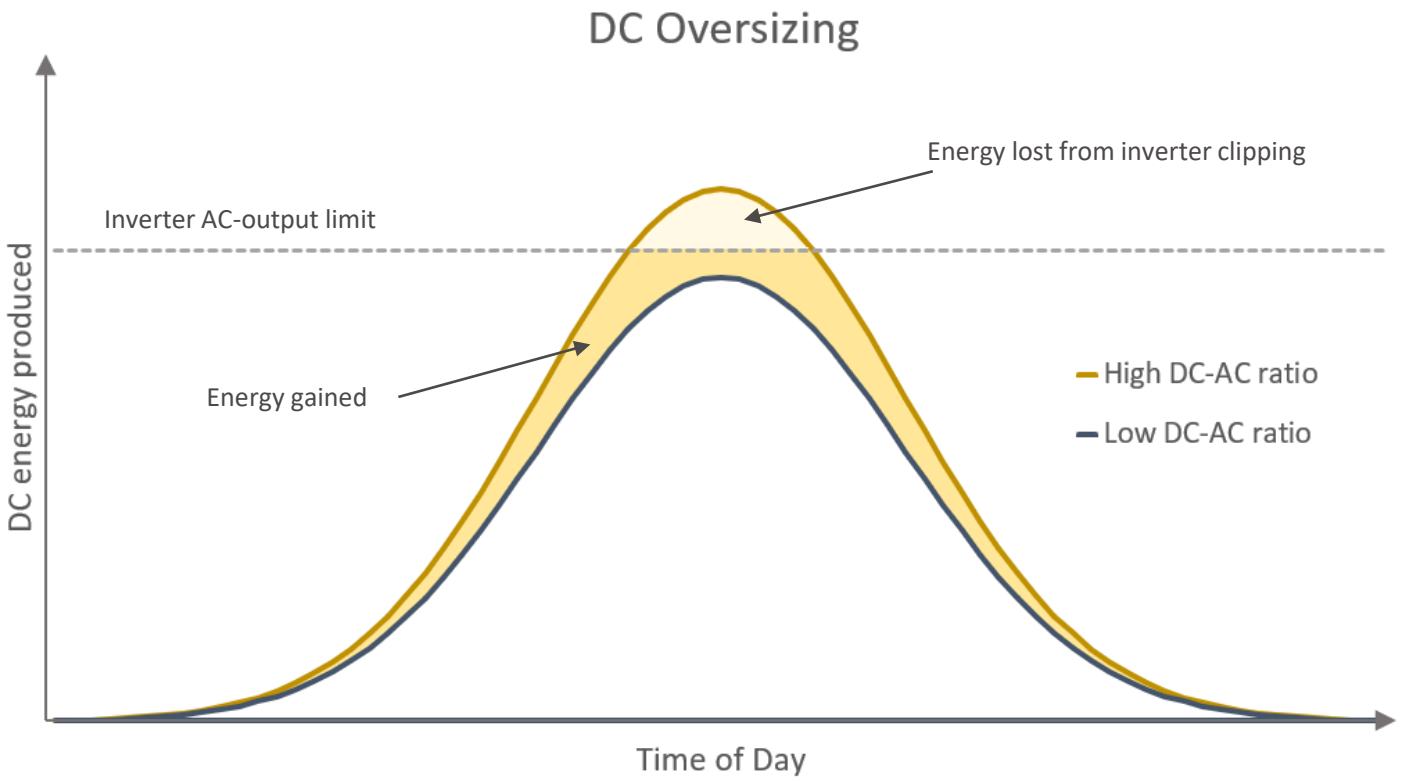
		XS PLUS+ Series	DNS Series	SDT G2 Series
				
Design	Nominal AC output	0.7 – 3 kW	3 – 6 kW	4 – 15 kW
	Grid Connection	1 phase	1 phase	3 phase
	MPPTs	**1**	**2**	**2**
	Maximum efficiency*	97.6 %	97.8 %	98.3 %
	Weight	5.8 kg	13 kg	18 kg
	Size (mm)	295 x 230 x 113	354 x 433 x 147	354 x 433 x 147
	Max DC Voltage	500 V	600 V	1000 V
	Cooling	Natural Convection	Natural Convection	Natural Convection 4-6 kW Fan cooled from 8 kW
	Compatible w. high current modules	Yes	No	Yes
Com.	Communication standard	Wi-Fi	Wi-Fi / RS485	Wi-Fi / RS485
	Communication optional	LAN / RS485	LAN / 4G / Bluetooth	LAN / 4G / Bluetooth
Protection	Protection degree	IP65	IP65	IP65
	Integrated SPD (AC/DC)	type III / type III	type III / type III	type III / type III (II. opt)

* Highest efficiency in the series

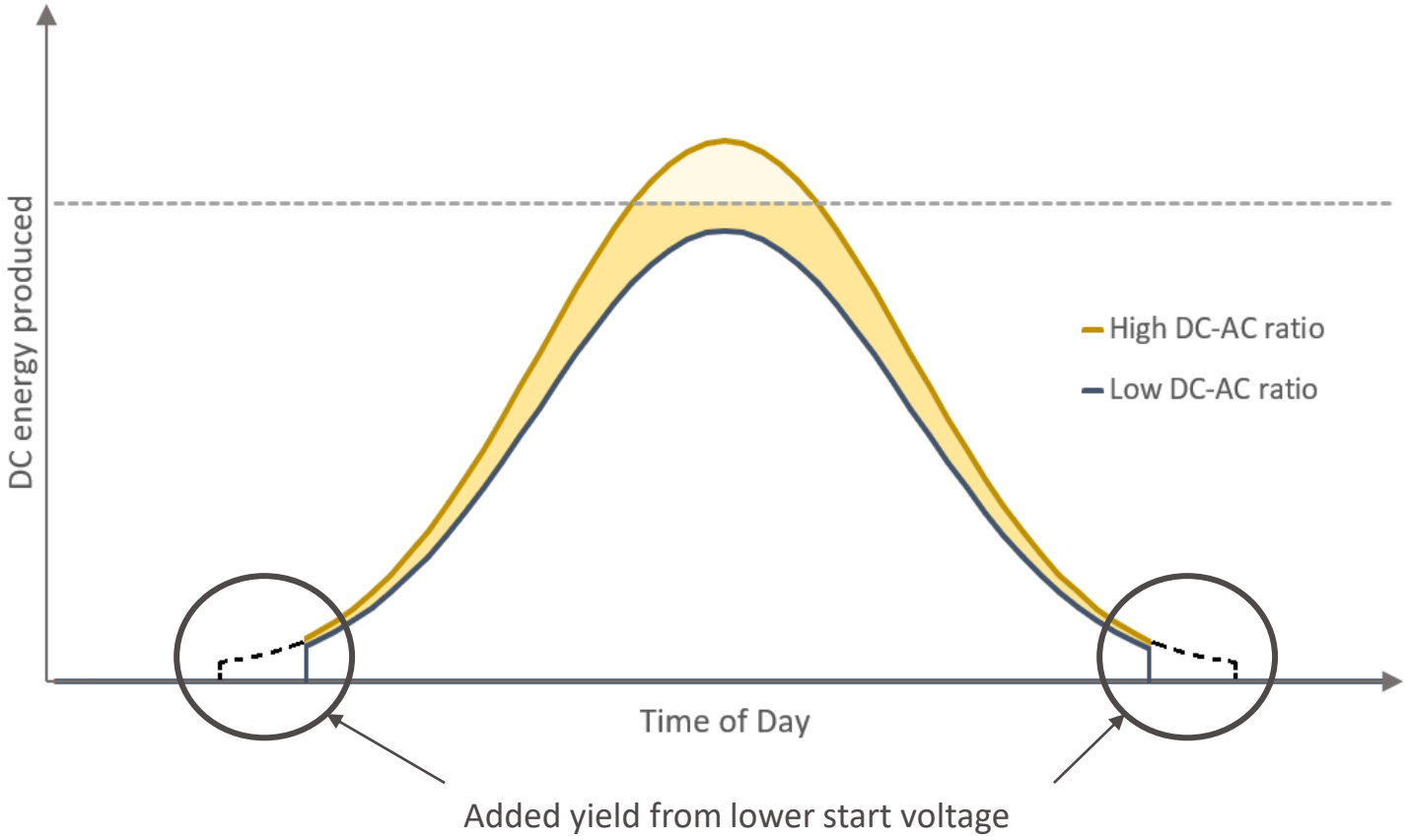
Up to 100% DC oversizing



DC oversizing can increase the overall yield.

Modules rarely reach peak capacity, especially if the tilt and azimuth is not optimal.

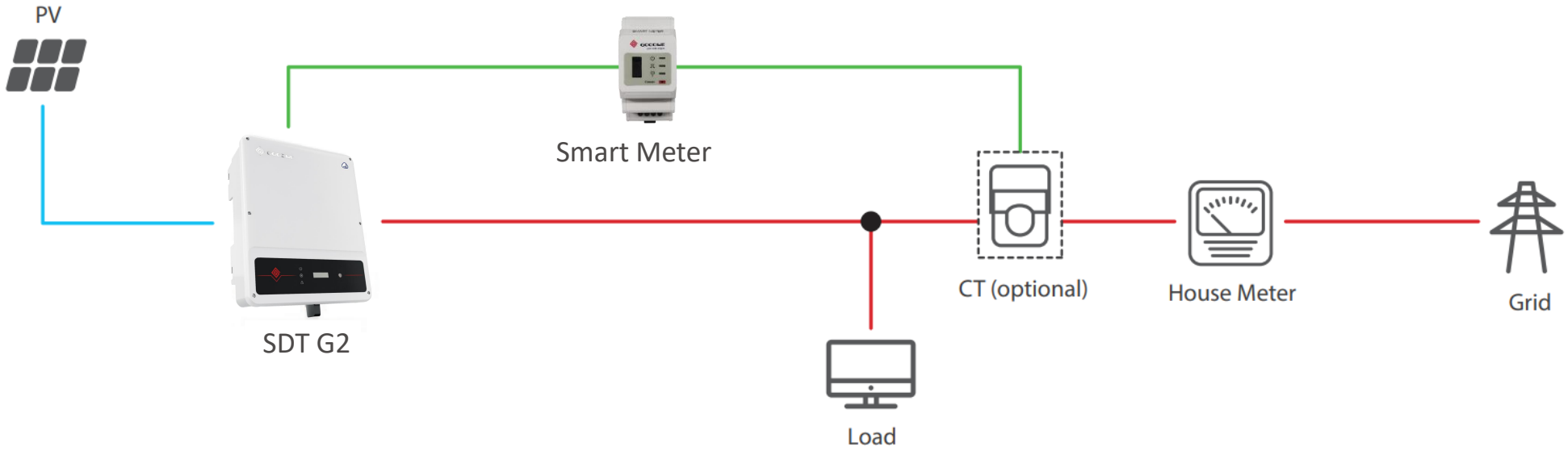
Increase Yield



Low start-up voltage increase the energy earlier and later during the day

GoodWe inverters offer a high Efficiency of up to 98.6%

Built in export limit function (for SDT G2)



SDT G2

- With GoodWe SmartMeter, it is possible to monitor generation and limit the export.

Fanless design

GoodWe residential inverters uses natural convection to regulate the temperature. No fan makes the inverters very quiet during operation.

SDT G2 Series on-grid inverters – key features

No removable panels during commissioning
All connections are made underneath the PV inverter using waterproof terminal adaptors.

Dual MPPTs
Multiple inputs per MPPTs for larger inverters

With or Without LCD Screen
SolarGo App used to configure and view inverter parameters.

Communication devices for Residential

Multiple units (SDT G2)

RS485

EzLogger Pro

LAN connection to router

Smart Meter for Power Monitor and Control

Single units

Internet communication

- Wi-Fi
- LAN
- 4G
- Bluetooth

Load Monitoring & Power Export

Homekit

- Homekit 1000
- Homekit 3000

Power Export

Smart Meter

- GM1000
- GM3000
- GM3000C
- GM1000D

CT 90

- Only for single phase!

Residential Overview

High Efficiency – More power and less heat

Flexible Designing – Multiple MPPT

Export Control – Simply with optional CT/Smart Meter

Easy Installation – Light weight & compact design

Reliable – High temp. range and IP65 protection

Quiet operation – Fanless design

SEMS – Free monitoring platform

Portfolio & Application

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GOODWE PRODUCT PORTFOLIO

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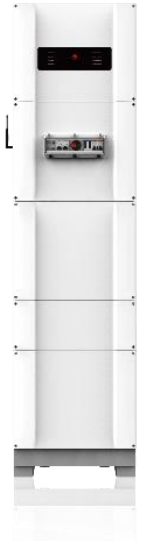

String inverters			Storage inverters		Battery storage	
Residential 0,7 – 15 kW	C&I 17 – 136 kW	Utility Scale 250 kW	Hybrid 3 – 50 kW	AC coupled 3 – 50 kW	Battery (LV & HV)	All-in-one storage

Energy Management & Communications

C&I Series

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		SDT G2 Series	SMT Series	MT Series	HT Series
			 NEW	 Phase out	
Design	Nominal AC output	17 – 25 kW	25 – 60 kW	80 kW	100 – 120 kW
	Grid Connection	3 phase	3 phase	3 phase	3 phase
	AC output Voltage	400 V	400 V	400 V – 540 V	400 V – 500 V
	MPPTs	2	3	4	10 - 12
	Input current	12.5 A	12.5 A	11 - 13.3 A	15 A
	Max efficiency*	98.4 %	98.8 %	99.0 %	99.0 %
	Max DC Voltage	1100 V	1100 V	1100 V	1100 V
Com.	Standard communication	RS485/ Wi-Fi	RS485/ Wi-Fi	RS485	RS485
	Optional communication	LAN	LAN / PLC	Wi-Fi / PLC	Wi-Fi / PLC
Protection	Protection degree	IP65	IP65	IP65	IP66
	SPD Types AC/DC	III/III (II opt. DC)	III/III (II opt. DC&AC)	II/II	II/II
	PID recovery function	-	Optional	Optional	Optional
	AFCI	Optional	Optional	Optional	Optional

* Highest efficiency in the series

Utility Series

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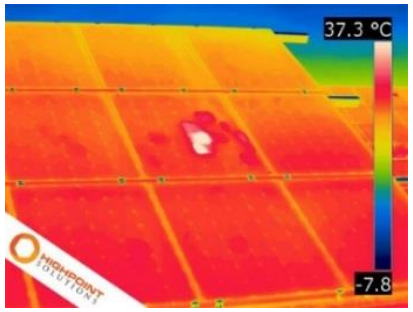
		HT Series	
		GW250K-HT	GW250KN-HT
			
Design	Nominal AC output	250 kW	250 kW
	AC output Voltage	800 V	800 V
	MPPTs	12	6
	Number of DC inputs	24	18
	DC Input current per MPPT	30 A	60 A
	Max efficiency	99.0 %	99.0 %
	IP protection rating	IP66	IP66
	Max DC Voltage	1500 V	1500 V
	Communication	RS485 & PLC & Bluetooth	RS485 & PLC & Bluetooth
Protection	DC Switch	Integrated	Integrated
	SPD Types AC/DC	II/II	II/II
	PID recovery function	Optional	Optional
	Reactive power compensation	Optional	Optional

MPPT Optimization



Hot Spot


Different tilt and azimuth


Shattered

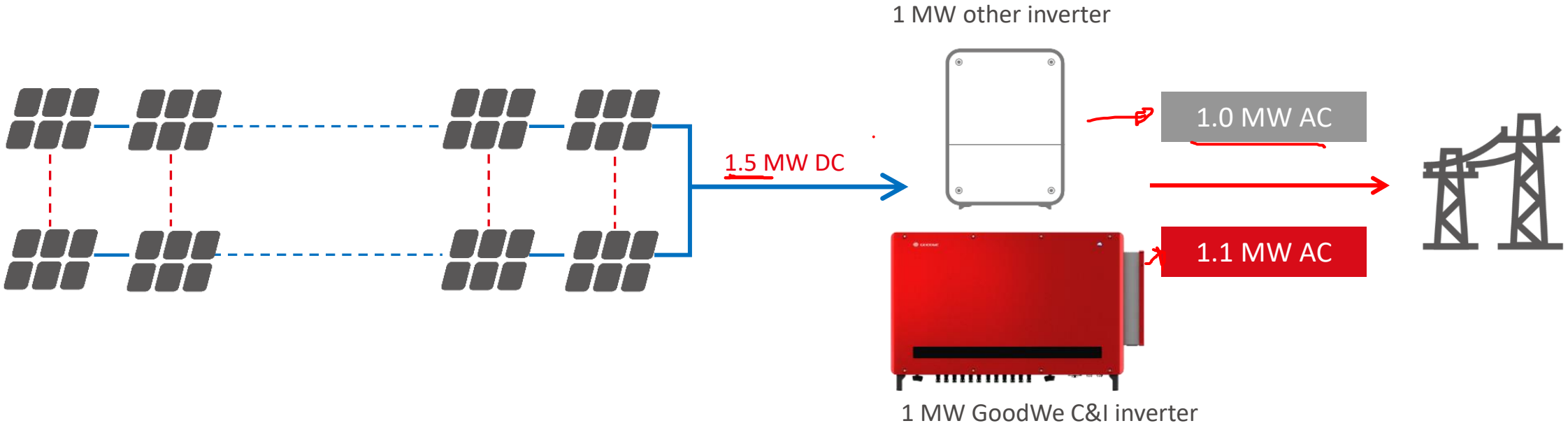

Dirt


Shading


Mismatch

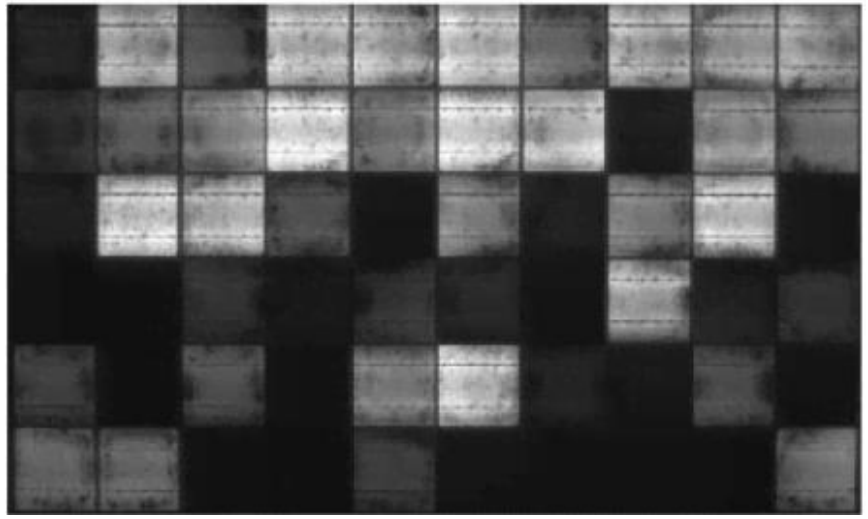
With up to 12 MPPT, HT series inverters significantly reduce PV array losses.

More AC Power



GoodWe inverter can increase the power output above the nominal power

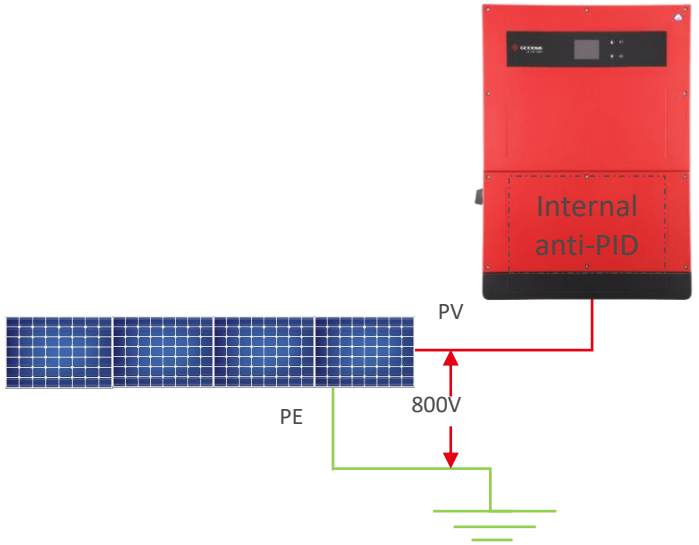
PID recovery function



EL Imaging (After PID Effect)

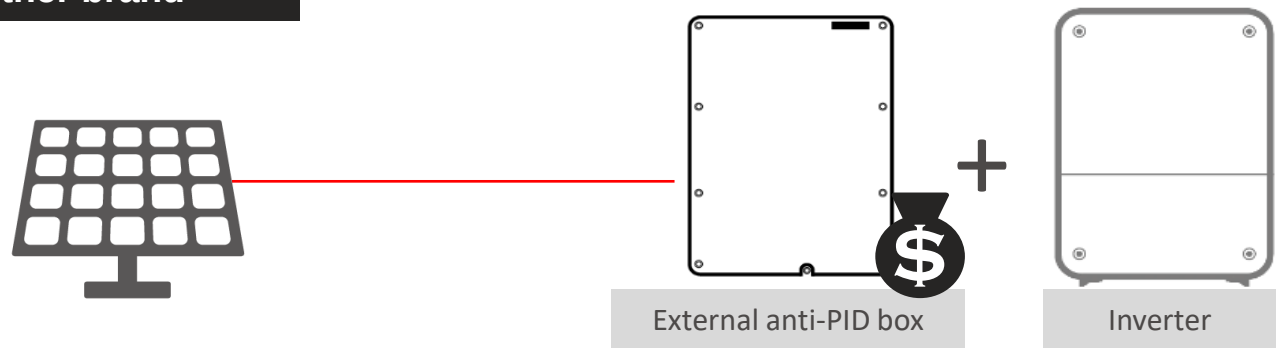
Due to humidity and the high potential of the modules, the silicon loses charge carriers which leads to an accelerated aging of the modules.

By nightly "polarity reversal" of the strings, PID effects are "repaired" at night.



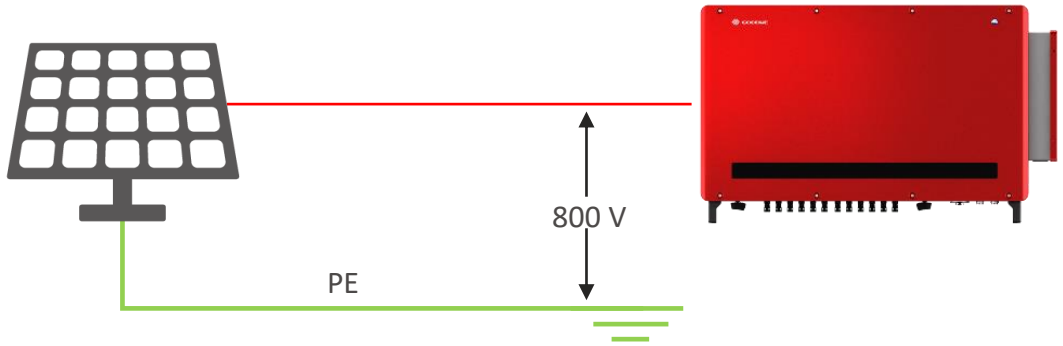
PID-Recovery Board Integrated

Other brand



- Extra expense spent external Anti-PID box

GoodWe HT series

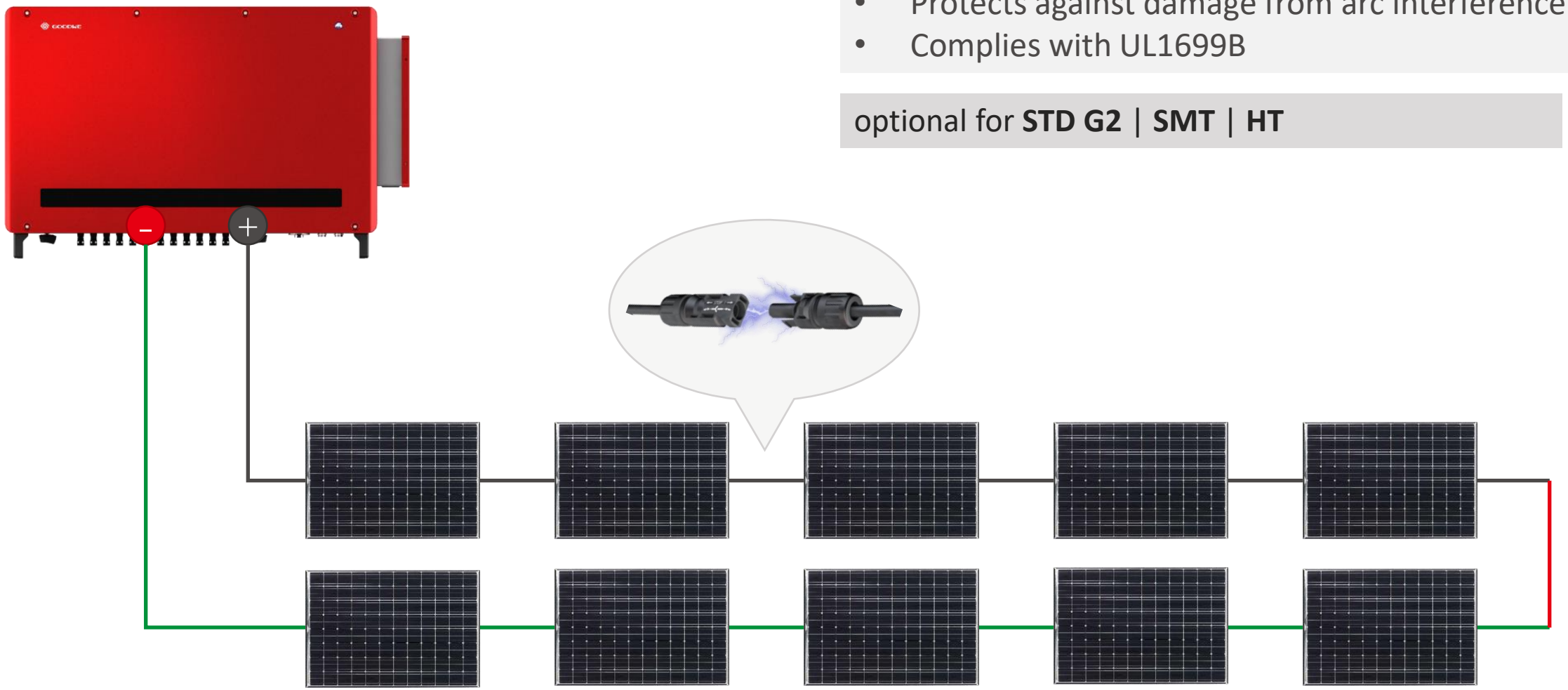


- The PID-Recovery function applies a reverse 800 V voltage between modules negative and PE during the night.
- Retrofit on field possible (only SMT & MT)

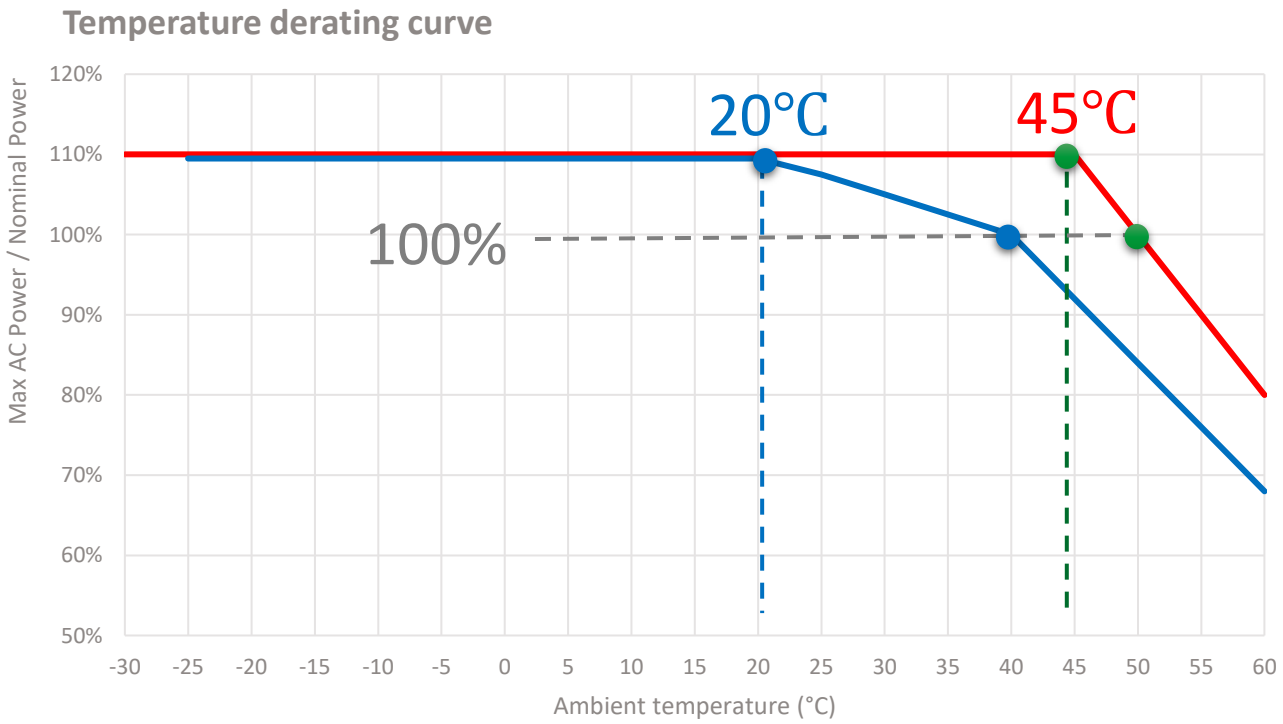
AFCI - Arc fault circuit interrupter

- Protects against damage from arc interference
- Complies with UL1699B

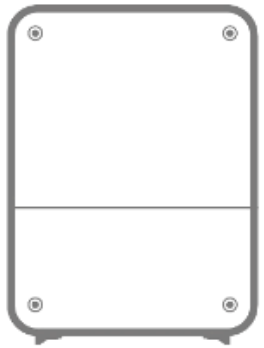
optional for **STD G2** | **SMT** | **HT**



High Temperature Adaptability



VS.



GoodWe C&I inverters

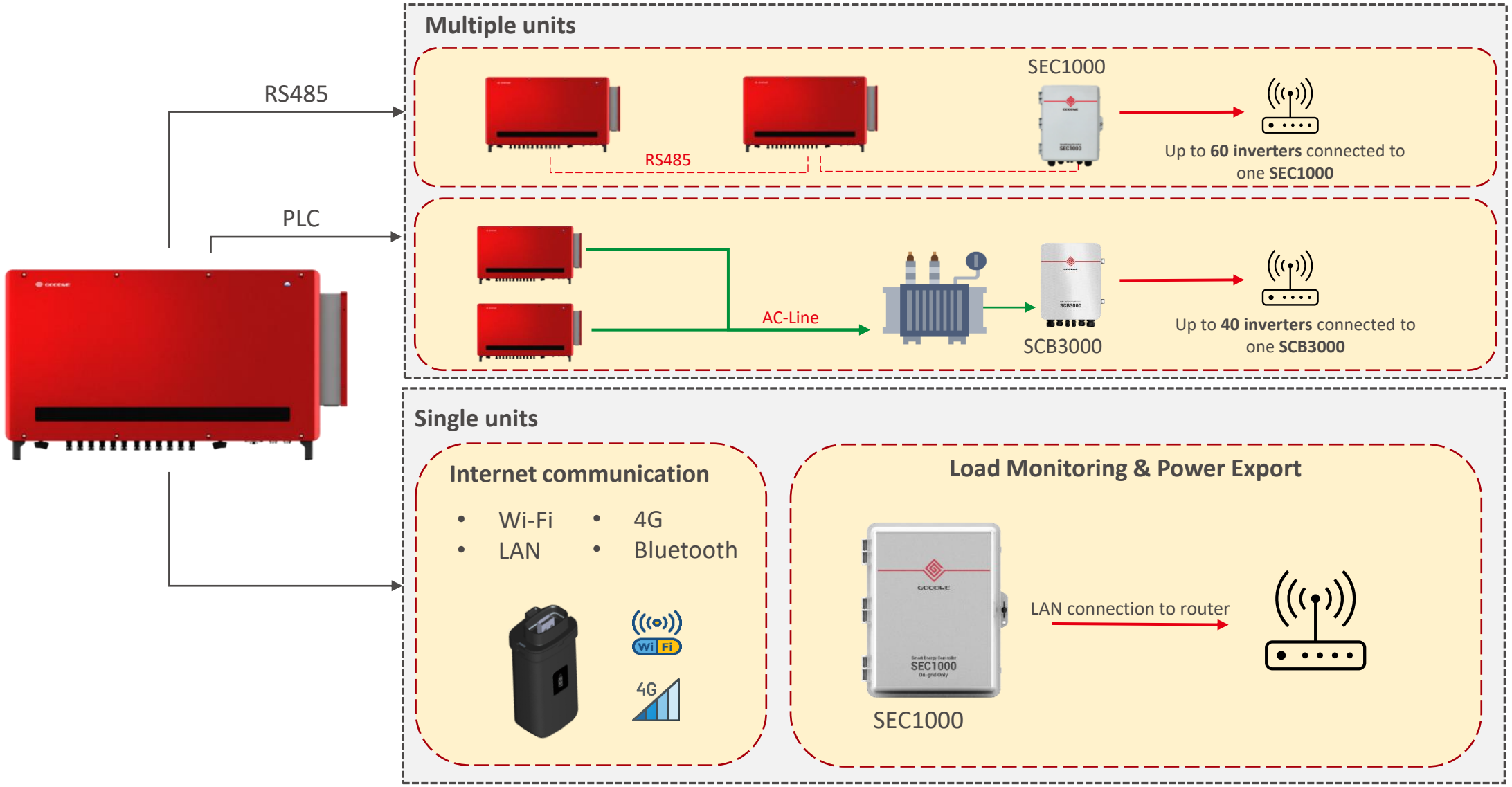
Other inverter

IP68 fan equipped on GoodWe HT series

Derating threshold value of 45℃ of C&I Portfolio contributes to higher yield in mild and hot areas.

GW50KN-MT: 50°C
C&I Portfolio: 45°C

Communication devices for C&I and Utility



C&I & Utility Overview

High Efficiency – More power and less heat

Robust design – Low weight/volume for easy installation

High yields - Full power operation up to 45°C or 50°C

Up to **10% extra AC** power

Reliable – High temp. range and IP65 protection

Flexible communication – Wi-Fi / RS485 / PLC / LAN / 4G

SEMS - Free monitoring platform

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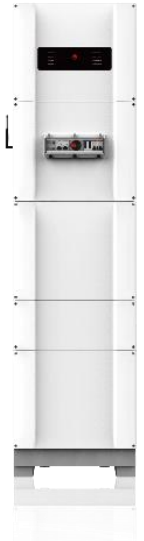

String inverters

Residential	C&I	Utility Scale
0,7 – 15 kW	17 – 136 kW	250 kW

Storage inverters

Hybrid	AC coupled
3 – 50 kW	3 – 50 kW

Battery storage

Battery	All-in-one
(LV & HV)	storage

Energy Management & Communications

Why Batteries?

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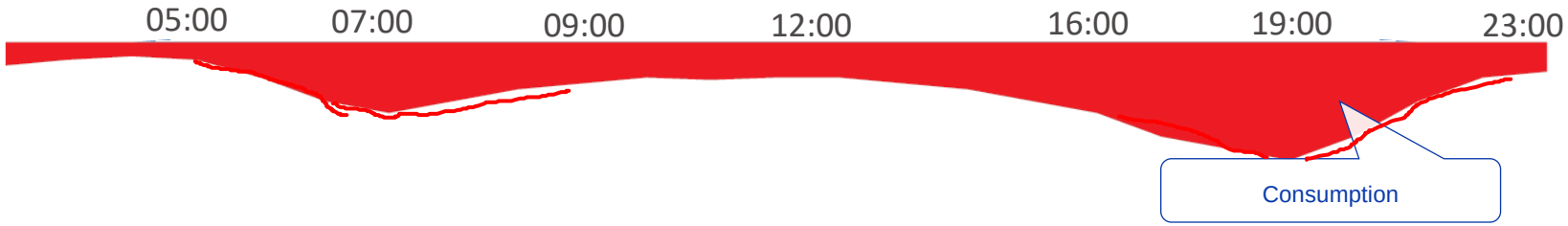
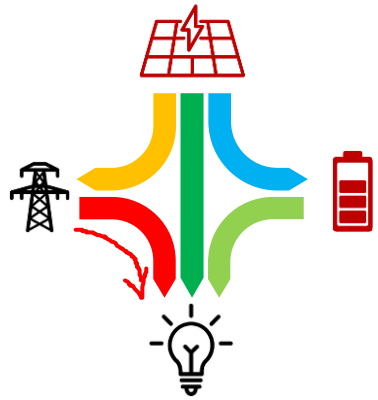
No PV

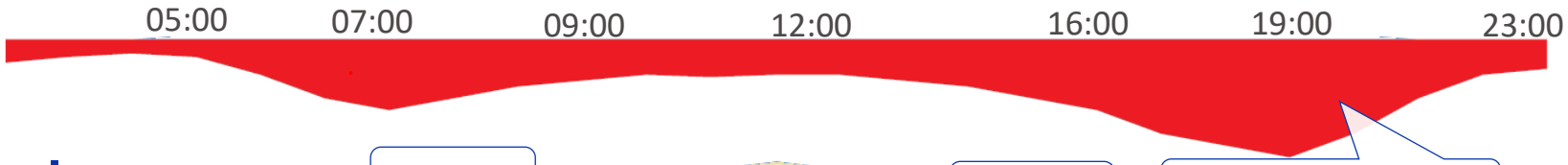




MORNING NOON EVENING

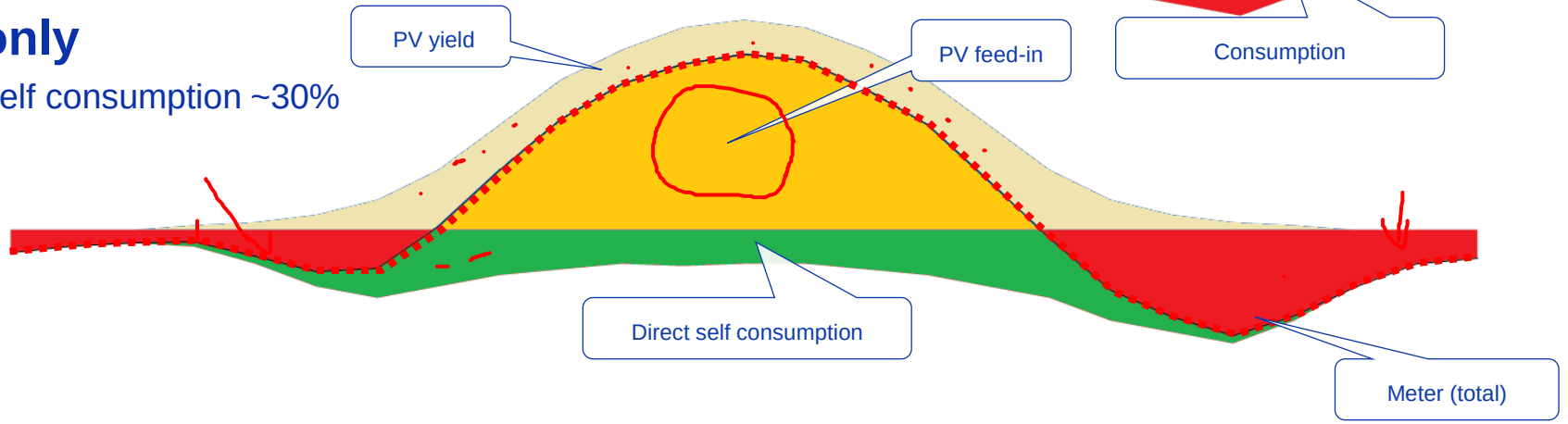
Why Batteries?

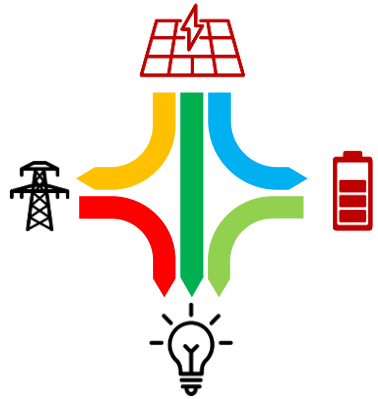
No PV



PV only

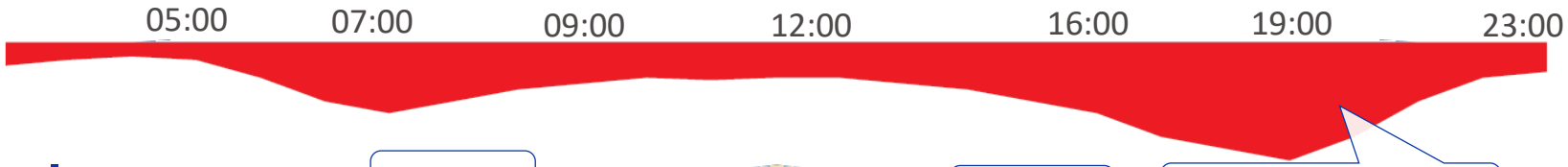
Avg. Self consumption ~30%





Why Batteries?

No PV



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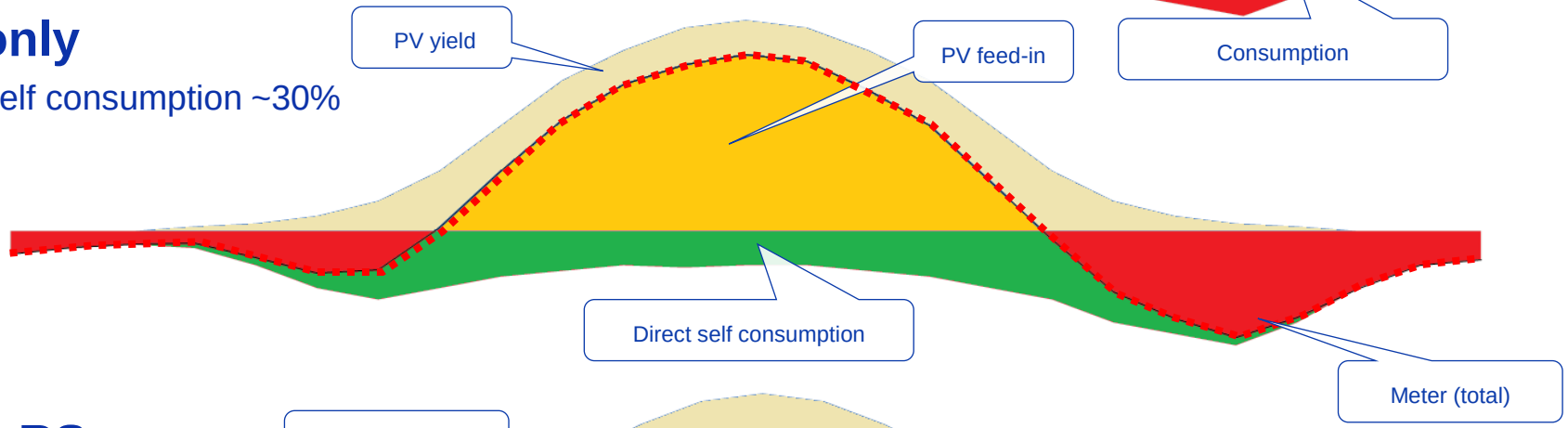
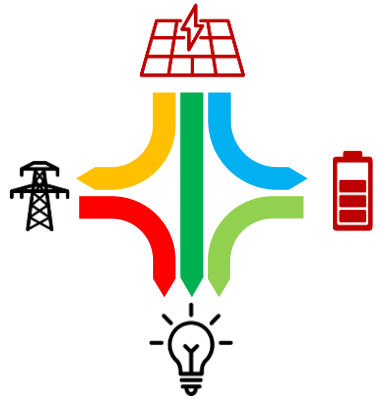
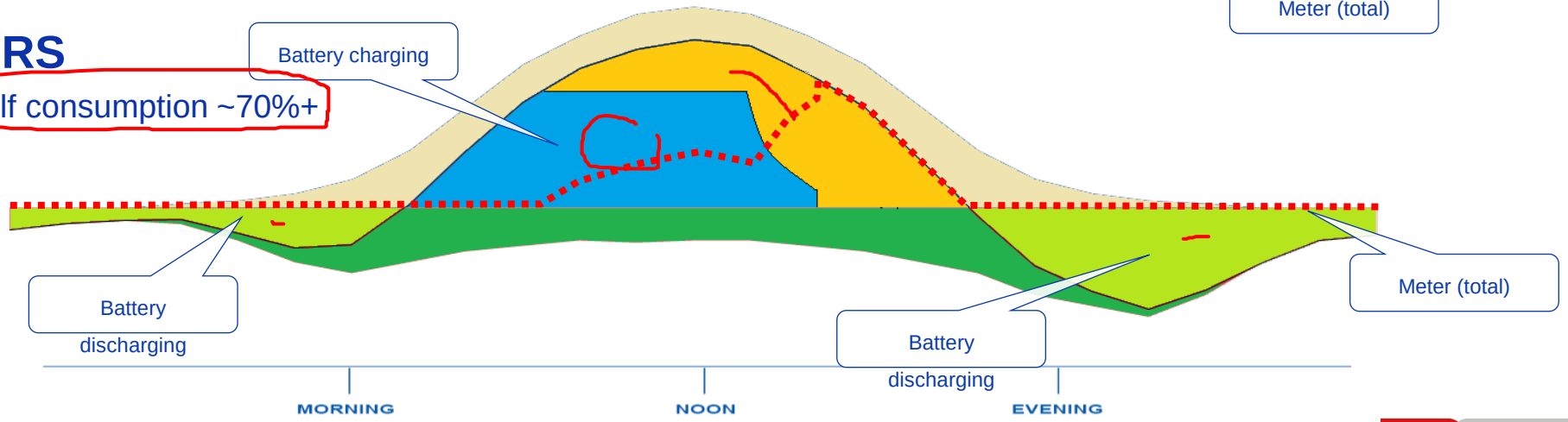




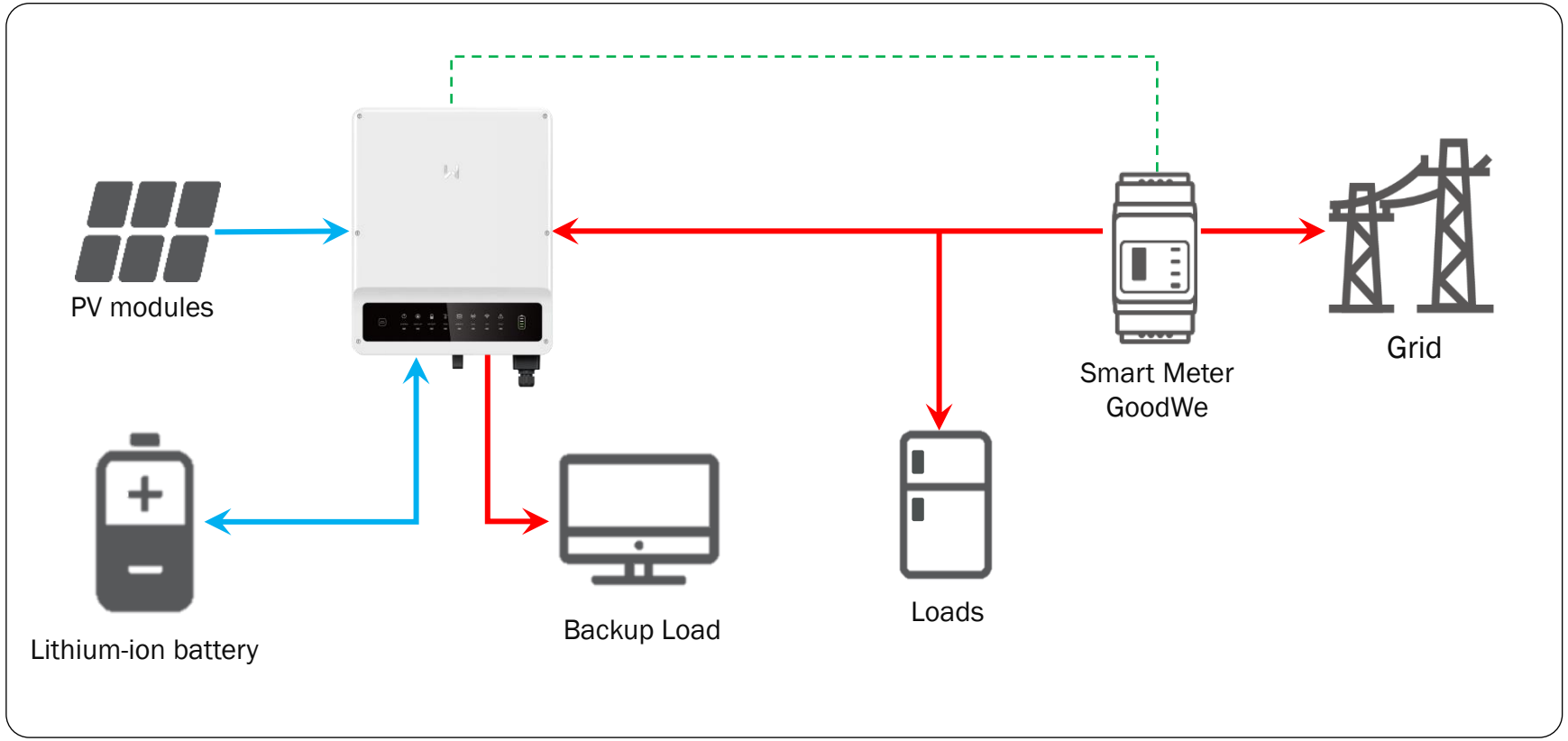
PV + RS

Avg. Self consumption ~70%+



Hybrid inverter concept

“Grid connection with storage”



- Grid-tied inverter
- Storage capacity (Li-ion battery)
- Backup AC line grid-independent

- No priority between loads
- UPS Switching time ≤ 10 ms

- Possibility to limit export to the grid

Hybrid Series (Residential)

	EM Series	ES Series	ESA Series	EH PLUS+ Series	ET PLUS+ Series
					
Nominal AC output	3.6 – 5 kW	3 – 6 kW	5 kW + 9.6 kWh	3.6 – 6 kW	5 – 10 kW
Grid Connection	**1 phase**	**1 phase**	**1 phase**	**1 phase**	**3 phase**
Lithium Battery	**Low Voltage**	**Low Voltage**	**Low Voltage**	**High Voltage**	**High Voltage**
MPPTS	1 - 2	2	2	2	2
Max. Discharge / Charge Power	2.3 kW	6 kW	5 kW	6 kW	10 kW
Max. Backup load	2.3 kW	6 kW	4.6 kW	6 kW	10 kW
Parallel connection	-	-	-	-	With SEC1000S
Compatible with high power modules	-	-	-	Yes	Yes
Cooling technology	Natural Convection	Natural Convection	Natural Convection	Natural Convection	Natural Convection
Battery ready grid version	-	-	-	With activation code	With activation code
IP Rating	65	65	54	66	66

Standard Features

- Wi-Fi Comms
- App based commissioning via PV Master
- < 10ms backup transfer time
- LED Display
- Smart Meter for Power Control

Retrofit / AC Coupled inverter concept

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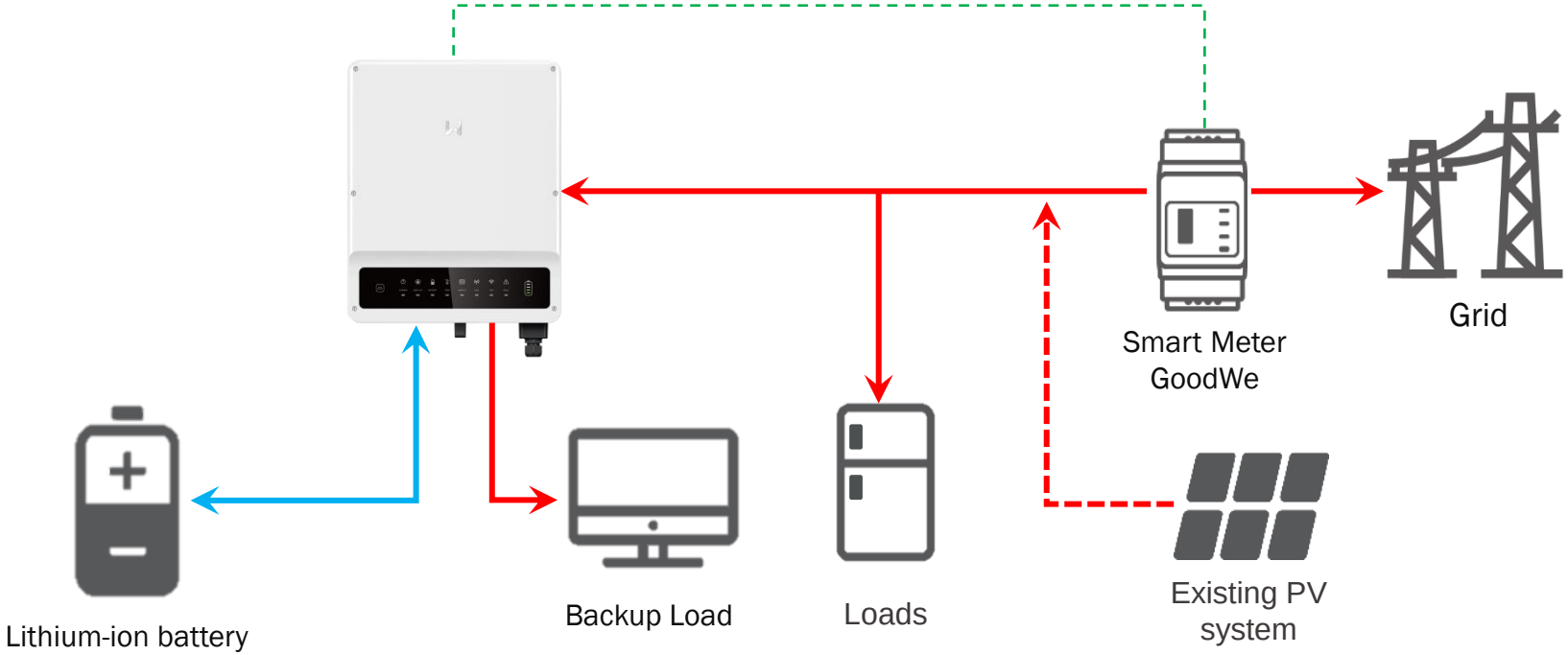
“Energy optimization with battery”



- Grid-tied inverter
- Storage capacity (Li-ion battery)
- Backup AC line grid-independent
- No priority between loads
- UPS Switching time ≤ 10 ms
- Possibility to limit export to the grid

AC Coupled (Retrofit) Series (Residential)

	SBP G2 Series	BH Series	BT Series
			
Capacity	3.6 – 5 kW	3 – 6 kW	5 – 10 kW
Grid Connection	1 Phase	1 Phase	3 Phase
Battery Connection	Low Voltage	High Voltage	High Voltage
Battery Type	Li Ion	Li Ion	Li Ion
Back up Power	6 kW	6 kW	10 kW
Discharge / Charge Power	6 kW	6 kW	10 kW
Parallel Connection	-	-	With SEC1000S
IP Rating	IP65	IP66	IP66

Standard Features

- Wi-Fi Comms
- CAN Battery Comms
- App based commissioning via PV Master
- < 10ms backup transfer time
- LED Display
- Smart Meter for Power Control

Hybrid and Retrofit Series (C&I)

	ET 15-30	ETC	BTC (retrofit)
			
Nominal AC output	15 – 30 kW	50 kW	50 kW
Grid Connection	**3 phase**	**3 phase**	**3 phase**
Lithium Battery	**High Voltage**	**High Voltage**	**High Voltage**
MPPTS	2 - 3	1 (8 string/MPPT)	
Max. Discharge / Charge Power	15/20/2x12.5/2x 15	50 kW	50 kW
Max. Backup load	Pn	50 kW	50 kW
Parallel connection	-	-	-
Compatible with high power modules	Yes	Yes	Yes
Cooling technology	Smart Fan Cooling	Smart Fan Cooling	Smart Fan Cooling
IP Rating	IP65	IP20	IP20

Standard Features

- Wi-Fi Comms
- CAN Battery Comms
- App based commissioning via PV Master
- < 10ms backup transfer time
- LED Display
- Smart Meter for Power Control

Reliable, quiet and efficient

-25...+60°C

Ambient Temperature range

45 °C

Full Load Operation

IP65

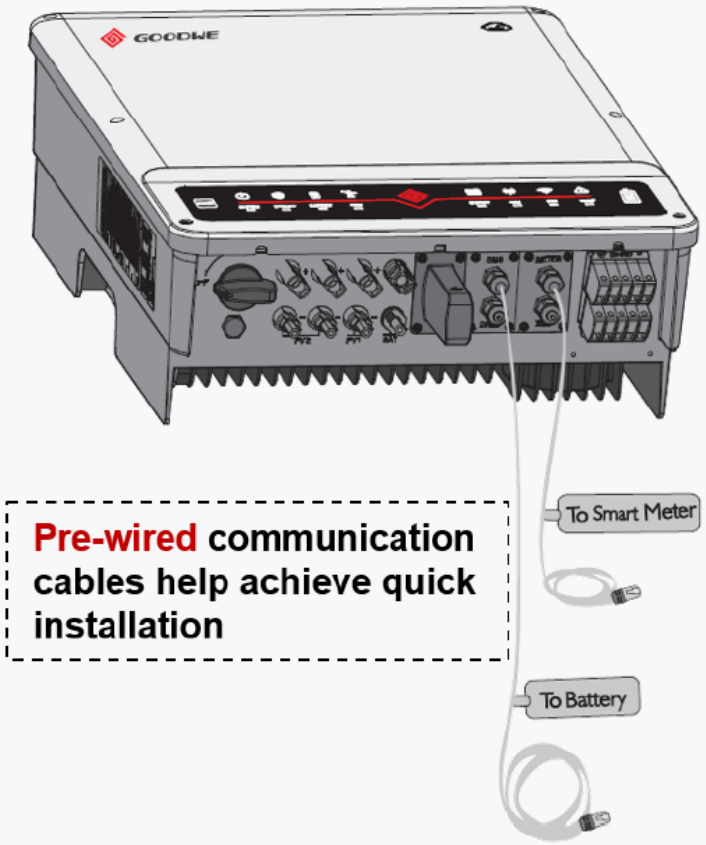
Humidity and dust proof

4000m

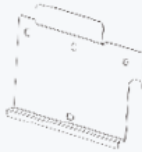
Operating altitude

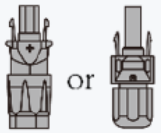
Fanless Cooling

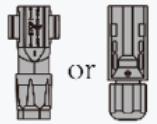
One Stop: Provide all Components with Pre-wired Cables



Pre-wired communication cables help achieve quick installation


Wall-mounted Bracket X1


Positive PV Plug X 2or3

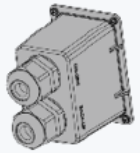

Negative PV Plug X 2or3


Positive BAT Plug X1


Negative BAT Plug X1


PE Terminal X1


Expansion Bolts X1


AC Cover X1


Pin Terminal X12


User Manual X1


Quick Installation Guide X1

Smart Meter & CT

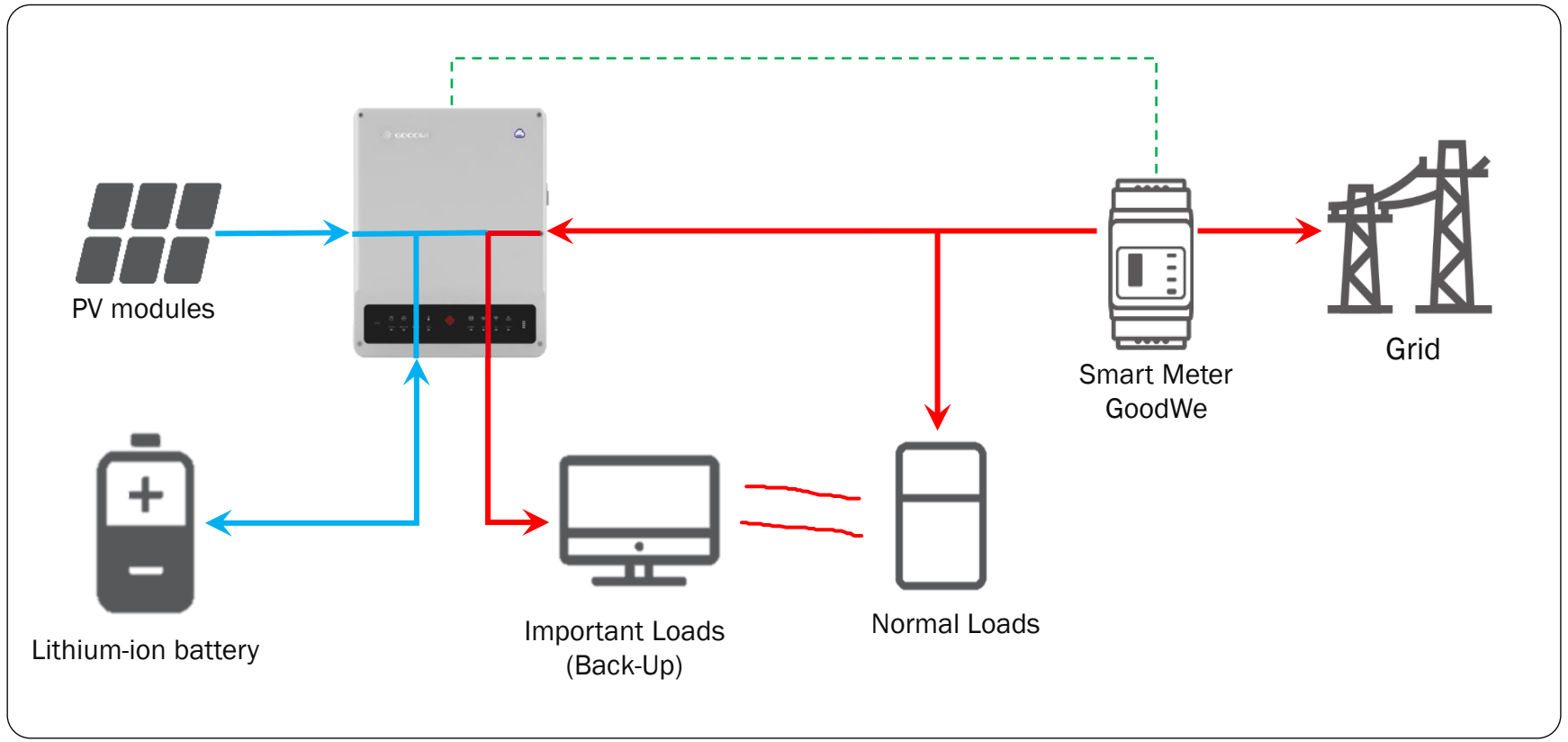
Wi-Fi Module

Bluetooth Module for ET & ES

Communication Spliters * 5 (For ET paralleling cases)

Hybrid Inverter Concept

“On-grid inverter with battery”



- Grid-connected inverter
- Possibility to connect battery
- Independent back-up loads
- No priority of the loads
- Back-up switch time ≤ 10 ms (same as the UPS)
- Possible to limit power exported to the grid

Hybrid Inverter Concept

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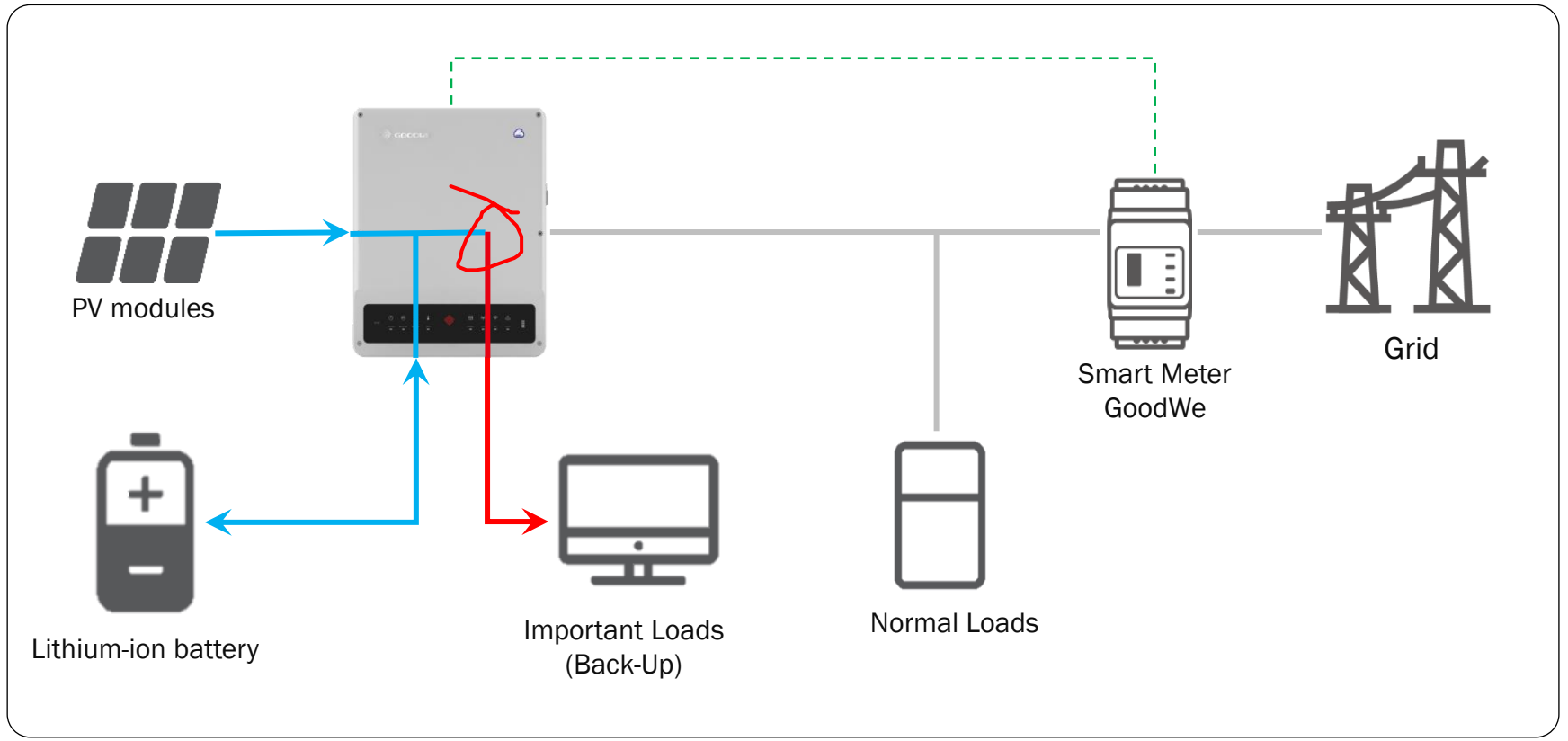
“Grid Failure”



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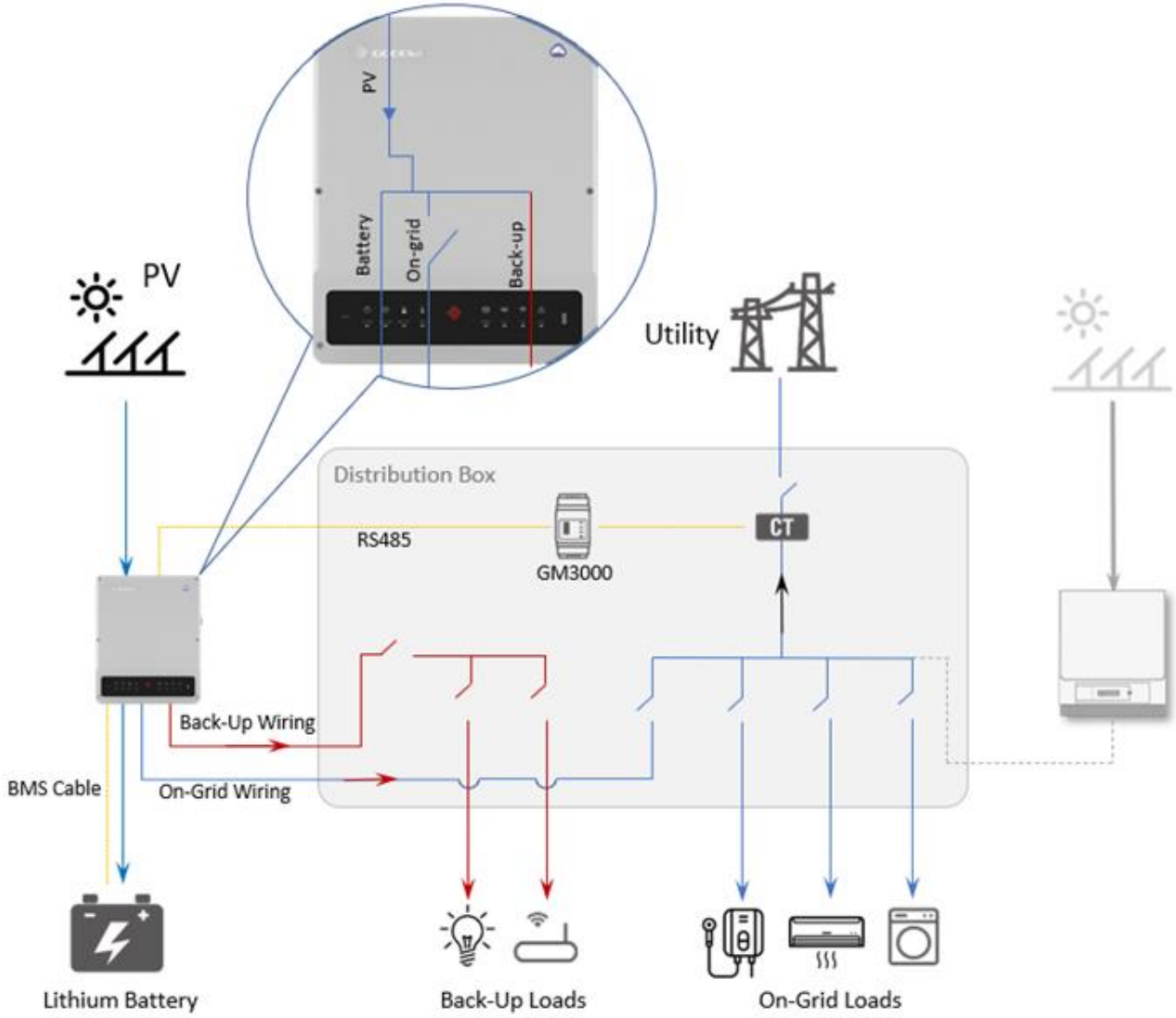
- No priority of the loads
- Back-up switch time ≤ 10 ms (same as the UPS)
- Possible to limit power exported to the grid

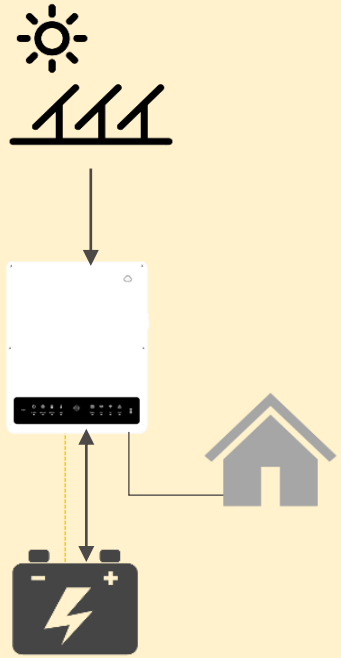
Integrated Back-up function

- UPS Level switch time <10 ms
- Integrated, no external equipment required
- PV supply also during backup
- 100% unbalanced output (ET series)
- High backup load capability (up to nominal AC power except EM series)



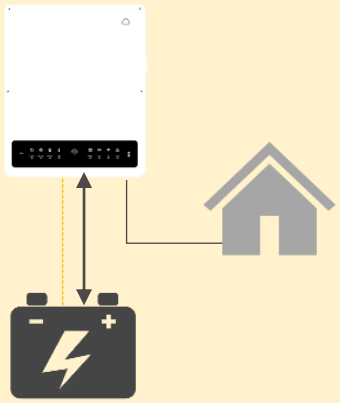
Flexible Application Possibilities

New Hybrid Installation

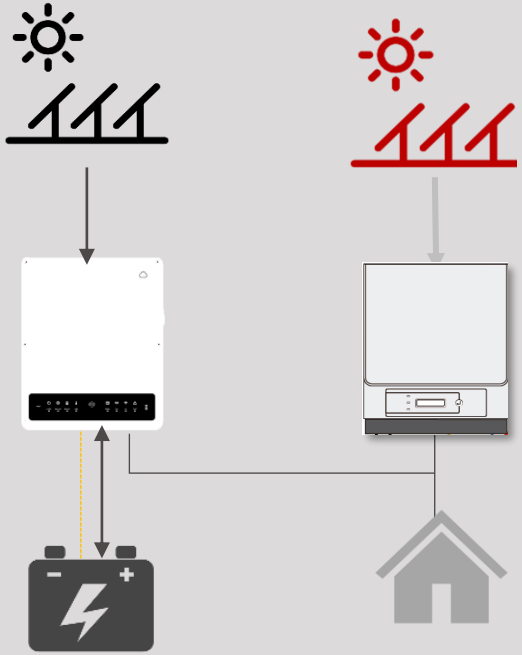


Also as Battery-ready solution (EH). Upgrade with software code

New Battery Installation

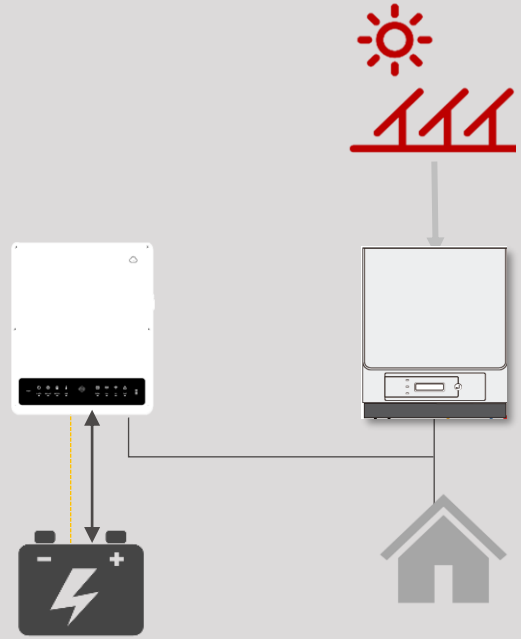


Add Hybrid to existing installation



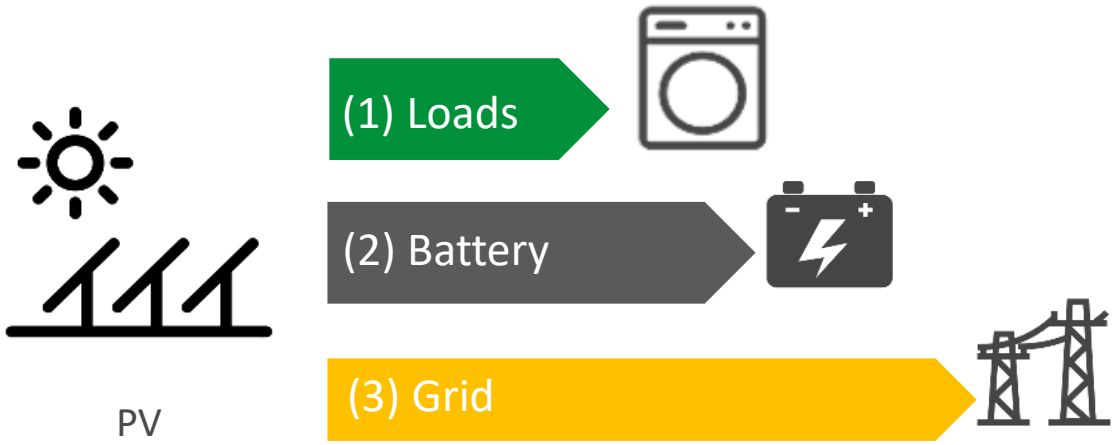
Also as Battery-ready solution (EH). Upgrade with software code

Add Battery to existing installation

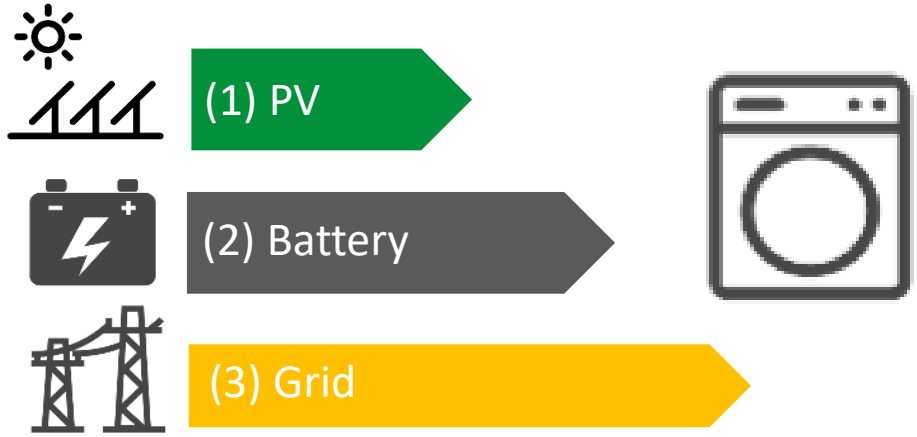


Prioritise self consumption

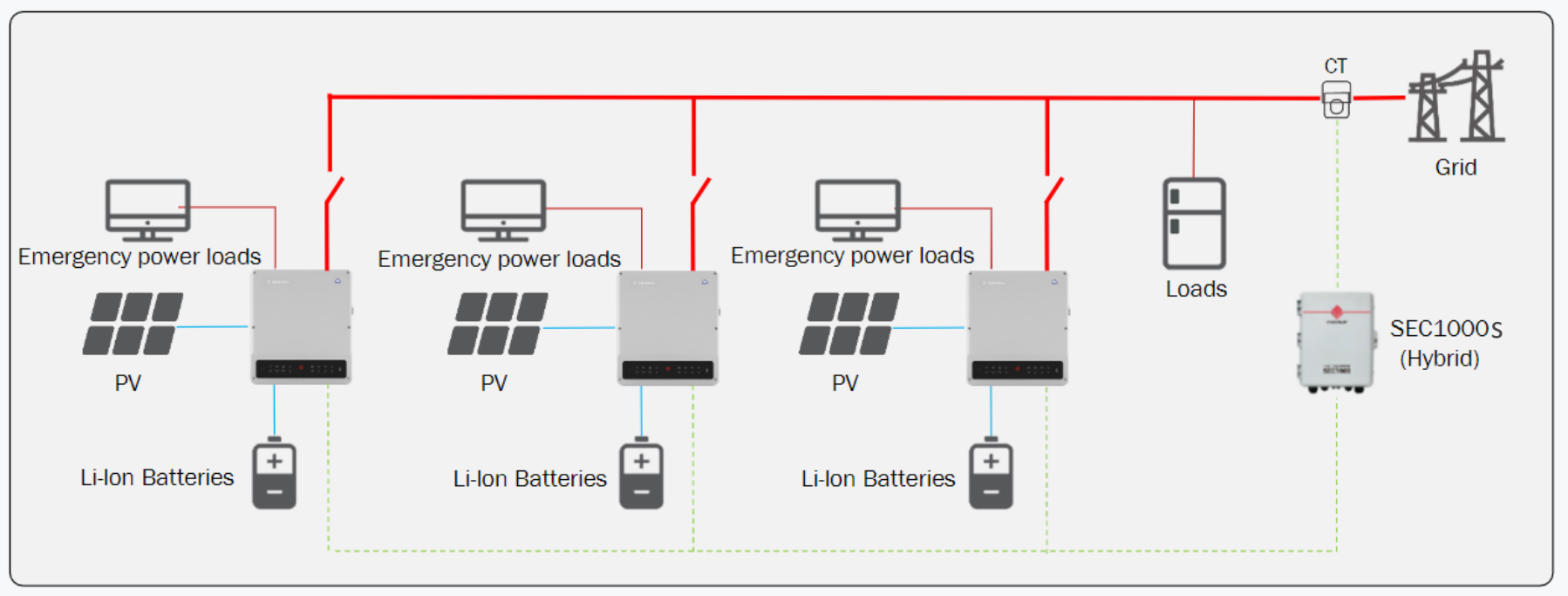
PV Supply priority:



Load consumption priority:



ET/BT Series – Parallel Option with SEC1000S



Max 100 kW AC • Unbalanced Output • Smart Control

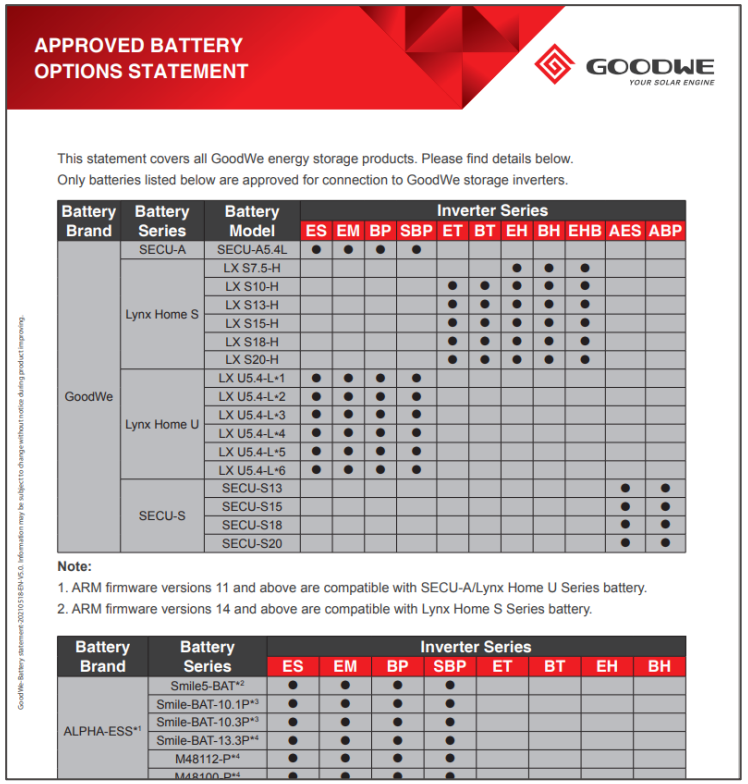
Compatible Batteries

GOODWE Smart Energy Innovator

GOODWE YOUR SOLAR ENGINE · BYD · PYLONTECH · LG · SOLUNA · Alpha·ESS · Dyness ENERGY STORAGE SYSTEM

Always check the **GoodWe website** for the latest batteries compatible with our inverters.

Download GoodWe Brochures and Manuals



APPROVED BATTERY OPTIONS STATEMENT

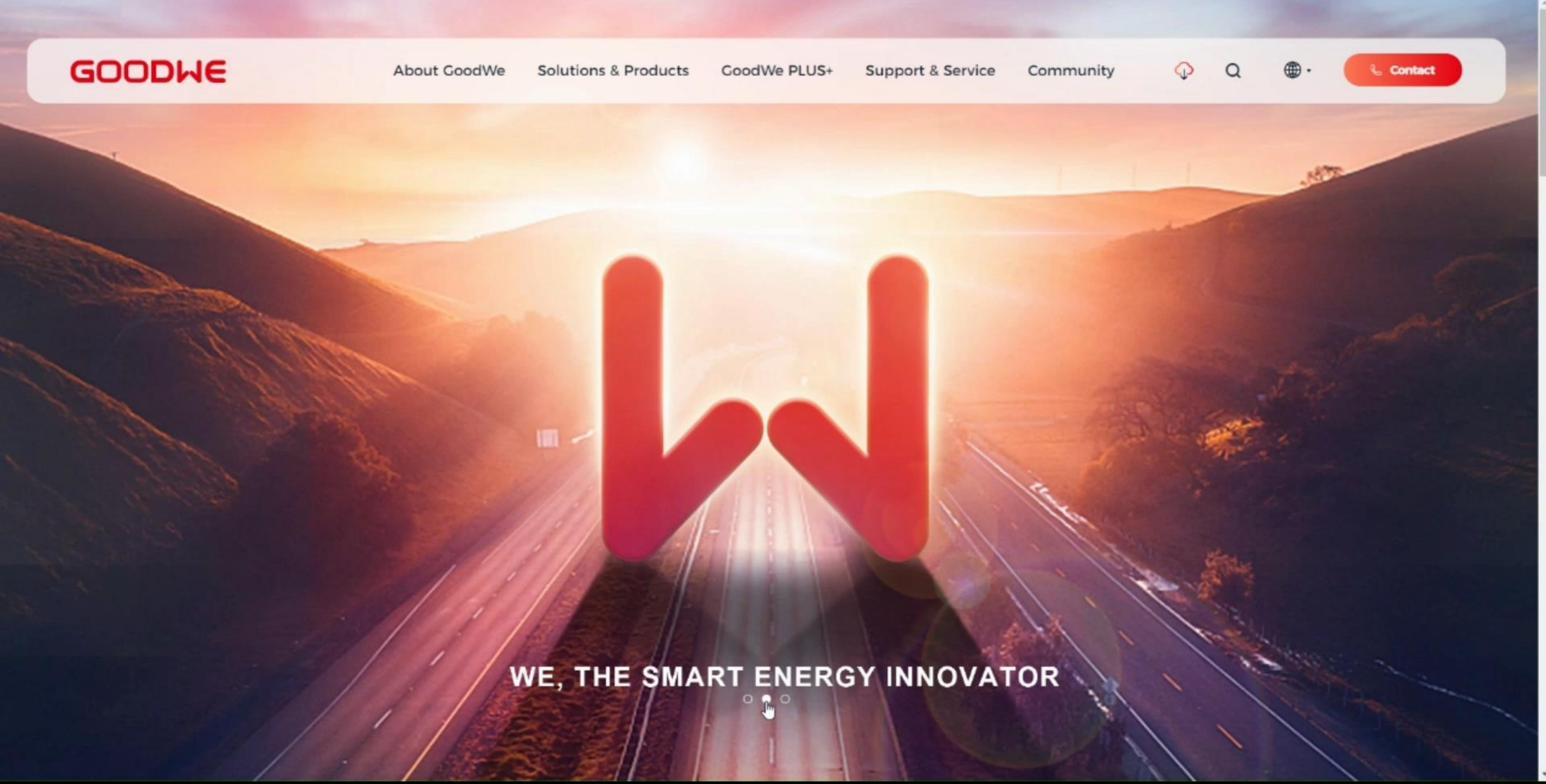
GOODWE YOUR SOLAR ENGINE

This statement covers all GoodWe energy storage products. Please find details below.
Only batteries listed below are approved for connection to GoodWe storage inverters.

Battery Brand	Battery Series	Battery Model	Inverter Series										
			ES	EM	BP	SBP	ET	BT	EH	BH	EHB	AES	ABP
GoodWe	SECU-A	SECU-A5.4L	●	●	●	●							
	Lynx Home S	LX S7.5-H							●	●	●		
		LX S10-H					●	●	●	●	●		
		LX S13-H					●	●	●	●	●		
		LX S15-H					●	●	●	●	●		
		LX S18-H					●	●	●	●	●		
		LX S20-H					●	●	●	●	●		
	Lynx Home U	LX U5.4-L*1	●	●	●	●							
		LX U5.4-L*2	●	●	●	●							
		LX U5.4-L*3	●	●	●	●							
		LX U5.4-L*4	●	●	●	●							
		LX U5.4-L*5	●	●	●	●							
		LX U5.4-L*6	●	●	●	●							
	SECU-S	SECU-S13										●	●
		SECU-S15										●	●
		SECU-S18										●	●
		SECU-S20										●	●

Note:
1. ARM firmware versions 11 and above are compatible with SECU-A/Lynx Home U Series battery.
2. ARM firmware versions 14 and above are compatible with Lynx Home S Series battery.

Battery Brand	Battery Series	Inverter Series							
		ES	EM	BP	SBP	ET	BT	EH	BH
ALPHA-ESS*1	Smile5-BAT*2	●	●	●	●				
	Smile-BAT-10.1P*3	●	●	●	●				
	Smile-BAT-10.3P*3	●	●	●	●				
	Smile-BAT-13.3P*4	●	●	●	●				
	M48112-P*4	●	●	●	●				
	M48100-P*4	●	●	●	●				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GoodWe PLUS+
Support & Service
Community
Contact
WE, THE SMART ENERGY INNOVATOR

Hybrid Series Inverters – Example Installation

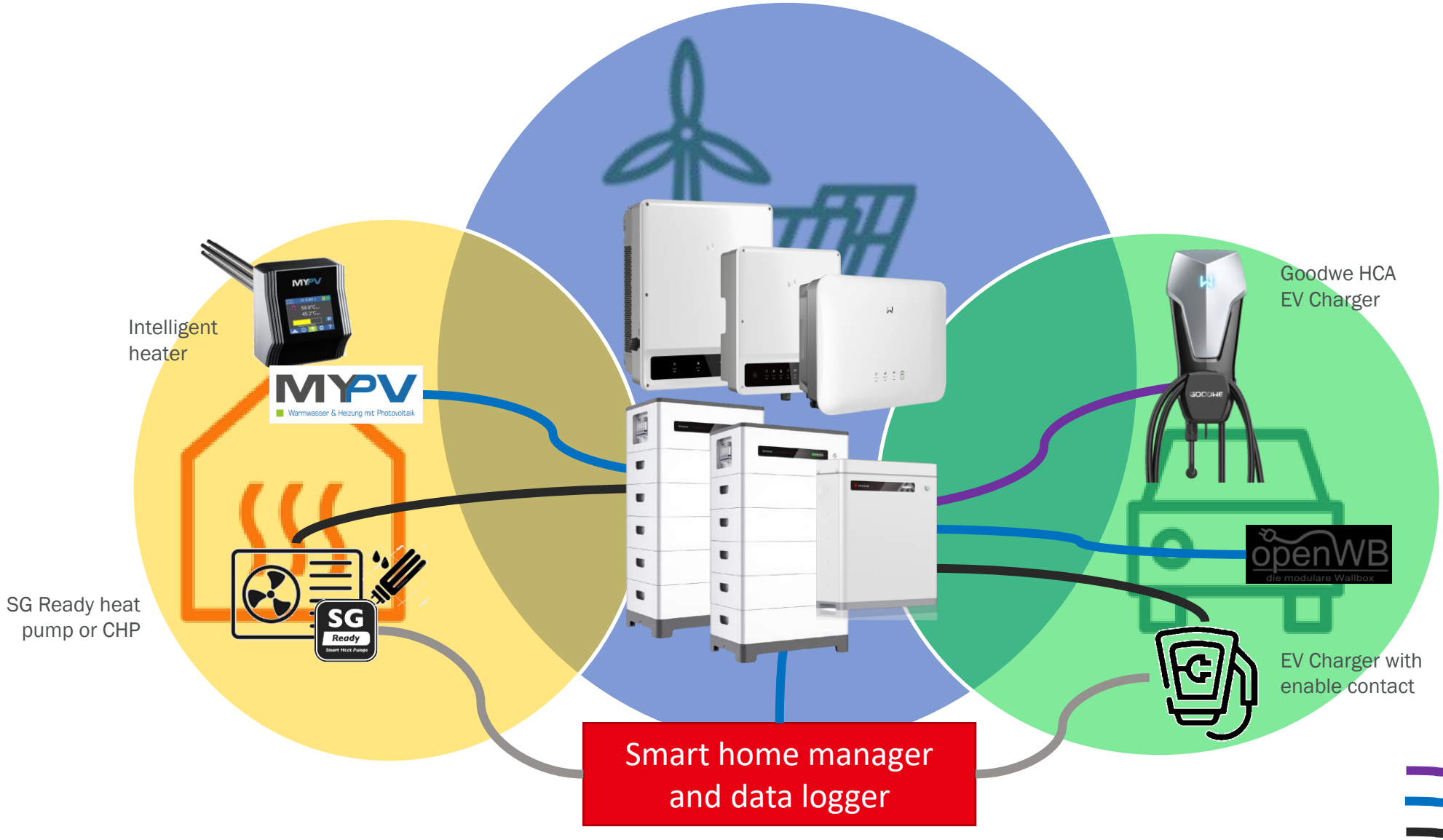
3 Phase Inverters

3 Phase Parallel up to 100 kW

GoodWe storage inverters - advantages at a glance

- Flexible application possibilities
- Advanced emergency power function
- Simple sector coupling
- Quick installation - all components included

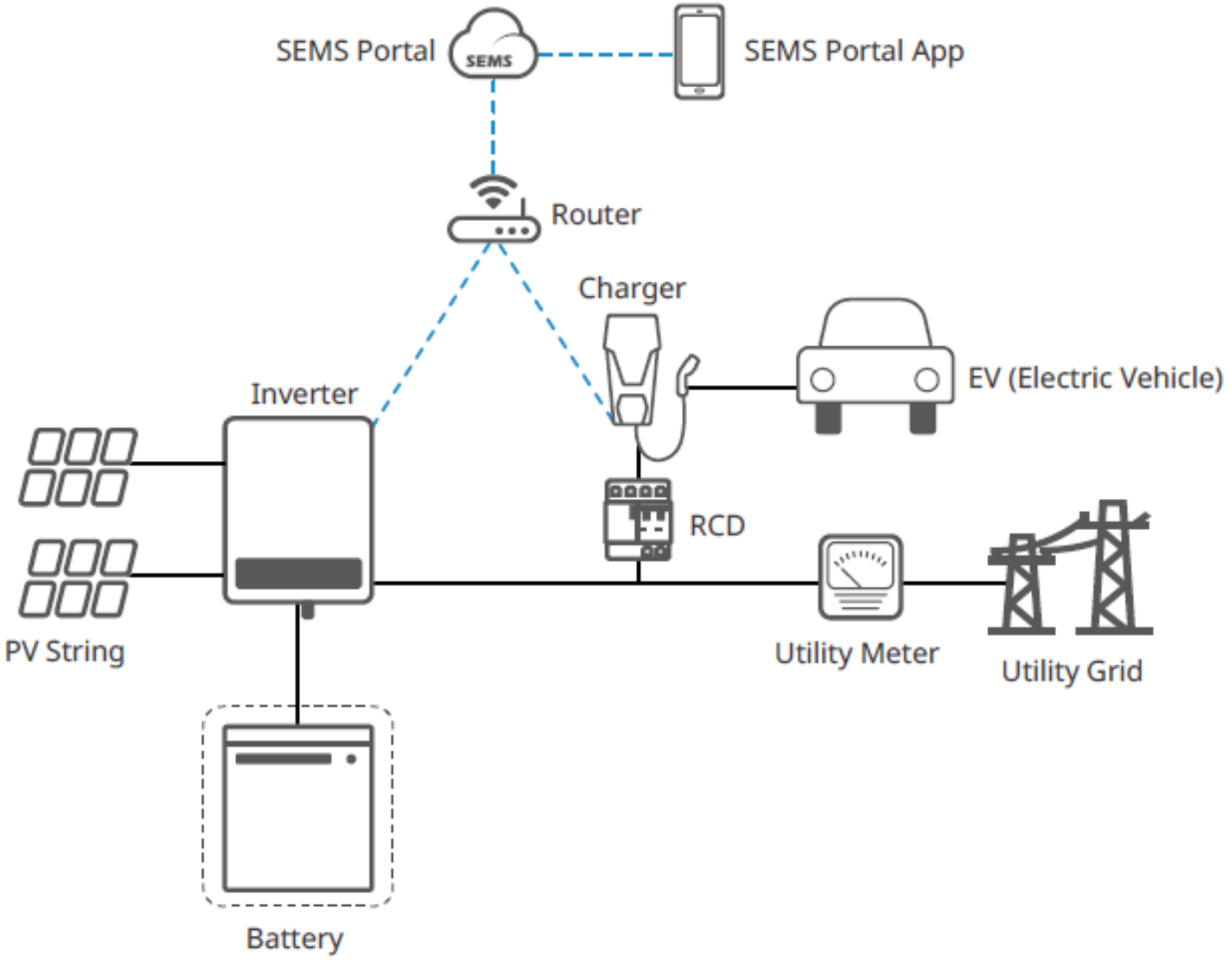
Overview sector coupling



Product features and benefits

- **Key technical data:**
  - 3 versions (7kW single phase; 11 / 22 kW triple phase)
  - 6m cable included
  - 6mA residual Current protection integrated
- **Supports smart charging:**
  - **Solar Charging:** Charges EV only from PV - requires GoodWe PV inverter with GM3000 or Hybrid/Battery inverter
  - **Hybrid Charging:** Charges EV from PV and battery - requires GoodWe Hybrid/Battery inverter
- **Communication:**
  - Compatible with all GoodWe inverters
  - Communication to inverters via SEMS monitoring
  - Wifi connection to Router
  - Wifi or Bluetooth for direct control via SolarGo App
- **Optional Accessories:**
  - External RCD Type A with IP65 housing
  - Ground mounting pole for single phase Charger (7kW)
  - Ground mounting pole for triple phase charger (11 / 22 kW)

System overview



GOODWE PRODUCT PORTFOLIO

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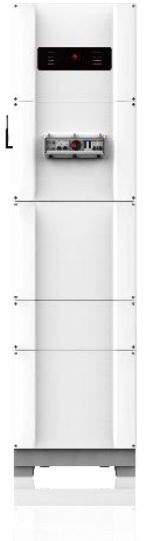


String inverters			Storage inverters		Battery storage	
Residential 0,7 – 15 kW	C&I 17 – 136 kW	Utility Scale 250 kW	Hybrid 3 – 50 kW	AC coupled 3 – 50 kW	Battery (LV & HV)	All-in-one storage

Energy Management & Communications

LITHIUM BATTERIES

Lynx Home U Series (LV)

5.4-32.4 kWh

Lynx Home F Series (HV)

6.6-16.5 kWh

Lynx Home F PLUS+ (HV)

6.6-16.4 kWh per tower
Up to 8 towers in parallel
High voltage battery

- Module Auto Recognition
- Remote Diagnosis & upgrade
- Auto under-voltage Reboot
- IP65 for indoor or outdoor installation
- Safe & Reliable
- Rapid Battery Charge

Details Lynx home F / Lynx home F PLUS+

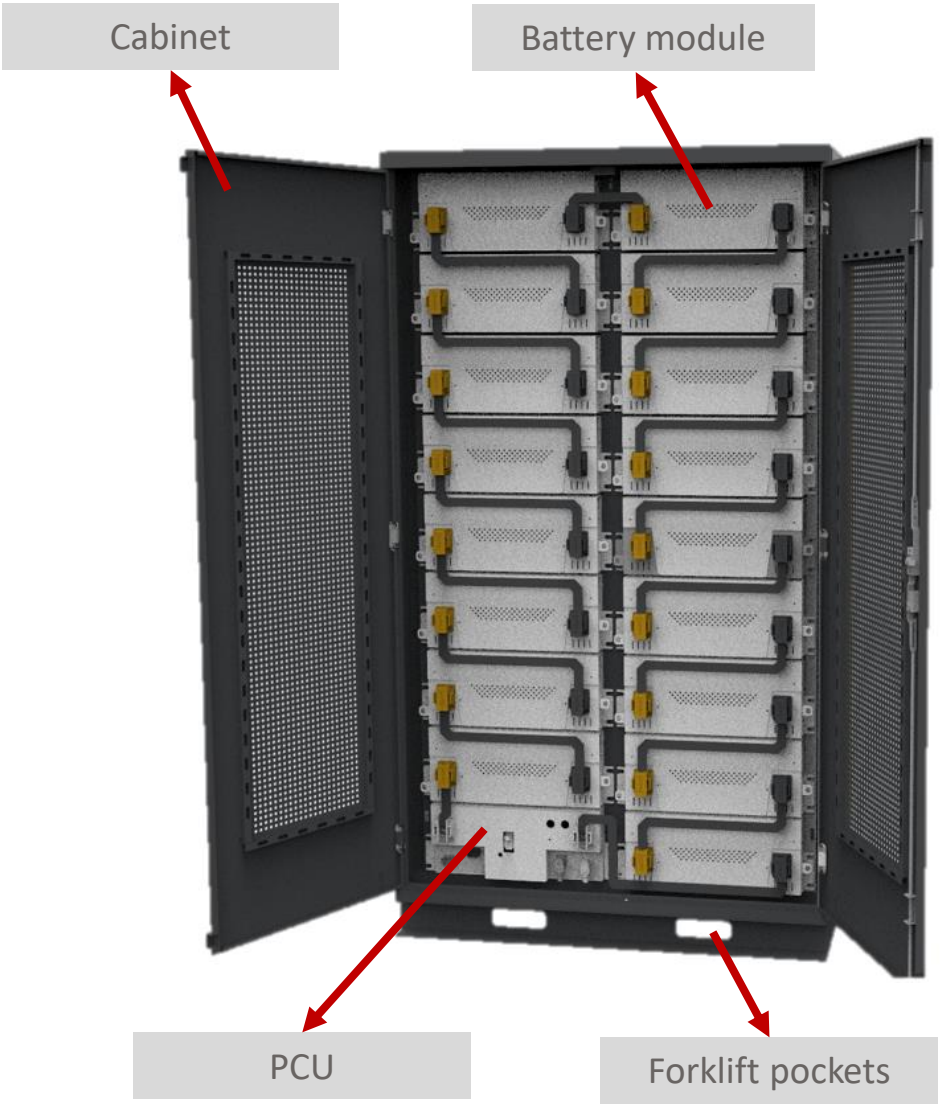
- Wide energy range 6.6 - 16.4 kWh
- Compatible with EH/BH, ET/BT as well as ET30
- Communication via inverter
- IP55 suitable for outdoor installation
- Charging 0 ~ 50°C, discharging -20 ~ 50°C
- LiFePO4 cells (10 years warranty)

	LX F6.6-H	LX F9.8-H	LX F13-H	LX F16-H
Modul	2	3	4	5
Usable energy	**6,6** kWh	**9,8** kWh	**13,1** kWh	**16,4** kWh
Voltage	182 ~ 230V	274 ~ 346V	365 ~ 461V	456 ~ 576V

Lynx C technical overview

NEW 2023
For BTC/ETC

Battery model	LX C101-10	LX C120-10	LX C138-10	LX C156-10
Usable energy (kWh)	101	120	138	156
Battery module	LX C9.2-10: 38.4V 9.21kWh			
Number of modules	11	13	15	17
Cell type	LFP (LiFePO4)			
Nominal power (kW)	42.2	49.9	57.6	65.3
Operating temperature range	0 - 45°C			
Dimensions (W × H × D mm)	1155×1650×730 mm		1155×2065×730 mm	
Weight (kg)	1120	1280	1480	1650
Protection rating	IP21			



Portfolio & Application

- GoodWe company introduction
- Residential Inverters
- C&I + Utility Scale Inverters
- Energy Storage products
- SEMS: Monitoring and Communication

GOODWE PRODUCT PORTFOLIO

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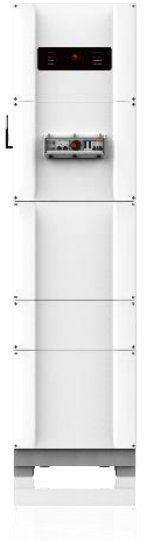


String inverters

Residential	C&I	Utility Scale
0,7 – 15 kW	17 – 136 kW	250 kW

Storage inverters

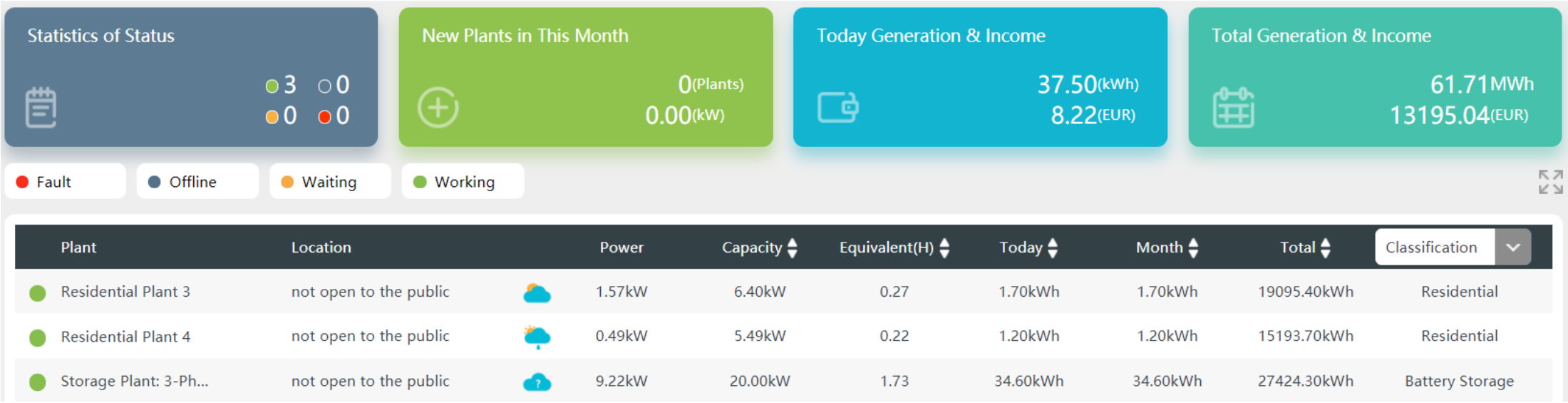
Hybrid	AC coupled
3 – 50 kW	3 – 50 kW

Battery storage

Battery	All-in-one
(LV & HV)	storage

Energy Management & Communications

SEMS Portal



- Overview of all installed plants
- Easily find if an error has occurred
- Check generation of specific plant and total generation

SEMS Demo Version

Specific Plant

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Latest measured power

Accumulated data

System overview

Weather forecast

Linked devices

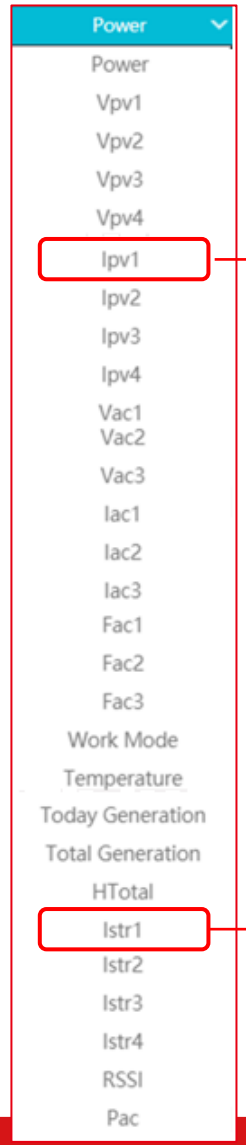
Device information

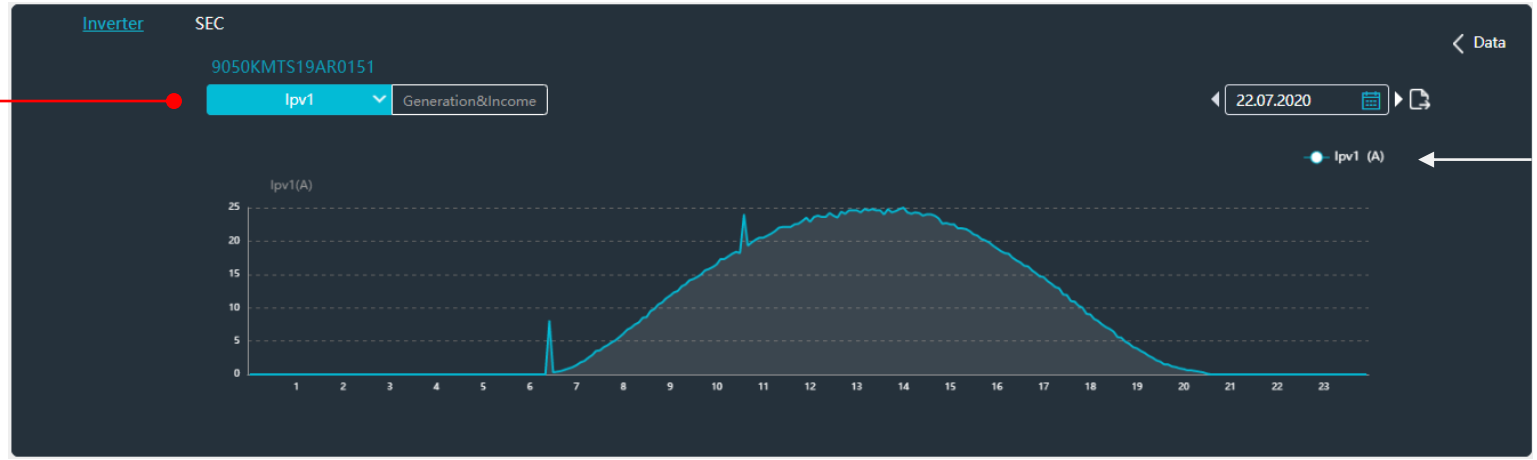
System Graph:
- Generation
- Load
- Export
- Import
- Etc.

Advanced graphs:
- Power
- Current
- Voltage
- Frequency
- Etc...

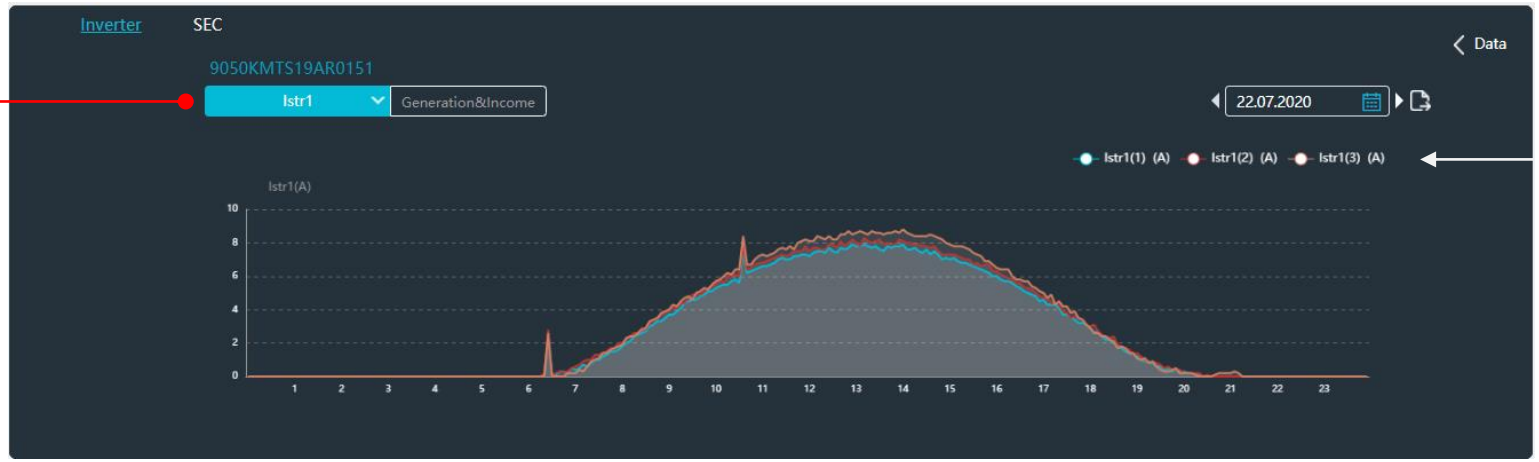
www.semsportal.com

Detailed Graphs





MPPT level



String level

www.semsportal.com

Integrate weather stations

Additional Features

- Alarms - Get email in case of issue at the plant
- Export data to Excel
- Manage organisation account
- Geographical overview

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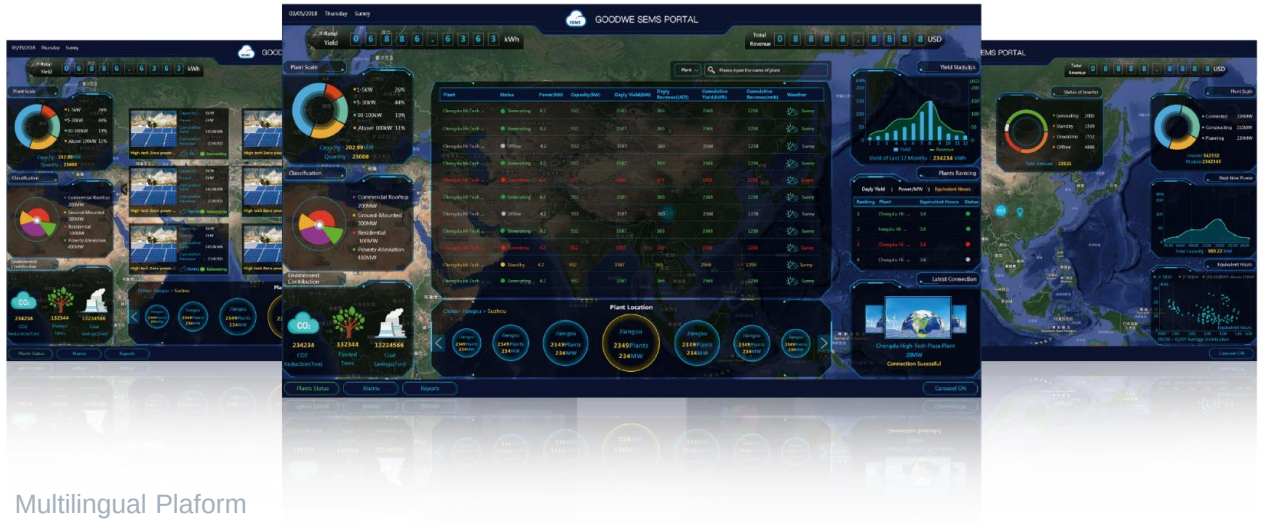
SEMS

Smart Energy Management System



Multilingual Plaform

SEMS platform is an integrated platform for end-users, installers and EPC companies. The platform supports all GoodWe inverters and is accessible in multiple languages on multiple platforms (PC and APP)

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THANK YOU

GoodWe Europe GmbH