- SIGENERGY

Your Green Energy Partner

20.12.2023

Australia





Founder & CEO

Tony Xu

Created Global No.1 PV Inverter Brand & Shipment

Created China No.1 Al Computing chips & Framework

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1999 - 2010	2010 - 2020	2020 - 2022	2022
Head of Wireless Algorithm R&D	President of Smart PV Business	President of AI Business	Founder & CEO



Shanghai HQ & Factory



10,000 sqm

34+ Global Markets

20,000 sqm

2 GWh Battery Production 4 GW Power Production Remove industry **pain points** with an **innovative** solution that's **Simpler, Safer & Smarter in every way.**



Challenges with ESS

Complex Installation

Time-consuming installation, piecing together separate devices bring additional field wiring

- 2 Complex manual settings, slow system commissioning and software upgrade
- B Extensive wiring & connections, increase the chance of installation error and failure rate



EU Market Outlook

For Solar Power

The number of full-time solar installers

in 2021

0.46 million

1+ million

Challenges with ESS

Safety Issues

- High voltage at battery pack level leads to arcing, human safety risk
- 2 Lack of thermal and electrical monitoring in critical spots at cell level to predict potential failures

Jack of Pack-level control / targeted electrical isolation

Lack of fire suppression and thermal isolation to manage thermal runaway

Battery Fire

Salt River Project in Chandler, Arizona, US

ESS Explosion Residential Batteries, Germany



Challenges with ESS

Poor Long-Term Performance

- Mismatch losses grow to significant levels over time and reduce battery capacity and useful life
- 2 Low system availability, any failure will shut down the entire system. Recovery is time and labor-intensive
- 3 Field replacement of partial battery never easy, resulting in high cost for each replacement





Weakest battery cell dictates performance of the entire pack

SIGENEROY



Pioneering ESS Innovation

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Full Integration Z

Unmatched

Safety

Exceptional Performance Ultra-Fast Installation

Next-level Intelligence





SigenStor

The world's first 5-in-1 energy system



IF Design International Design Award

iF

Excellence Awards









Sigen Energy Controller

Sigen EV DC Charging Module Ready for V2X

Sigen Battery

– **6** batteries per stack

5 – 48 kWh energy capacity range per stack

AC output p	ower	(kW)			
Single phase	5.0	6.0	8.0	10.0	12.0
Three phase	5.0	10.0	15.0	25.0	30.0

Bi-d	irectional charging (kW)
12 5	25.0	

Battery capacity (kWh)

200x Oversizing DC/AC ratio 1phase

160x Oversizing DC/AC ratio 3phase

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Simple & Fast Installation

Quick connectors70%+ Time Saved





Auto-networking
Fast commissioning



PV power Home loads power Battery power EV charger power Grid power

One-click diagnosis **Eliminates** user error



15 mins Stackable Installation

Sigenergy Others

5 mins Fast Commissioning

igenergy	
Others	



Architecture of Safety

Low voltage = Safety

Reduces hazardous level during installation, failure and replacement

Reduces electrical arcing within pack

- Longer cycle life
- Higher energy density



280 Ah

Battery Cells

32.85 V

Static battery voltage human safe



5-layer Battery Protection





5

Energy

Gateway

DC bus protection

Grid fault protection

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Grid

5-layer System Protection



Parallel Connection, Simplify Warehouse Mgmt.

VS

, sigenergy

Battery Packs Connection in Parallel



Better battery equalization

Flexible mix of packs for different battery SOH or SOC Pack-level controllers reduce mismatch losses, isolate failed pack and enable low-cost easy replacement Others

SIGENEROY



Battery Packs Connection in Series

Diversity energy sources of EVDC



Smart control via mySigen App

Real-time charging status & remote control 🗧 Multiple charging modes

Bi-directional charging



V2H: backup your home with your EV

V2X



V2G: peak shaving and VPP dispatch

The EV-Home Energy Bridge





Versatile Energy Hub **1 ph homemax** - up to 2 Systems 3 ph homemax - up to 2 Systems Customized Gateway - unlimited Systems Built-in Uninterrupted 3 sources of hybrid power control unit & power sensor 0 ms switch to 0 ms switch to backup mode backup mode 杠 $\equiv \Theta$ Grid 0 ms switch to 0 ms switch to Generator SigenStor on-grid mode on-grid mode ms UPS 10 ms Computer & Television 20 ms SigenStor LED lamp 41 ms high-power loads 500 ms (e.g. EV chargers) Incandescent lamp **Distribution Panel** Both whole home & partial backup supported Generator controllable loads (e.g. heat pump)

Grid connection



Powerful EV AC Charger







Add battery modules anytime. Pv only – cec listed on 5&6kw SP



SIQENERQY





mySigen App





VPP Capable



SigenStor

The world's first 5-in-One



DC Charging

Integrated into solar + ESS system for the first time

Sigen Al The world's first GPT-4 empowered energy APP

0 ms Load side disruption V2X Bi-directional charging 5-layer Battery safety protection

280 Ah Long cycle-life battery cell 15 mins Stackable installation 5 mins Fast commissioning

Perfect for Residential & Commercial



SIGENERGY



Flexible configuration



Traditional solution, poor flexibility





Easy installation

Sigenergy, Simple and stackable

Easier to install | Lighter per stack | Thinner AC cables



Traditional solution, Complex installation





Boosted ROI

CAPEX saving

- Flexible in ESS capacity
- Fast installation & commissioning
- 50% footprint saved
- Cable and labor saving

OPEX saving about 85.0%

- 5-layer safety protection
- 1-click system diagnosis
- IP66, free of maintenance
- Mixed use of new & old batteries

Higher Yields

- Multi-MPPT for higher yields
- Battery pack-level optimizing
- 0 ms load-side disruption
- AI Mode, intelligent operation



Sigenergy First MWh-level C&I system in Spain



Bodegas Hijos de Juan Gil, Spain

MW



PV+ESS system 500 kw 960 kwh

ESS only system

2.04 MWh



Natural organic soil fermentation



Recycling of production wastewater



Sigenergy Industrial ESS on Manufacturing Center



China (Shanghai) Lingang New Area

Estimated annual power generation 398,200 kWh

-SigenStor x 2

SIDENERS





AC output power 240 kWac

PV capacity 362 k <Wp ESS capacity 432 kWh



Sigenergy Commercial ESS in Office Campus



Pujiang High-tech Plaza, Shanghai, China

Estimated annual generation 210,540 kWh

Carbon emissions reduction 209,908 kg/year

PV footprint **1050 m²** PV capacity 191.4 kWp AC output power 250 kWac

ESS capacity 448 kWh

mmm





Hybrid Solar + ESS Plant in Chicken farm, Myanmar

Mandalay, Myanmar Estimated Annual Generation 96,000 kWh Fuel cost savings 41,400 USD/year PV capacity 53 kWp AC output power 50 kWac ESS capacity 32 kWh Home to over Power supply for Power supply for cooling equipment ventilation equipment 60.000 chicken Power supply instead of diesel generators during daytime outages. 水机油 204.2



Hybrid Solar + ESS Plant in Shopping Mall, South Africa







2024 Roadmap: Enrich C&I Solutions







SigenStor

Multi-parallel connection supported Flexible, Suitable, Scalable

SIGENERGY

EMS inside

Industry-leading 350 ms reverse power flow control

IP66

Free of maintenance during lifetime

< 50% footprint

Higher energy density vs. traditional C&I ESS solution

> 60% MPPTs

16 MPPTs for 100 kW vs. other inverters with 10 MPPTs or less

Compatible with both

Hybrid & on-grid

5 mins

Fast commissioning, multiunits auto. detect & network click

Full system diagnosis, check on cabling & battery status



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Thank You.

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SMART ENERGY COUNCIL

Accorrectedant works

ALL- ENERGY AUSTRALIA

SIGENERO

Pacadu

Paca



В	С	D	E	F	G	Н		J	K
na sheringa maratan ing katalar	-		40	Batte	ry size	(kWh)		40	10
Inverter size	5	8	10	13	16	24	32	40	48
Sigenstor EC 5.0SP									
Sigenstor EC 6.0SP									
Sigenstor EC 8.0SP									
Sigenstor EC 10.0SP									
Sigenstor EC 5.0TP								0 0	10
Sigenstor EC 10.0TP									
Sigenstor EC 15.0TP									
Sigenstor EC 20.0TP									
Sigenstor EC 25.0TP									
Sigenstor EC 30.0TP		-							
		Combo	os alrea	ady liste	ed				
		Combo	os subr	mitted a	ind awa	ait to be	listed		
		Combo	os awa	it subm	ission	to CEC			