Sigenergy C&I Energy Solution

Innovative Modular C&I Energy Systems

June. 2025

Corporate Introduction

One step at a time, Further strength global presence

SIGENERGY

2022

May
Sigenergy established

2023

March
Won the Red Dot Design Award

May
The first batch of products' shipment to Europe

June
Global brand & product launch

November
Sigen AI launch on mySigen App

2024

June
Launch the new C&I Solution

The world's first 5-in-one V2X solution landing

September
Launch Sigen Cloud platform

[1] **No.1** global shipment volume of stackable distributed PV & storage integrated solutions

December
[2] **Fastest** to achieve annual sales revenue of **$200 million** in the Chinese energy storage industry

2025

February
As of now

Distributors 99+

Registered installers 5600+

Patent applications 420+

Granted patents 100+

1. According to the Frost & Sullivan report, from Q1 to Q3 in 2024.
2. According to the Frost & Sullivan report, as of the end of 2024.

Investor & Financing

2022/07 — Hillhouse Capital
$65+ billion
Top 1 private equity institution in Asia
PHILIPS, Tencent, ByteDance 字节跳动, Midea, LONGi, CATL, GREE 格力, 隆基科技 BIREN TECHNOLOGY, ...

2022/07 — WALDEN INTERNATIONAL
$20+ billion
Top 10 venture capital all over the World
sina 新浪, 高德地图, SMIC, 美团, ...

2022/12 — 钟鼎资本 EASTERN BELL CAPITAL
$1.8+ billion
Top 10 private equity institution in China
Tim Hortons, usmile, 京东物流 JD Logistics, 小鹏, ...

2022/12 — V·FUND
$1.4+ billion
Top 20 private equity in NE sector in China
CATL, 地平线 Horizon Robotics, 容百科技 Ronbay Technology, Geek+, ...

2025/02 — HKEX 香港交易所
Submit listing application
to the Hong Kong Stock Exchange

120+
Million USD Financing
Investment obtained

600+
Million USD
As of Feb, 2025 estimated corporate valuations

Founder & Team

Tony Xu Founder & CEO

Created Global **No.1** PV Inverter Brand & Shipment

Maintained the record for consecutive **8 years**

Created China **No.1** AI computing chips & framework

1999 - 2010 HUAWEI
Leader of Wireless Software Platform

2010 - 2020 HUAWEI
President of Smart PV Business

2020 - 2022 HUAWEI
President of AI Business

2022 SIGENERGY
Founder & CEO

The
President

15 years

The pioneer of string inverter in China

Led the team to achieve the **No.1** global shipment of distributed inverter

Leader of
Industrial design

Huawei Energy Product

30 years

Chief
Marketing Officer

No.1 Branding in Solar & AI

15 years

Leader of
Hardware R&D

Since 1st gen. Huawei inverter

15 years

Leader of
Software R&D

Since 1st gen. Huawei inverter

10 years

50%
R&D personnel

460+
Applied patents
By Mar. 2025

Global Layout for Better Serving Partners

Krosno, Poland
EU Service center

Spain
Portugal
Italy
Germany
Austria
Sweden
Netherlands
Belgium
United Kingdom
Ireland
France
Poland

Rotterdam, Netherlands
Warehouse

Lithuania
Slovenia
Norway
Czech Republic
Estonia
Bulgaria
Switzerland

Romania
Greece
Croatia
Serbia
Hungary

Japan

Shanghai, China
Headquarter

Uzbekistan
Tajikistan
Pakistan

Singapore

Vietnam
Myanmar
Thailand
Indonesia

Canada

Los Angeles, USA
Warehouse

USA

Mexico

Brazil

South Africa
Kenya
Zambia
Mauritius
Zimbabwe
Nigeria

Durban, South Africa
Warehouse

Sydney, Australia
Warehouse

Australia

New Zealand

Advanced & digitalized manufacturing

Quality tracking

throughout whole life cycle

- Incoming materials
- Manufacturing
- Product operation

Improved Efficiency

throughout whole manufac. flow

- Plan mgmt.
- Manufacturing mgmt.
- Equipment mgmt.

Cell thickness detection

Increase battery cell life cycle

Laser Cleaning

Improve welding yields

IPG Ring Spot Laser

Increase weld yield by 2%

Automatic Gluing Line

Ensure heat dissipation perf.

Collaborate with Renowned Partners

Countries

67

As of Mar. 2025

Distributor partners

100

As of Mar. 2025

Actively Expanding with Global Partners

Strengthen global presence and become the premium choice in BESS

As of Mar, 2025

43,000+
Total number of operating system

»

Stable performance, Highly reliable

Building Trust with a Strong Reputation

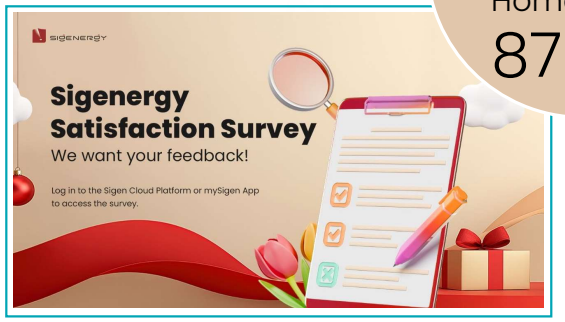
Positive Feedback from the First Comprehensive Satisfaction Survey

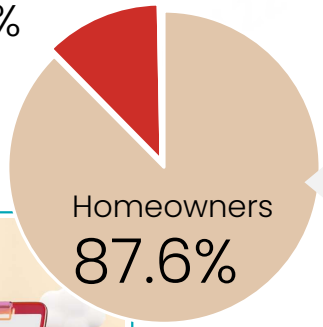
Survey start date
2024.12.8

Survey end date
2024.12.31

Covers 41 countries and regions
Number of Collected Samples

4799





>> >>

Exceptional product satisfaction with a recommendation index > 92%

Homeowner satisfaction

Very satisfied | Satisfied | General | Dissatisfied | Very dissatisfied

Recommendation index

SigenStor

Installation

mySigen App

...

Homeowners' recommendation index
>92%

Installer satisfaction

SigenStor

Gateway

App

Service

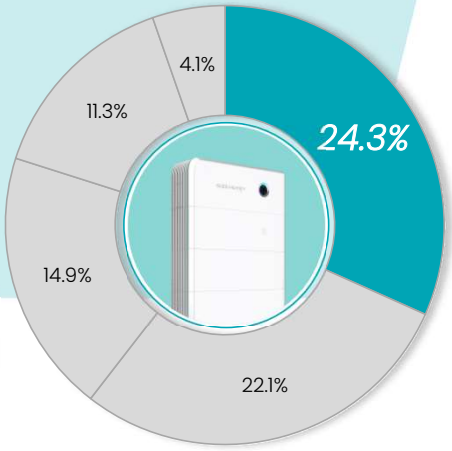
Supply

...

Installers' recommendation index
>96%

Global Leader of Stackable DESS Solution

2024 Q1-Q3 Ranking and Market Share of Stackable all-in-one DESS solution companies



		Shipment (MWh)
No.1	SIGENERGY	231
No.2	AlphaESS	209
No.3	SOLAX POWER	142
No.4	SOFAR	108
No.5	SAJ	39

Source:
According to the Frost & Sullivan report, from Q1 to Q3 in 2024.

Companies achieved 1 Billion CNY in Revenue

SIGENERGY
Established in 2022.5 >> 2 years

Deye 德業 — Established in 2000 — 17 years

SUNGROW 阳光电源 — Established in 1997 — 15 years

solis — Established in 2005 — 14 years

solaredge — Established in 2006 — 9 years

GOODWE — Established in 2010 — 10 years

GROWATT — Established in 2011 — 9 years

Deep Collaboration with Leading Partners

Segen

No. 1 Distributor @the UK

- SIGENERGY
- solis
- GivEnergy

FAILTE SOLAR -GO GREEN GO SOLAR-

No. 1 Distributor @Ireland

- SIGENERGY
- HUAWEI

energy 3000 solar

No. 1 Distributor @Austria

- SIGENERGY
- HUAWEI
- SMA

GREENTECH -RENEWABLES-

No. 1 Distributor @the USA

- SIGENERGY
- TESLA
- ENPHASE

Greensun everything about PV

No. 1 Distributor @Italy

- SIGENERGY
- solaredge
- HUAWEI

VDH SOLAR

No. 3 Distributor @the Netherland

- SIGENERGY
- solaredge
- HUAWEI

bet solar beyond the line

No. 1 Distributor @Spain

- SIGENERGY
- HUAWEI
- FOX ESS

HERHOLDT'S GROUP

No. 1 Distributor @South Africa

- SIGENERGY
- SUNGROW

KENO

No. 1 Distributor @Poland

- SIGENERGY
- SMA
- FOX ESS

APRILICE

No. 1 Distributor @Sweden

- SIGENERGY
- GROWATT

onninen

No. 1 Distributor @Finland

- SIGENERGY
- solis
- HUAWEI

sonepar Powered by Difference

Global electrical appliance retail giants

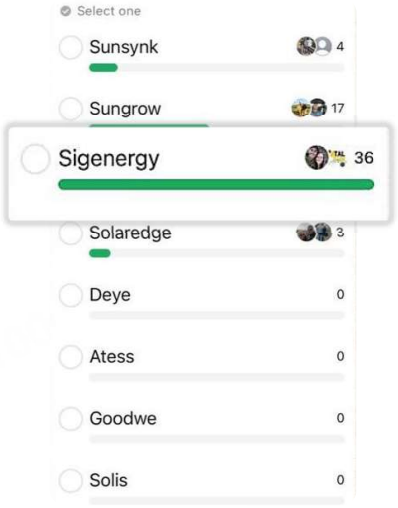
- SIGENERGY
- HUAWEI
- Fronius

Quality Earns Market Shares & Praises

Annual procurement amount of the largest distributor: around 80 Million USD

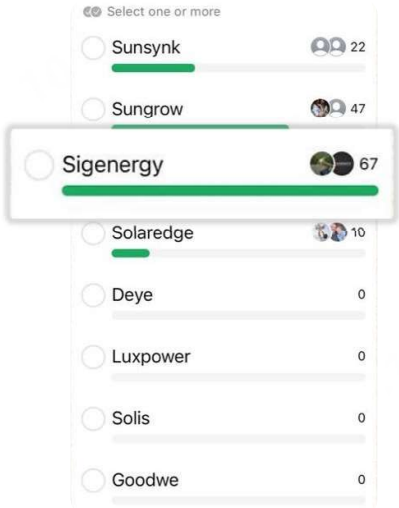
1 Installer's Most Recommended Brand

"If it was my choice I would install the following for my customer"



2 Installer's Most Anticipated Brand

"What solar brand are you most excited about the future"



Source: Questionnaire to installers by HXX, Tier 1 distributor in South Africa.

Best 5 Home Batteries Compared - BRUTAL OPINION!

Review video by industry KOL with nearly 249,000 subscribers in UK

Best 5 Home batteries compared (UK)

Sigenergy SigenStor	Tesla Powerwall3	Givenergy All-in-one	Myenergi Libbbi	SolarEdge Homebattery
7.6	7.6	7.0	6.6	6.1

Top 5 Best Solar Batteries in 2024

The most well-known KOL in the field of ESS in USA

Top 5 Best Solar Batteries in 2024

Is this the best ALL IN ONE home power system? Sigenergy battery...

A well-known expert in the field of ESS in UK

Installation: Best All-in-One system

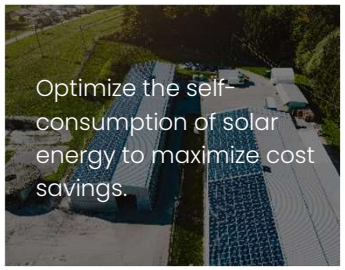
Sigenergy

C&I energy solution with SigenStack

Explosive growth due to a full scenario of application

On-grid Scenario

1 - Max. self-consumption



2 – Peak-valley arbitrage

3 – VPP trading

4 – Dynamic capacity expansion

Off-grid Scenario

Unstable Gird

Provide reliable backup power to ensure continuous operation of essential devices

Remote Regions

Replace traditional diesel generators or reduce their running time for saving fuel costs

Frequent Blackouts Accelerate Push for Energy Independence

Power outages due to natural disasters

Power was cut for millions in California to prevent new wildfires. More than 170,000 California users suffer power outages in January 2025 due to severe mountain fires.

Power outages due to grid oscillations

The blackout cut power to some 50 million people in the Iberian Peninsula. The power outage lasted nearly 11 hours.

Power outages due to insufficient power supply

Cumulative power outages in South Africa in 2023 of 1742 hours (approx. 72.6 days). The power cuts are costing South Africa well over $40 million per day and deterring investment,

Source:
1. https://www.chronicleonline.com/news/world/major-power-outage-in-spain-and-portugal-knocks-out-subway-networks-traffic-lights-and-atms/article_e5242a3e-6536-55d4-93fc-c41731487e6c.html
2. https://weather.com/travel/news/news/2025-04-28-europe-power-outage-spain-france-portugal-latest
3. https://www.sciencenews.org/article/what-it-will-take-adapt-power-grid-higher-wildfire-risks-california South Africans struggle in the dark to cope with power cuts | AP News

1 Challenge in C&I ESS Solution
Complicated Installation

1 - 1 MWh EES

installation cost up to €21,000

Need specialized lift equipment


Crane €700 /day

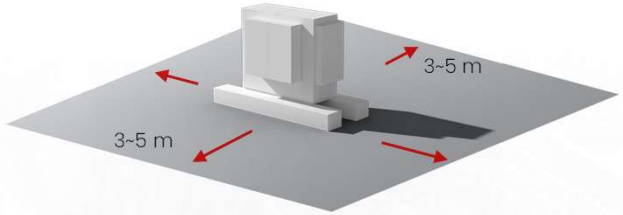

Forklift €480 /day

Complex wiring

- Install copper bars for packs
- Many rack controller cables
- Many communications cables

2 - High environment requirements

3~5 m front and rear space reservation



3 High skill requirements

Need supervisor service

1. Install ESS (cabinet & components)
2. Install fire extinguish system
3. Connect cables
4. System power-on
5. Deployment & commissioning

For a 1 MWh PV+ESS project

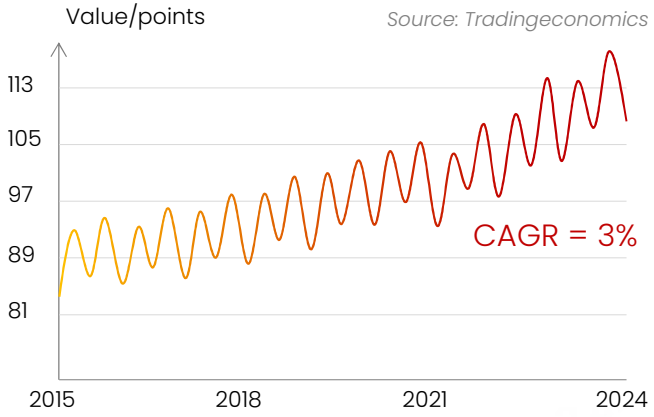
32 work hours of Cold commissioning

32 work hours of Hot commissioning

2 Challenge in C&I ESS Solution
Complex and Expensive O&M Cost

Traditional Cabinet ESS solutions

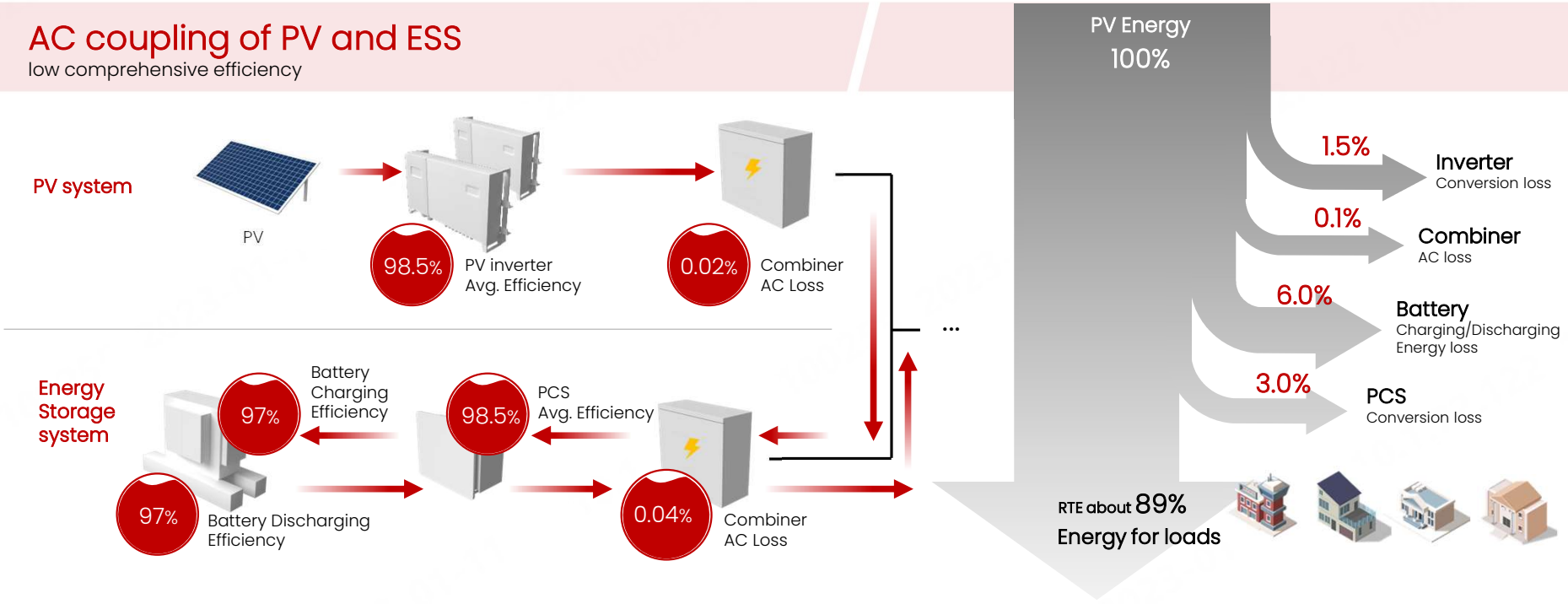
European Union Labor Cost



About 33% growth from 2015,Q1 to 2024,Q1
And will increase gradually

3 Challenge in C&I ESS Solution
AC Coupling, Lower integration with PV

AC coupling of PV and ESS
low comprehensive efficiency



4 Challenge in C&I ESS Solution
Impact of security incidents is enormous

A 35MWh energy storage station in Hainan caught fire. The incident was successfully contained without casualties or secondary disasters.

High-voltage surge
Contributing Factors

5.16 MWh
Failure range

26 hours
Fire extinguishing time

On February 18, 2025, the Moss Landing lithium-ion battery station in California, a 300MW/1200MWh facility, suffered its fourth fire in just over a month. The latest incident, at the same site as the January 16 fire, led to the loss of over 70% of the station's equipment.

Fire suppression system out of control
Contributing Factors

1200 MWh
Failure range

3 days
Fire extinguishing time

A fire broke out at a 50 MW battery storage facility near Rothienorman in Aberdeenshire this afternoon. The incident to the north of the village at the facility at Overhill Farm started at around 2.20pm.

Fire during the construction
Contributing Factors

1 ESS cabinet

4 hours
Fire extinguishing time

A fire and explosion occurred in the optical storage and charging integration project, resulting in one person killed, two firefighters sacrificed, one firefighter injured, and the fire caused direct property damage of ¥ 16,608,100.

Battery internal short-circuit failure
Contributing Factors

25 MWh
Failure scope

12 hours
Fire extinguishing time

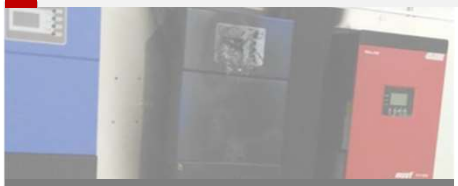
Source:
1. https://www.eraes.com.cn/newsinfo/7747830.html
2. https://www.pressandjournal.co.uk/fp/news/6698557/fire-rothienorman-battery-storage/
3. https://edition.cnn.com/2025/01/17/us/evacuation-fire-power-plant-monterey-county/index.html
4. Moa，E.H.Y.，Go，Y.I. Large-scale energy storage system: safety and risk assessment. Sustainable Energy res. 10，13 (2023). https://doi.org/10.1186/s40807-023-00082-z

5 Challenge in C&I ESS Solution
Insufficient Off-Grid Overload Support

Insufficient On/Off-Grid Switching Capability

Insufficient Short-term Peak Power Capability

1 **Inverter safety hazards**



Overload can trigger overcurrent protection and may pose a fire risk in severe cases.

2 **Equipment start-up failure**

Cannot provide enough starting current, making devices hard to start.

3 **Reduced system stability**

Trigger voltage & frequency instability, even cause the entire system to fail

4 **Poor user experience**

Devices fail to start & shutdown, inconveniencing life or production.

Market-Driven Transformation

Smart String inverter with innovations, reshaped the market landscape

Central inverter solution	Smart string inverter solution
100+ PV strings per MPPT High power consumption	**Higher yields** Multiple MPP Trackers Lower energy loss 5+% yields increased
Fuses needed for safety protection IP21 only More cables	**Safe & reliable** No fuse inside PLC IP65 Free of cleaning
MPPT-level monitoring Regular O&M on cabinet	**Smart O&M** String-level monitoring Smart I-V Diagnosis ...
Experts touch and long wait time Large-scale downtime	**Higher availability** Fast replacement Product as spare parts Longer uptime
The market's first choice for 10+ years	**Innovated solution reshaped PV market** 23% market share of vendor XX 70% Global inverter market share

SigenStack, upgraded for large-scale ESS
Also flexible, even more powerful

C&I Storage System

SigenStack BC

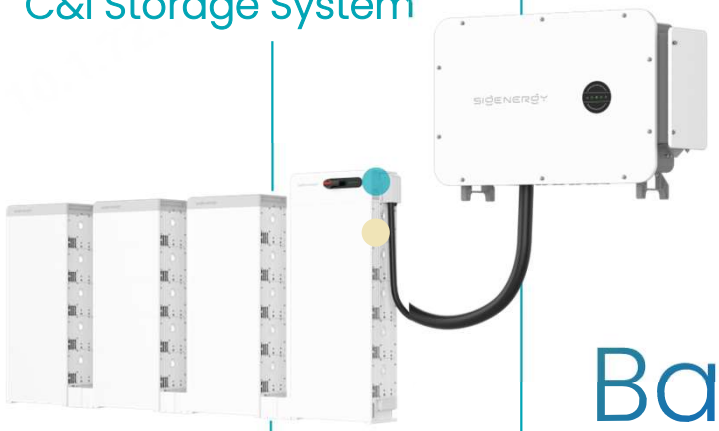
Battery Controller

Max. output current	180 A
Max. input current	180 A
Voltage range	550 – 1100 V

SigenStack BAT 12.0

Battery module

Energy capacity	12.06 kWh
Nominal charge rate	0.5C
Maximum charge rate	1.0 C



C&I Inverter

PV(solar only)	50 kW	60 kW	80 kW	100 kW	110 kW	125 kW
HYA(on-grid)	50 kW	60 kW	80 kW	100 kW	110 kW	125 kW
HYB(Micro-grid)	50 kW	60 kW	80 kW	100 kW	110 kW	

Start-up voltage	180 V
Max. DC input voltage	1100 V
Max. short-circuit current per MPPT	60 A

253 kWh per inverter, parallel 100 inverters = 25 MWh

Battery Ready

New gen. of energy storage solution is now
Simply installation, O&M & boost system efficiency

Optimal CAPEX

- DC Coupling, fewer devices purchased
- Easier installation, fast commissioning
- Modular design, accurate investment

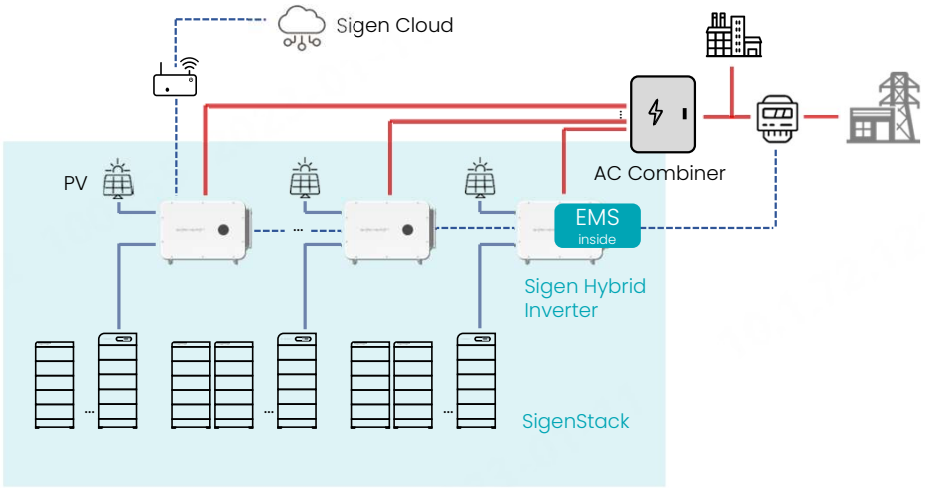
Reduced OPEX

- Free of regular O&M on BESS
- Pack-level safety protection
- Higher system availability

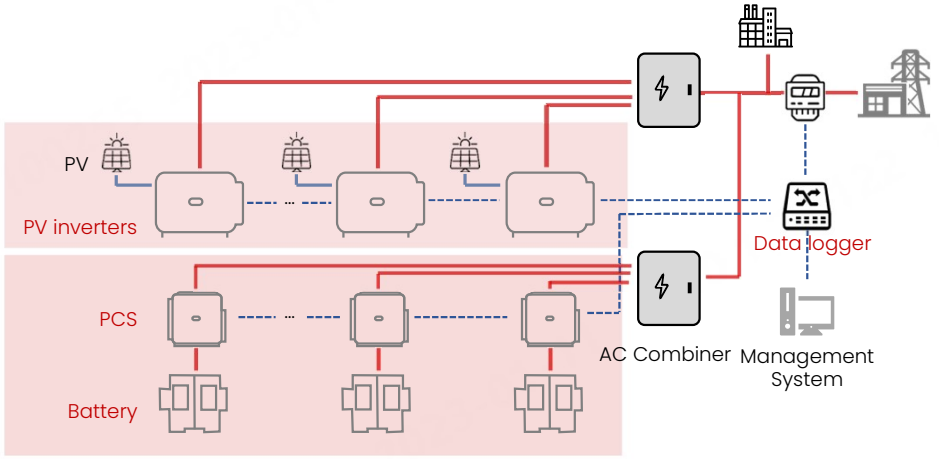
Higher Revenue

- Higher RTE efficiency by DC Coupling
- More efficient energy mgt. by Sigen Cloud
- Optimal operation modes by Sigen Cloud

Sigenergy C&I ESS Solution | DC Coupling



Traditional ESS Solution | AC Coupling



HYB Version

Stronger overload capacity, longer duration
Ensuring the stability and safety of off-grid systems

Sigenergy
10s duration
150% peak power*
**Max. peak power 150 kW*

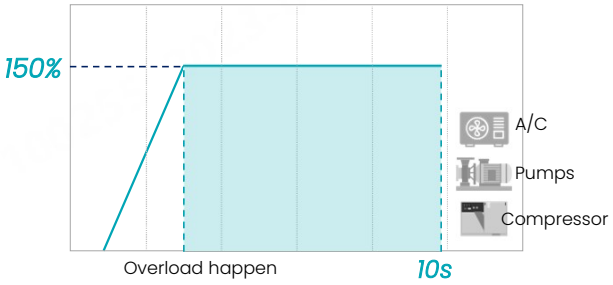
Traditional PCS
5s duration
130% peak power

Traditional Hybrid
0.2s duration
120% peak power

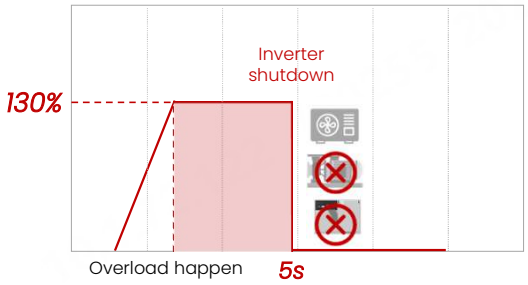
Impact load will be supported

Air conditioner	Industrial motors	Elevator
3~4 x nominal power	5~7 x nominal power	2~3 x nominal power

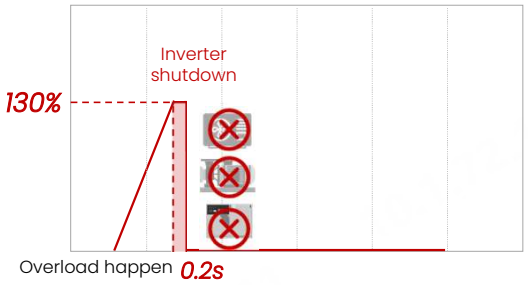
Sigenergy, stable support for system overloads



Traditional PCS, cannot support enough load and time



Traditional Hybrid, cannot support enough load and time



HYB Version

Seamless on/off-grid switch
No disruption to backup load during power outage

Sigenergy Seamless

Vendor AT 10 ms

Vendor S 20 ms

Hold-up time of devices

Communication devices (router, switch)	10 ms
Precision device	10 ms
Computer	20 ms
Fans, pumps	30 ms
LED lights	41 ms

0 ms load-side disruption

Sigenergy: no fluctuations on change over

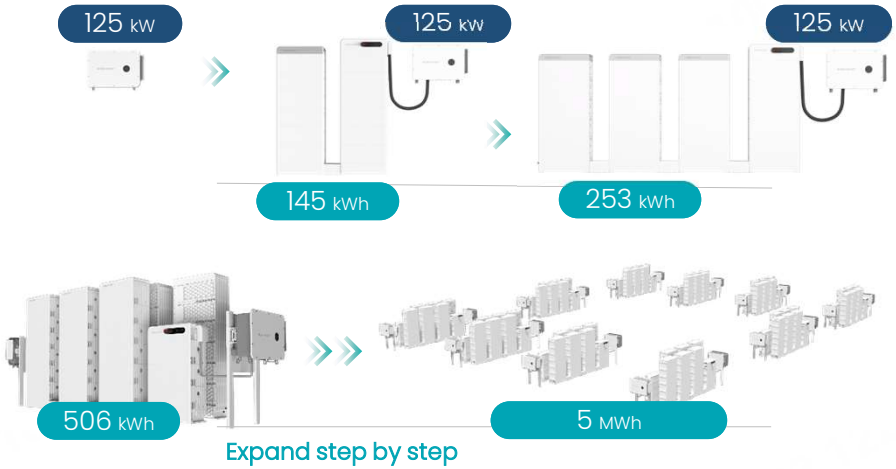
vs

Load operation may be **interrupted**

Others: >10 ms disruption time

Modular design
Flexible deployment, precise investment

SigenStack fully modular design



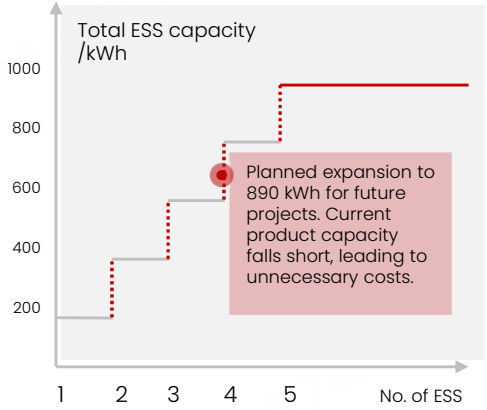
Traditional solar + ESS energy solutions

Vendor A
PV Inverter
100 kW

Vendor B
ESS Cabinet
200 kWh

+

Vendor B
PCS
only 100 kW

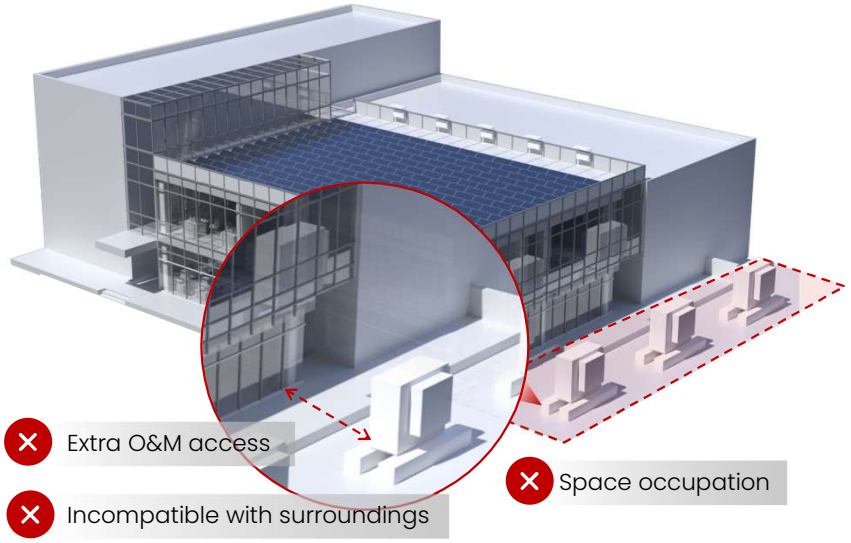


Modular design
Simple site selection, small footprint

SigenStack, fewer requirements on surroundings

Integration with the buildings

Traditional cabinet ESS, Larger footprint

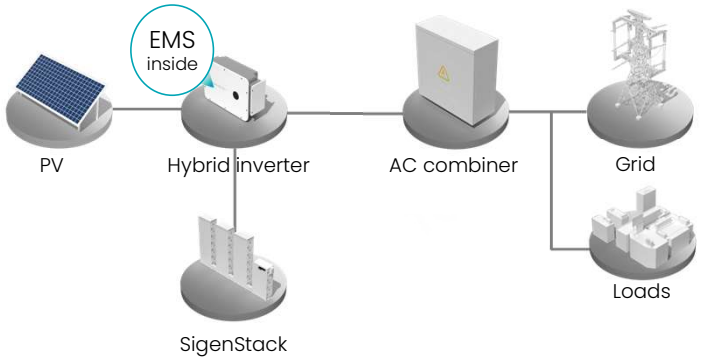


Need additional space 140 m^2

*Calculation based 600 kWh ESS project

Lower CAPEX
DC coupling, fewer devices purchased

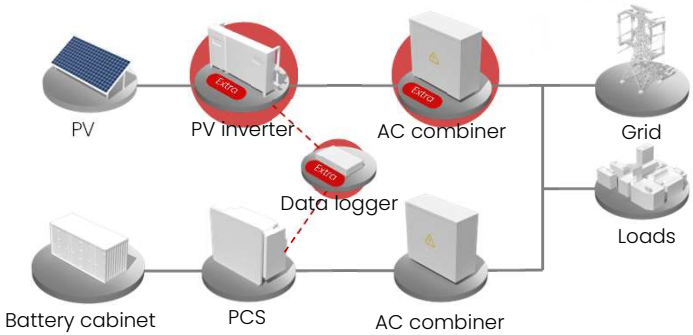
Sigenergy solution, DC coupling



Simplify PV power generation system

- Save PV Inverters
- Save a data logger
- Save an AC combiner

Traditional solutions, AC coupling



Extra devices needed

€ 14,000

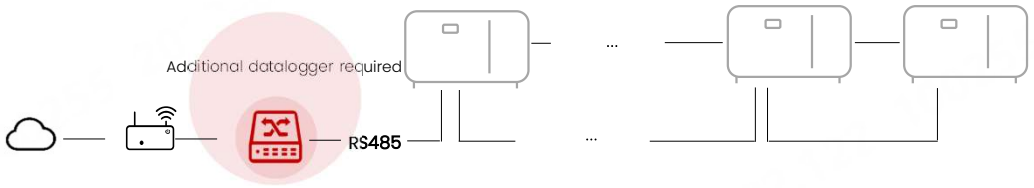
additional devices cost

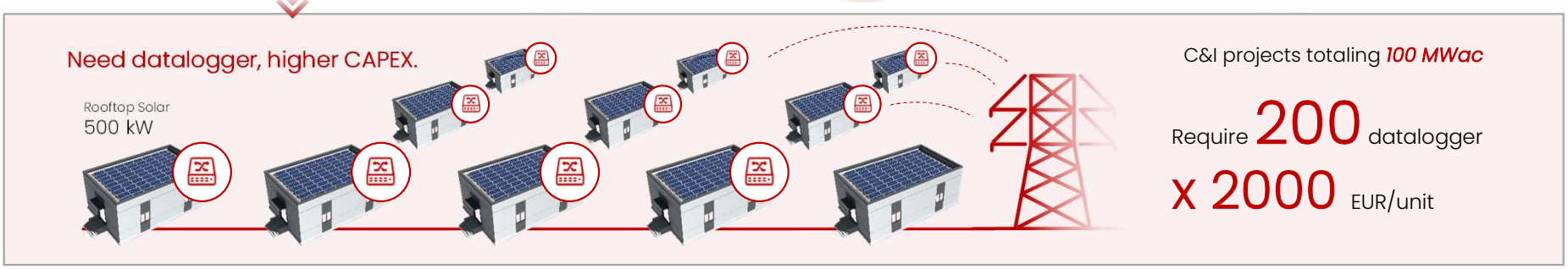
*For 400 kWac/1000 kWh PV+ESS project

Lower CAPEX
Free of datalogger, improves comm. reliability

Traditional comm. solutions

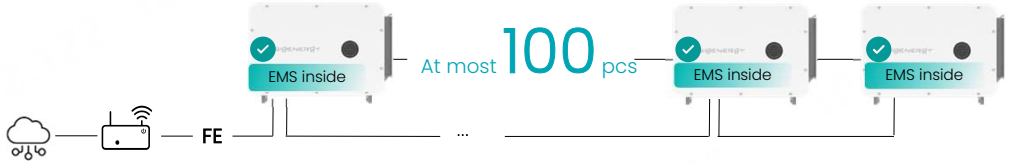
Additional Data logger/Dongle required,
Additional Communication Node = Additional Failure Node





Logger-Free comm. solutions

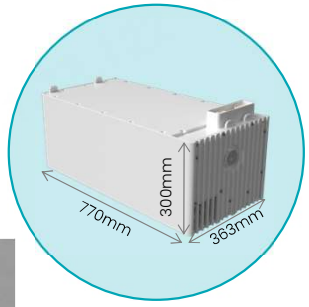
Reliable communication,
any inverter can be the master

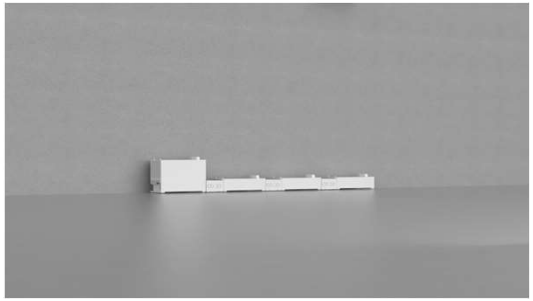


Lower CAPEX
Stackable installation, equipment & labor cost saving

SigenStack, stackable installation

253 kWh
Capacity of one system





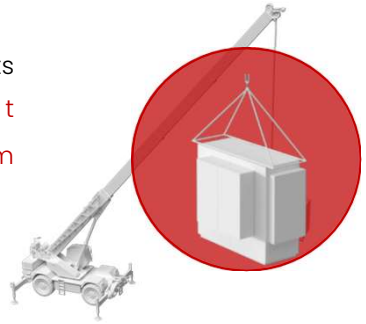
Quick connectors,
Stackable installation

1 hour needed
for each system

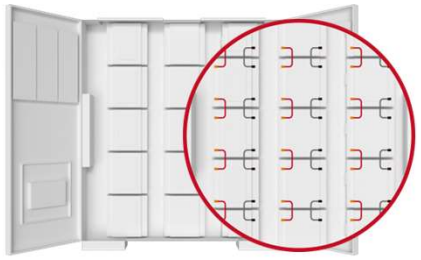
Traditional solutions, large & bulky

Specialized requirements
Hoisting capacity > **2** t
Working radius > **2** m

€1,200/day
Special cranes and forklift for ESS cabinet and packs



200 kWh
ESS capacity



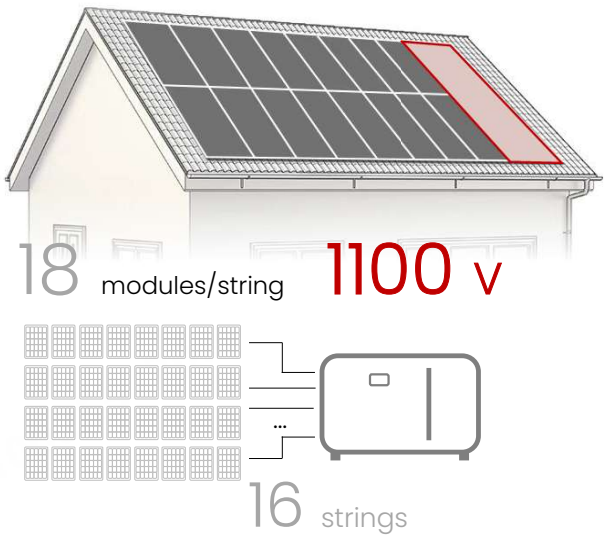
Use a socket wrench
Install cables of each pack
Install cables of rack controller
Install cables of communication
Install cables of PCS

8 hours, **€480**
Labor cost for each system

M2 Version

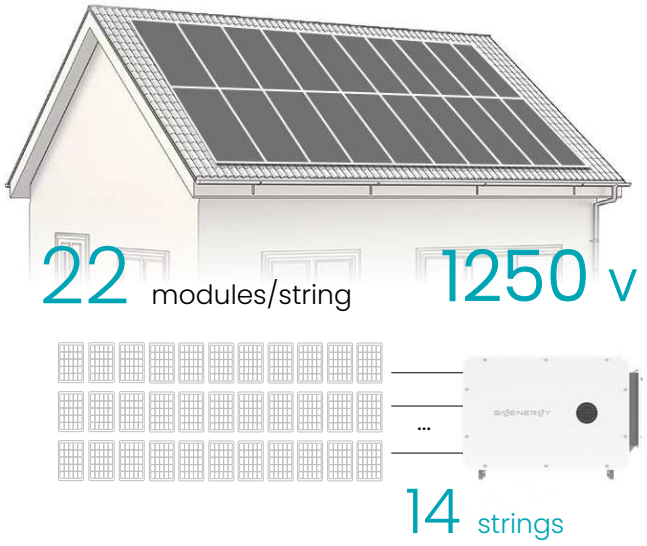
Lower CAPEX with 1250V Max. DC input voltage
Extend PV strings and optimize BOS

Traditional 1100V string inverter



	Traditional 1100V string inverter		1250V, Fewer strings for the same DC/AC ratio
BOS	0.092 euros/W		0.084 euros/W
Solar racking systems	64 units		56 units, €5,120 save
DC cables	3968 m		3472 m, €500 save
MC4 connector	64 pairs		56 pairs, €80 save

1250V, Fewer strings for the same DC/AC ratio



Note:
1. For 400 kWac project (4-storey building), with 2P support bracket.

Lower CAPEX with lightweight design
Save shipping & installation cost

Lightweight body for easier installation

Easier to carry and install, saving installation labor costs

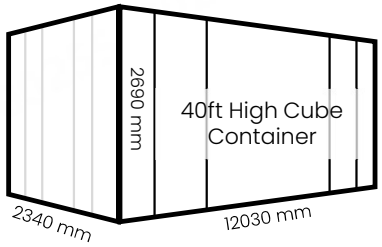
Weight 78 kg

Dimension

918/640/340 mm

19% Less weight

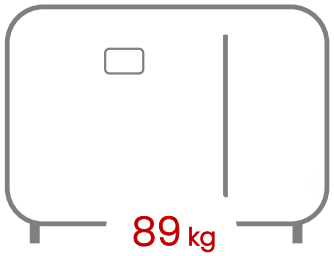
36% Smaller size



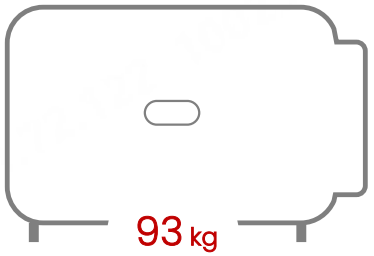
Transport costs saving

Reduce transport costs by transporting more equipment in the same containers

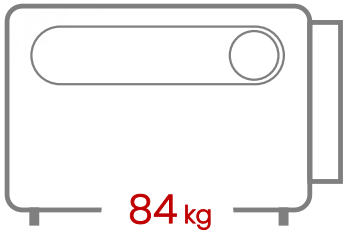
 x 165  x 100



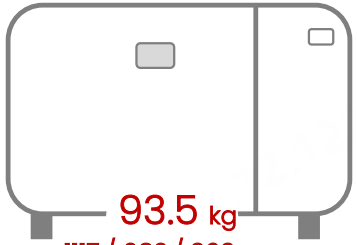
89 kg
1051 / 660/ 362.5 mm



93 kg
1035 / 700 / 365 mm



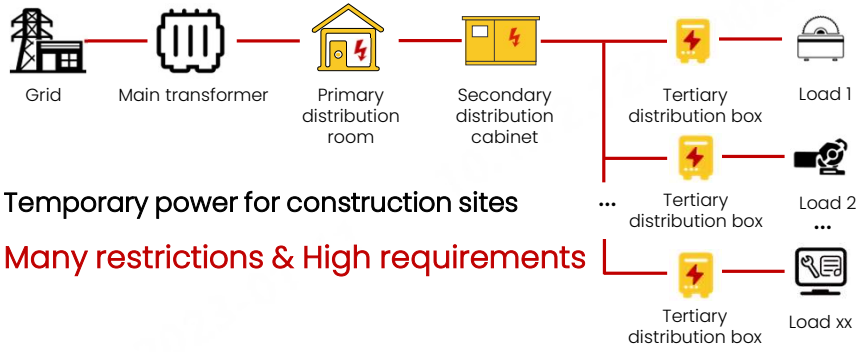
84 kg
970 / 640 / 345 mm



93.5 kg
1117 / 682 / 363 mm

Lower CAPEX with on-site self power supply function
Easy installation, save time and effort

Traditional solution | **Three-level distribution Two-level protection**

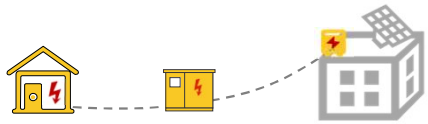


Temporary power for construction sites

Many restrictions & High requirements

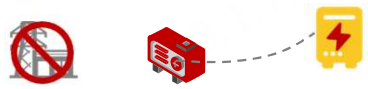
Long distance power supply

Inconvenient power cable connections from distributions to loads on roofs

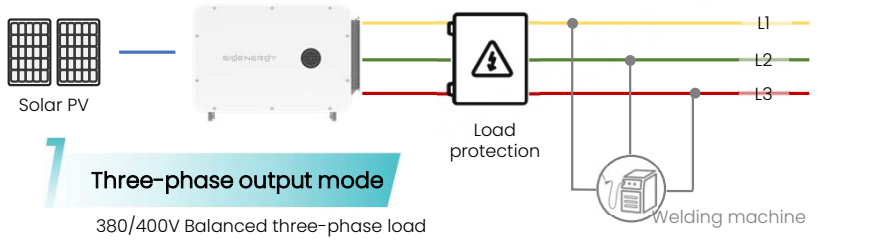


Project site with weak grid

Requires diesel generators or other equipment for power supply

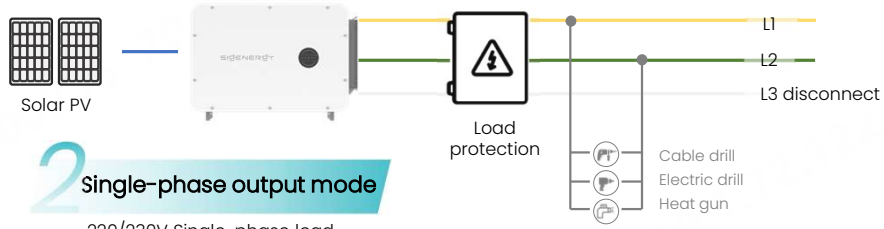


Sigenergy solution | **Self power supply during construction**



1 Three-phase output mode

380/400V Balanced three-phase load



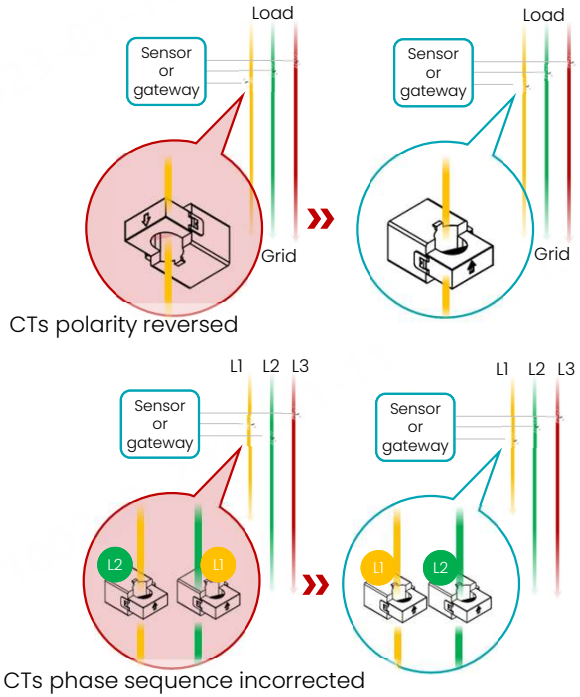
2 Single-phase output mode

220/230V Single-phase load

*Note:

1. The solution may have personnel electrical safety risks, constructors are required to sign a waiver of liability agreement.
2. Cannot work in three-phase mode and single-phase mode at the same time, the size of the load will be limited if the actual sunlight conditions are not favourable.

Lower CAPEX with self-adaptive phase sequence AC side wiring without worries



Traditional solution

Take **0.5** days

Each Rectification

Positioning

Determine the location of the error, power down the system, and record the current wiring status.

Inspection

Test and check that overload and short-circuit protection devices have not been affected.

Correction

Rewire and calibrate, correct and verify meter and protective device functionality, and finally restore power.

Sigenergy Lower wiring difficulty, no manual correction required

The inverter is automatically adjusted during commissioning:

Input perturbation ▶ Collect signals ▶ Algorithm processing and analysis

Find the target value and determine the phase sequence

Accuracy > 99.9% — Achieve self-adaptation

Arbitrary Wiring **Automatic Adjust**

*Note: The phase voltage sampling of the power sensor must correspond to the current sampling.

Lower CAPEX
Fast commissioning with system self-networking

SigenStack, ultra-fast commissioning

Auto. networking

about **15 mins**
on the whole system

Traditional solutions, time-consuming
with one-by-one devices connecting

about **2 days**
commissioning, extensive manual parameter setting

Need supervisor service
Project site requires professional installation guidance

About **€3,840** For 1 MWh project

- Onsite technical disclosure &training
- Installation and construction guide
- Grid-connection commissioning guide
- ...

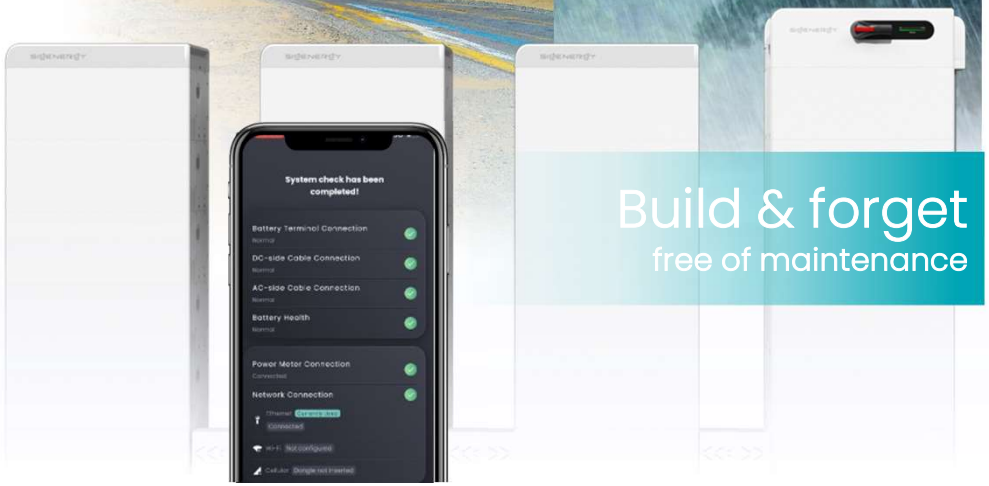
Lower OPEX
Free of complex and regular cabinet ESS O&M

SigenStack, High protection rating

IP66

6X: No ingress of dust; complete protection against contact

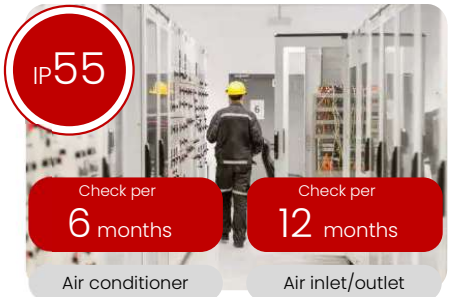
X6: Protection from water, even from powerful jets of water



Build & forget
free of maintenance

Multiple check items brings high OPEX

IP55



Check per 6 months	Check per 12 months
Air conditioner	Air inlet/outlet
Smoke sensors	Wire connection
Power supply	Safety function
Temp. sensors	Software version
...	...

Check per 12 months	Check per 24 months
Earthing	Battery capacity
SPD	Internal resistance
Fan	Switch box
Screw	Refrigerant

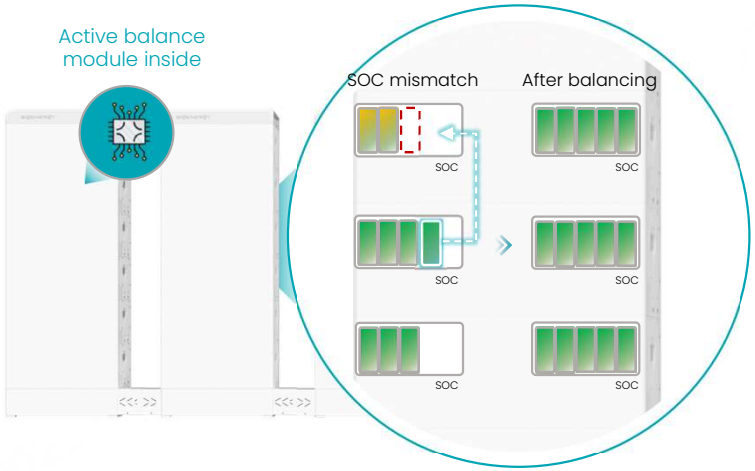
Annual Maintenance Cost
€22,610

ESS fire safety check
Check per 1 months

*Take a 1000 kWh ESS (200 kWh cabinet x 5) as an example

Lower OPEX
Active battery balancing, free of SOC calibration

Active Balancing Function



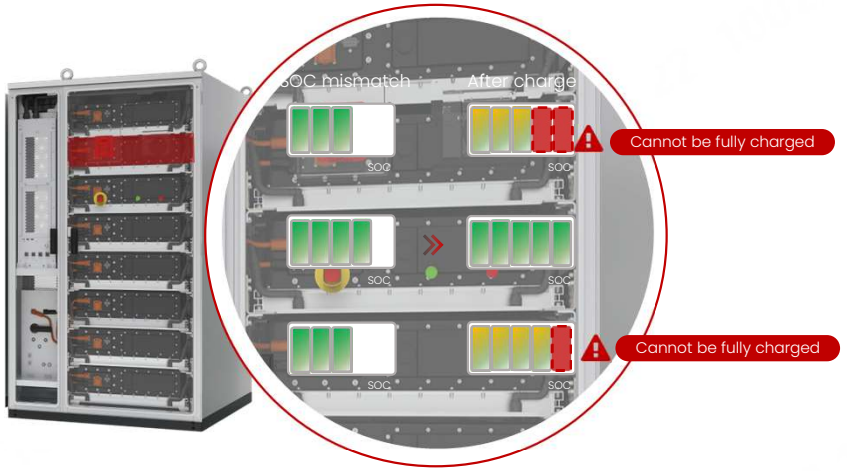
SigenStack balancing capability

5 A balance current

Free of SOC calibration

No manpower required

Traditional Solution



Others balancing capability

2~3 A balance current

Without Active Balancing

€5,760
Annual Cost

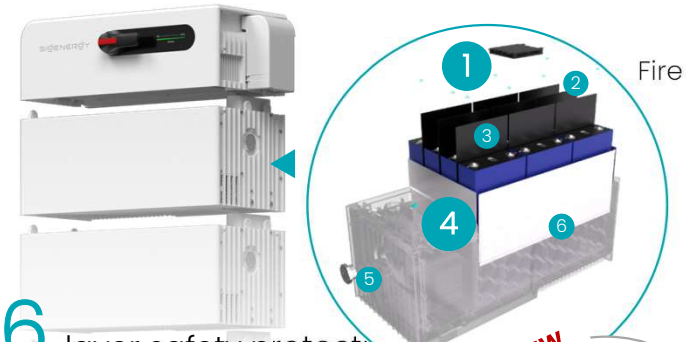
Monthly SOC Calibration

Need technical staff

Need charge & discharge machine

Lower OPEX
Pack-level safety protection, accurate safety control

Pack-level fire extinguisher



Fire suppression system per **12** kWh

6-layer safety protectio

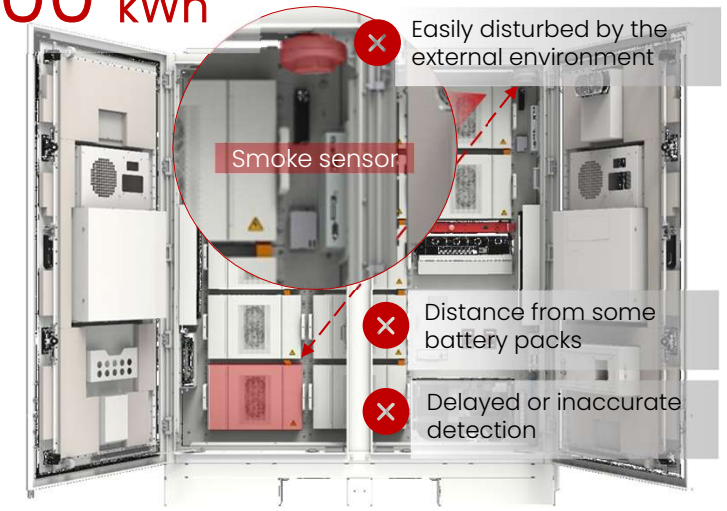
1. Fire extinguishing kit
2. Full-coverage temp. detection
3. High-temp. resistant insulated pad
4. Smoke sensor
5. Decompression valve
6. Insulation and heat isolation layer

Smoke Sensor

The real-time detection of thermal runaway reduces response time by **60** seconds

Cabinet-level fire extinguisher

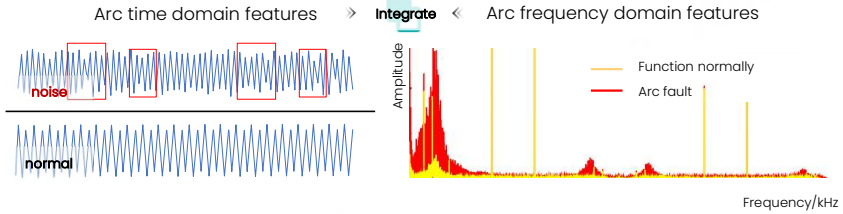
Fire suppression system per **200** kWh



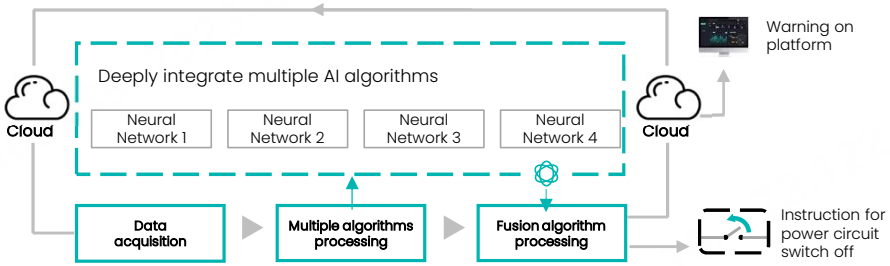
Lower OPEX with super AFCI detection Enables all-application scenarios adaptation

Sigenergy software detection strategy

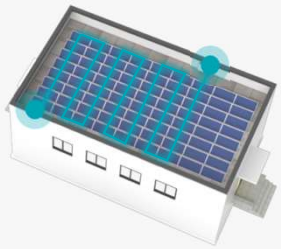
1 Feature fusion



2 Algorithm fusion



Sigenergy solution



Detecting arc faults with
higher accuracy & speed

500 m
Max. detection distance*

Industry-leading solution

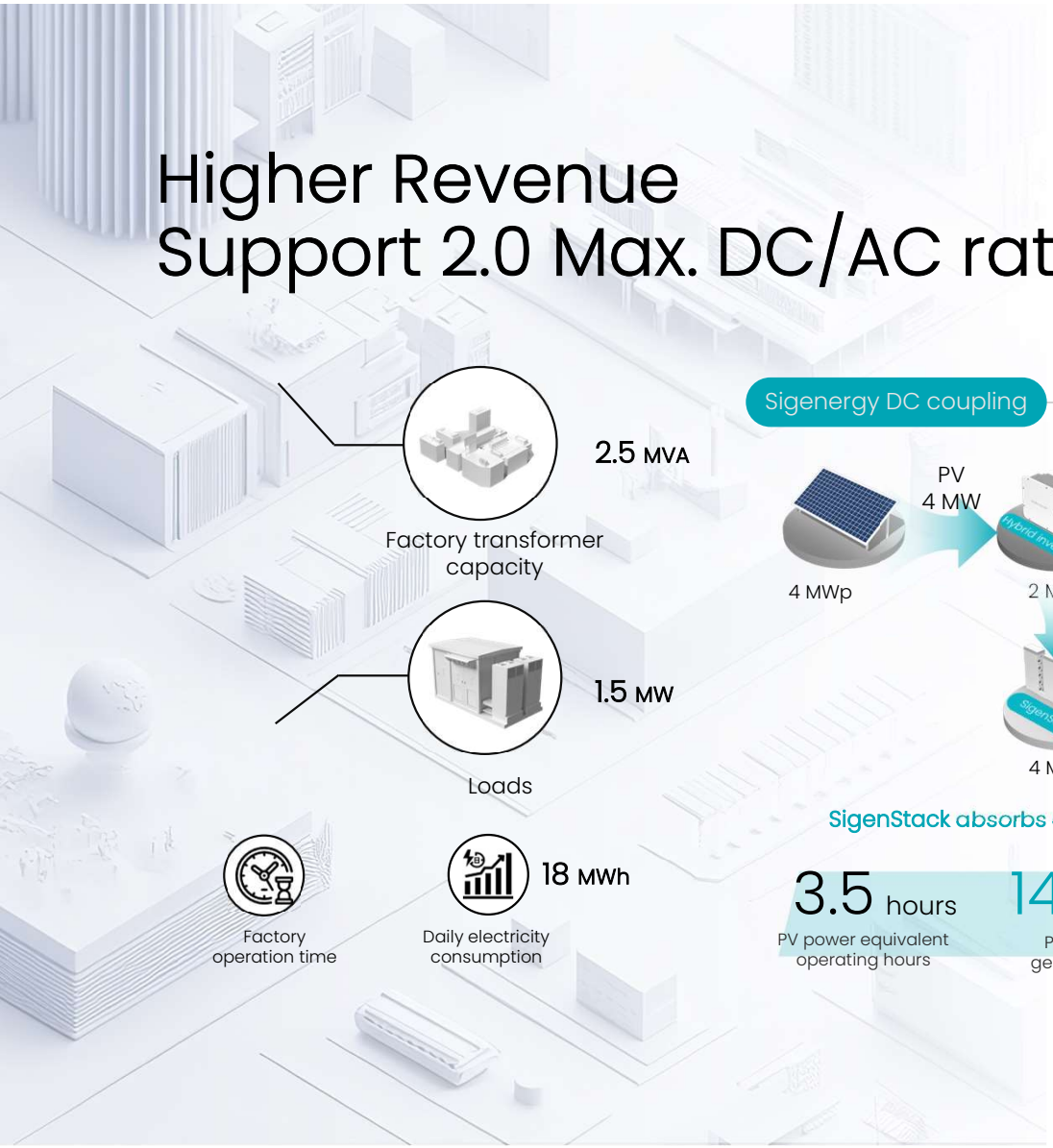
450 m
Max. detection distance*

Others solution

300 m
Max. detection distance

* Scenario-specific measured distances

Higher Revenue
Support 2.0 Max. DC/AC ratio, more PV power input

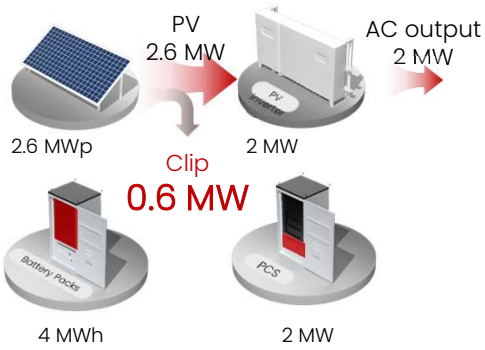


Sigenergy DC coupling — DC/AC ratio 2.0

SigenStack absorbs oversized PV power

3.5 hours	14 MWh	77.8%
PV power equivalent operating hours	PV daily generation	Percentage of PV utilization

Traditional AC coupling — DC/AC ratio 1.3

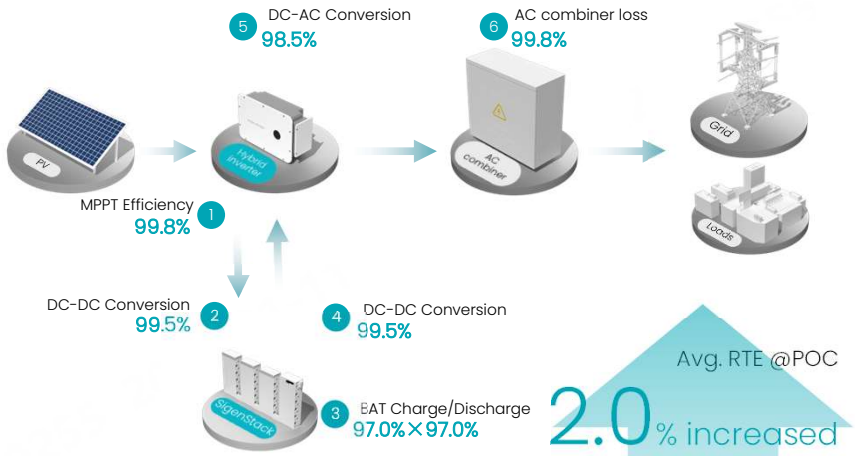


Oversized PV power is clipped

3.5 hours	9.1 MWh	50.5%
PV power equivalent operating hours	PV daily generation	Percentage of PV utilization

Higher Revenue
Higher RTE efficiency, save more, get more

Sigenergy BESS Solution, DC coupling



Avg. RTE @POC

2.0% increased

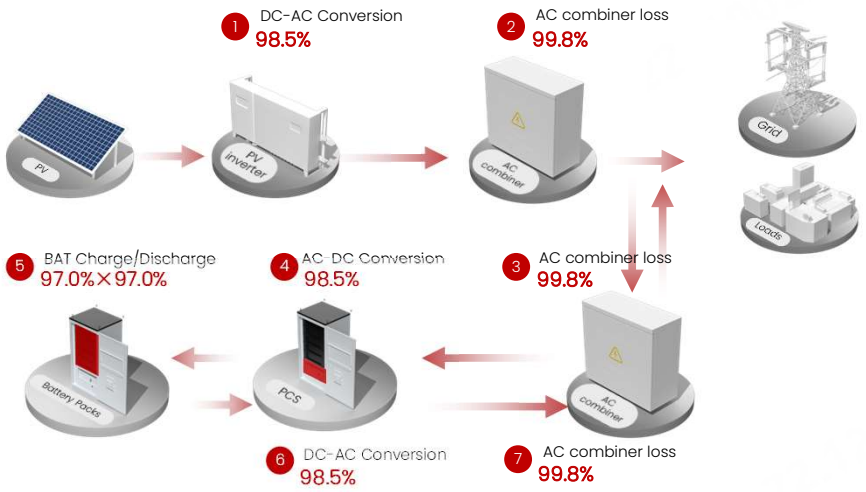
equivalent to an increase in revenue

€1,100+ /year*

*calculation condition:
PV capacity = 4 MWp
PV power equivalent operating hours = 1500 hrs
Percentage of PV power generation to ESS since AC clipping = 3%
Electricity price = 0.3 Euros/kWh

About 91% RTE

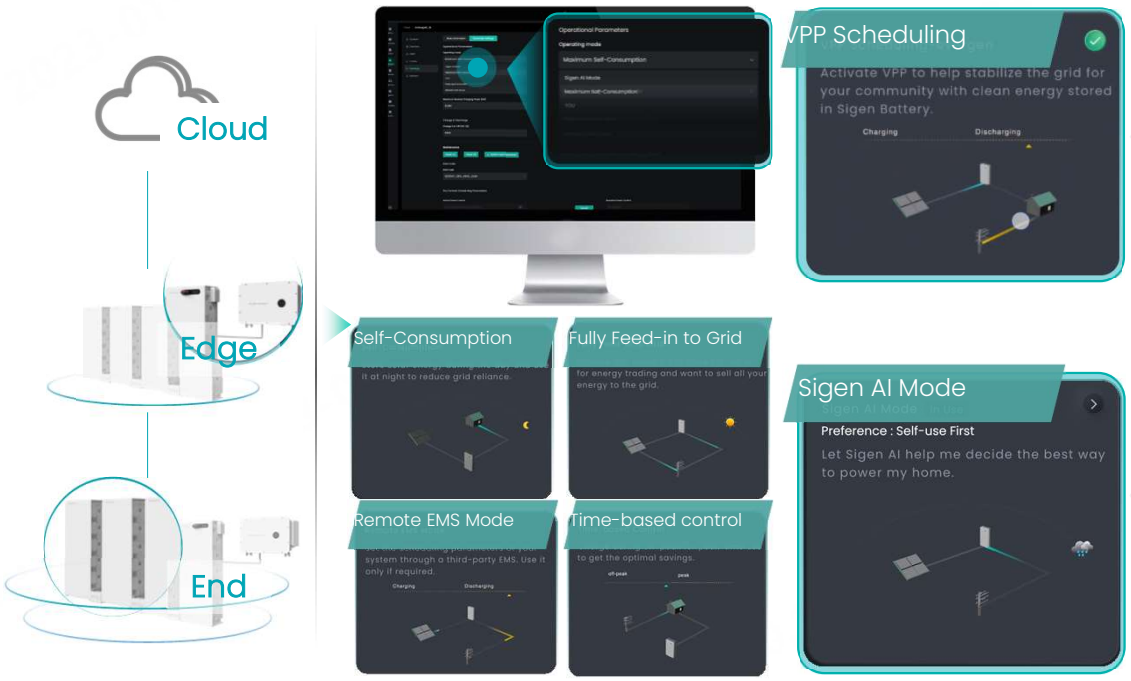
Traditional solution, AC coupling



Complex system with high power loss

About 89% RTE

Higher Revenue with Sigen Cloud
Cloud-native architecture, effective energy mgmt.



- Key Open API, abundant for customer API call

amber · evergen · FUTURE POWER · CheckWatt · frank energie

1.5 s
Successfully response in

Send instruction to **2,000** systems by group

- Dynamic tariff data from following power operators

26 (by Mar. 2025)
Countries support dynamic tariff

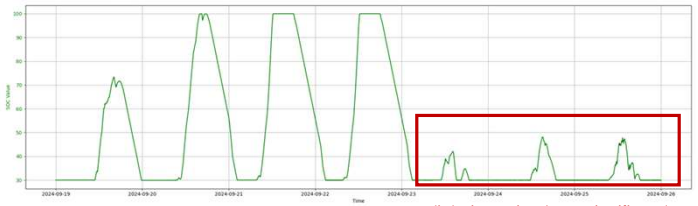
TenneT · omie · EXAA · octopus energy · omie · NORD POOL · elia group · aWATTar a tado° company ...

48%
Saving on bill by using AI mode in a Poland station

Sigen AI mode in Poland, saving 48% on electricity bills

Before October 2024 – use max. self-consumption mode

Use PV generation to power buildings first, and excess power is used for storage.
The price of buying and selling electricity from the grid is a fixed price of 0.24 PLN.



In autumn, light intensity drops significantly, often leaving batteries unable to fully charge.

Sep. total sales
272 kWh

Sep. total earnings
60.55 PLN

Sep. selling price of kWh
0.223 PLN / kWh

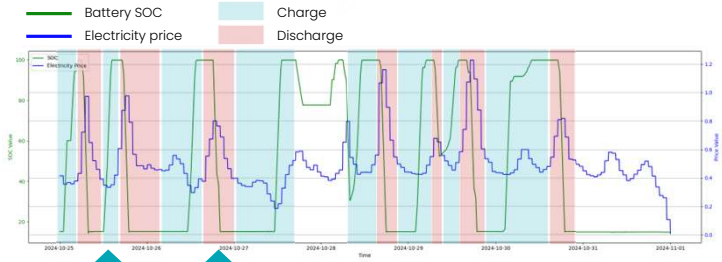
Electricity bought from the grid in Sep.
1613.79 kWh

Bill bought from the grid in Sep.
1005.3 PLN

Average grid cost for loads in Sep.
0.623 PLN/kWh

From October 1, 2024 – Switch to Sigen AI Mode

Officially access the dynamic tariff of the Next Day Market (RDN) of the Polish Energy Exchange (TGE). The power management of the building is fully controlled by Sigen AI mode.



Buy electricity at a low price

Sell electricity at a high price

In most cases, the battery is fully charged/discharged at least once a day

Oct. total sales
739 kWh

Oct. total earnings
324.34 PLN

Oct. selling price of kWh
0.439 PLN / kWh

Sell-out

Electricity bought from the grid in Oct.
3774.29 kWh

Bill bought from the grid in Oct.
1214.16 PLN

Average grid cost for loads in Oct.
0.322 PLN/kWh

Buy-in

vs. Traditional Cabinet ESS (vs 400 kWac/1000 kWh PV+ESS project)

		Traditional Cabinet ESS	SigenStack Solution	Saving	
Optimal CAPEX	Device Cost *Without BESS prices*	Only AC-coupling supported, **PV inverter, one more combiner and more AC side cables needed**	Both DC- & AC-coupling supported, fewer cables & devices	*€ 11,430*	*€ 26,140*
	EMS device	**Extra Datalogger is necessary**, resulting in extra device costs	EMS inside inverter No need extra datalogger	*€ 2,000*	
	Installation Tools	Specialized **crane** needed for cabinet **Forklift** needed for battery packs	Stackable installation, only **small forklift** needed	*€ 7,070*	
	Supervisor service	Mandatory to buy (Commissioning guide)	No need to extra purchase	*€ 3,840*	
	Commissioning	Traditional time-consuming commissioning with one-by-one devices connecting, **2 days**	Ultra-fast commissioning with auto. whole-system network, **15 min**	*€ 1,800*	
Reduced OPEX	O&M	**IP55**, Multiple check items on cabinet Reliability of power and signal, maintenance of Circuit Breaker, condenser cleaning, cooling medium, maintenance of **fire-fighting systems...**	**IP66**, Free from complex and regular O&M	*€ 22,610/year*	*€ 226,100* *of 10 years*
	Safety	Thermal runaway suppression per **200 kWh**	6 layers safety protection per **12 kWh**		
Higher Revenue	Energy Yield	Lower RTE, lower revenue in PV+ESS system	Higher RTE by DC coupling **2.0%** more energy yield, more revenue	*€ 1,100/year*	€ 11,000 *of 10 years*
	AI Value-added	No AI powered functionality	Dynamic Tariff supported, VPP integration supported, Sigen Cloud Platform, Cloud BMS, GPT-4o integrated		

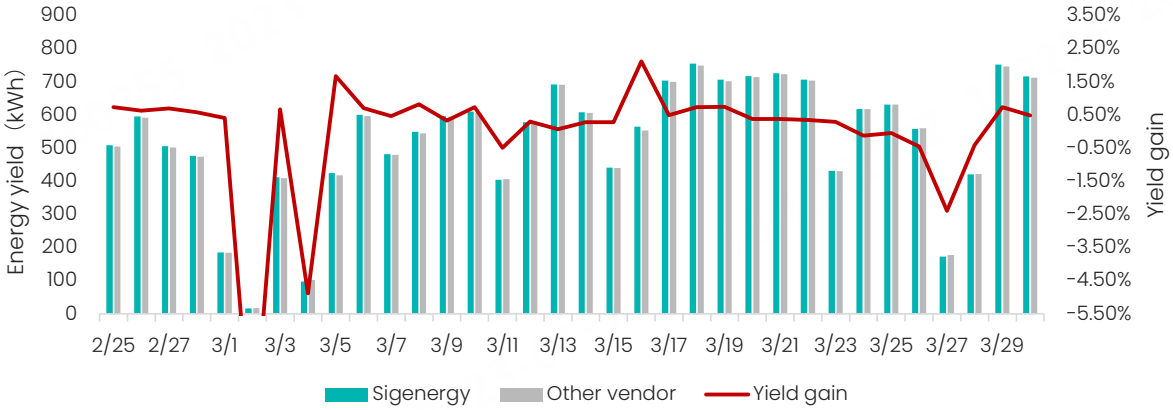
Case Study: Sigen C&I Inverters Showcase Robust Strength with a 0.41% Increase in Power Generation

VS Tier 1 vendor

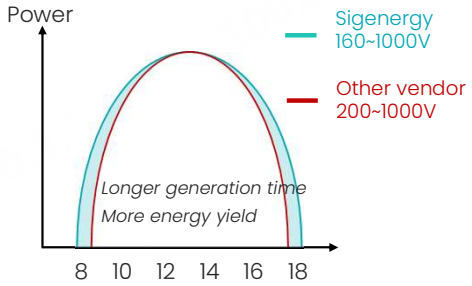
2 sets of 110kW PV inverters each

PV configuration:

- Longi 615W PV Module, Model: LR7-72HGD-615M
- 13 strings × 18 modules + 1 string × 11 modules
- PV input per inverter: 150.675 kWp
- Fixed bracket, tilt angle 6°



1 Wider MPPT voltage range



2 MPPT AI algorithm optimizes irradiance

Dynamic MPPT Efficiency

99.91%

3 Optimal devices & innovative layout

10°C

Internal temperature

Utility-scale Modular ESS, Pioneering a Green Future

Utility-scale
Bulgaria

AC output power
10 MWac

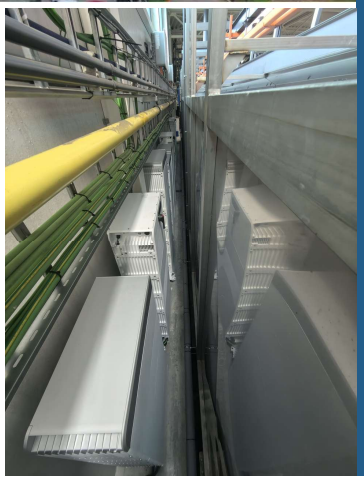
ESS capacity
20 MWh

10 days
Fast installation

0.5 hours
Fast commissioning

Remote EMS mode
Participation in dynamic tariffs

Adaptable installation in any environment



Factory
Heusden-Zolder, Belgium

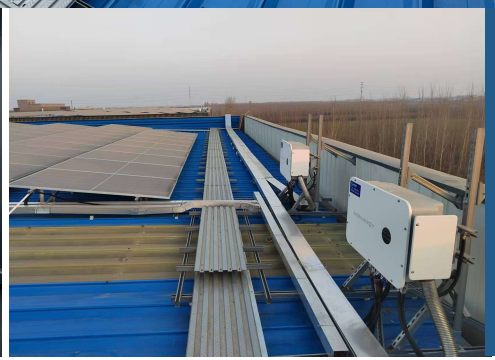
AC output power
440 kWac
(110kW HYA*4)

ESS capacity
1013 kWh
(SigenStack BAT*84)

Remote EMS
Peak-valley arbitrage
Dynamic electricity tariffs

Modular design, easy for installation in narrow area

Boosting Efficiency: DC-Coupled Solar PV + ESS



Factory
Shandong, China

PV output power

2.15 MW

AC output power

1.98 MWac
(110kW HYA*18)

ESS capacity

480 kWh
(SigenStack BAT*40)

Battery ready, upgrade to PV+ESS DC coupling at any time

Maximize self-consumption of PV
ESS Storage surplus PV power

Battery ready, easy upgrades to a PV + ESS system

Office Building
Da-Nang, Vietnam

PV output power

1.14 MWp

AC output power

880 kWac

(110kW Sigen PV Inverter*7
+ 110kw HYA*1)

Maximize self-consumption of PV

Battery ready" and "fully modular" for flexible PV+ESS expansion, enabling precise configuration.

Innovative solution empower your business

Jilin, China

Battery Ready

PV capacity
5 MWp
AC output
4.2 MW

Sigen Hybrid Inverter
110 kw X 32
100 kw X 6

Our Hybrid inverter features a reserved battery port for future connection to our fully modular BESS — SigenStack.

Taiwan, China

PV capacity
2.5 MWp
AC output
2.5 MW

Xi'an, China

PV capacity
2.7 MWp
AC output
2.36 MW

Fujian, China

PV capacity
1.6 MWp
AC output
1.6 MW

Thank you.

Enjoy Green Energy