

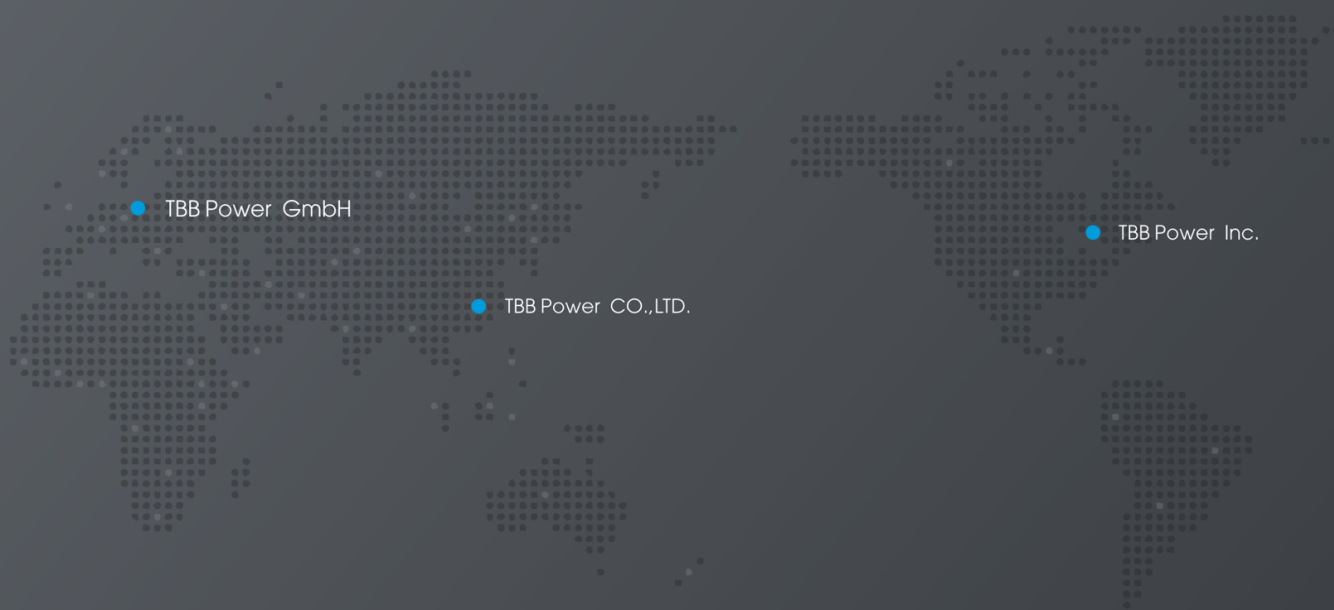
# SIES

Self consumption hybrid PV system



PURSUIT OF PERFECTION

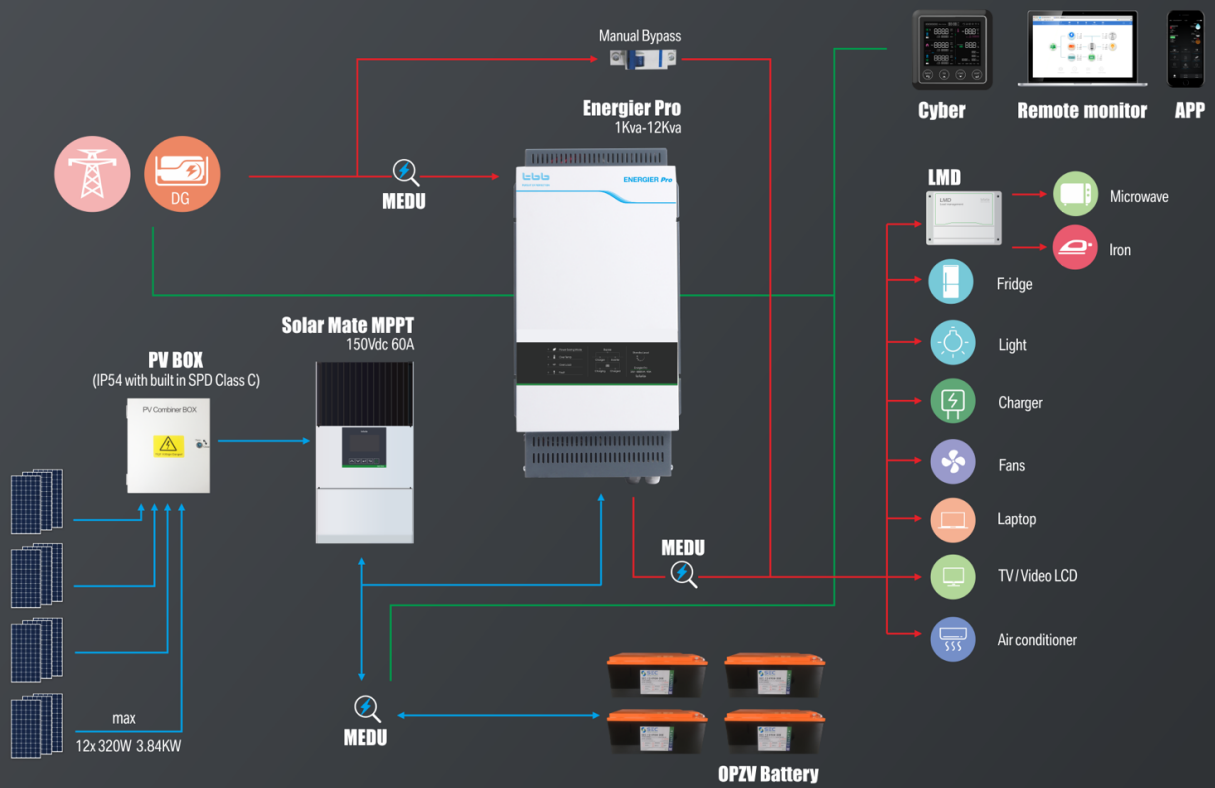




# SIES

is the self consumption Hybrid PV system developed by TBB Power. With high performance battery designed as the storage, SIES could take use of energy both from sun, grid and generator, allowing you to be energy independent. SIES could take the control of generator start and stop.

SIES is an independent power solution for household and small business, assuring you the continuous power without being affected by power shedding or blackout. It is the real solution for area where has no power supply or suffers electricity shortage.



## Fully integrated system

Combined of MPPT charge controller, heavy duty bi-directional inverter, energy managementsystem, energy meters, circuit breakers and central monitor,SIES is a fully integrated systemwith all components well configured and preprogrammed in together.

Designed with the concept of Plug and Play, it requires no further configuration and only a small number of connections. System installation turns out to be an easy job and system performance was assured as well.

**PLUG and PLAY**  
Saving  
Installation Time **80%**

**Solar Mate**

**Energier Pro**

**MEDU module**

Daily energy consumption (KWH)  
Daily PV harvest (KWH)

**Cyber Central Monitor**  
with optional GPRS or WIFI

**PV connector**

**Battery monitor**

Battery state of charge  
Time to Go

**AC Input Circuit Breaker**

**AC output Circuit Breaker**

**Battery connector and Circuit Breaker**



## High performance inverter

Energier Pro bi-directional inverter built inside is suitable to reliably operate all kinds of home appliances, such as TV, washing machine, stove, microwave, water pump and air conditioner. Thanks to its industrial leading efficiency, the system can efficiently manage the energy flow and save your initial investment.

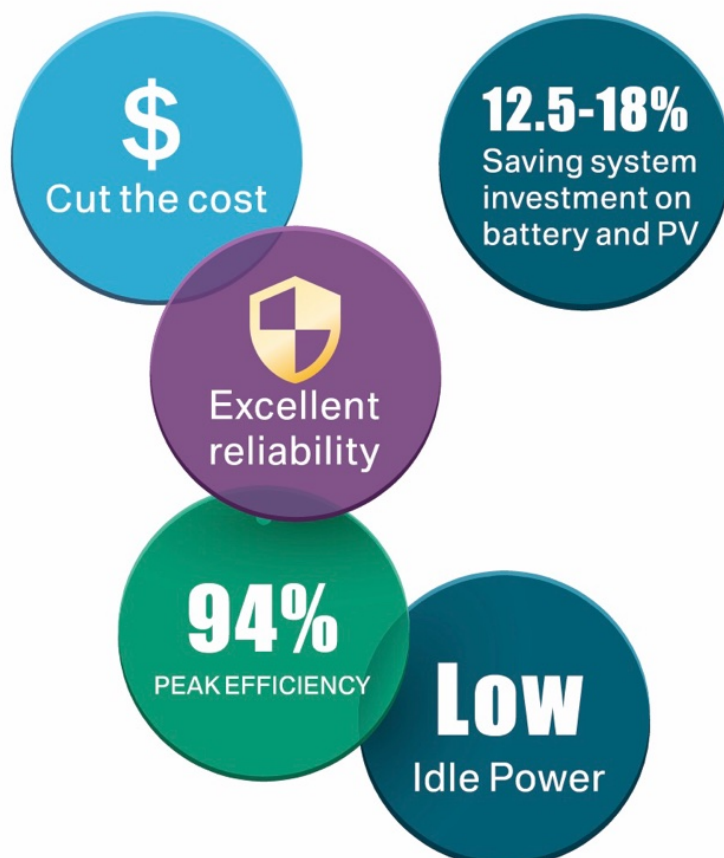
**2KVA-8KVA**

**12Vdc-48Vdc**

## High system efficiency

SIES is designed with Solar Mate MPPT charge controller with peak efficiency up to 98%. Maximum Power Point Tracking (MPPT) technology can increase the energy production from a PV by over 30%, especially good upon low irradiation sun such as sunrise, cloudy day etc. It is a multi-voltage MPPT with built in sophisticated battery charging algorithm for both lead acid battery and lithium-ion battery.

Energier Pro bi-directional inverter designed in SIES features leading conversion efficiency up to 94% and extraordinary low idle power, of which is an assurance protecting the precious energy harvest from the sun.



## Intelligent energy management

According to the chosen logic, software inside of SIES will automatically take control of all energy flow. Energy produced by PV system and from grid will be optimized in combination for your usage.

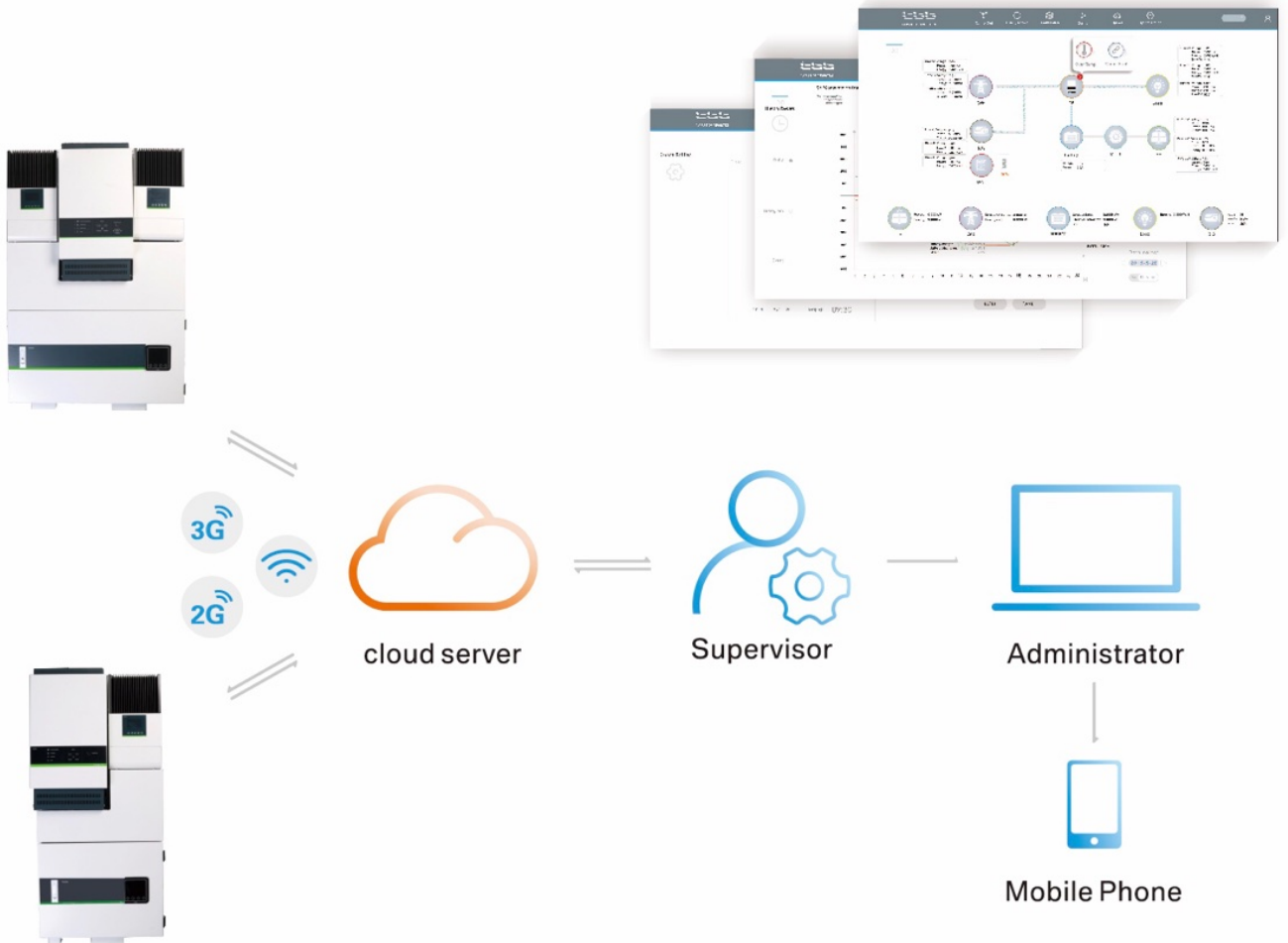
Generator can be connected with system, SIES can take full control of generator. RAPConfig offers you a convenient tool to configure to change the system setting.



## Comprehensive monitoring

SIES offers comprehensive monitoring solution. Cyber central monitor shows all data of energy production, energy consumption and battery state of charge, clearly and in real time. Meantime, remote monitoring function is available either through GPRS or wifi. Through web supported by cloud server, customer could obtain all data of running system in both real time and history records.

## Remote monitoring and operation





## System configuration

Energier Pro	CF2060L CF3090L	CF2030M CF3045M	CF2015S CF3020S CF4030S	CF5090M	CF6050S CF8060S	CF6050S CF8060S
MPPT Charge Controller	SP60-150	SP60-150	SP60-150	SP60-150	SP60-150	SP60-150*2
Max PV Size	0.96KW	1.92KW	3.84KW	1.92KW	3.84KW	7.68KW
Recommended Battery Capacity	3.8KWH	7.6KWH	15.2KWH	7.68KWH	15.2KWH	30.4KWH
Smart Box	SIES-30L60	SIES-30M60	SIES-40S60	SIES-50M60	SIES-80S60	SIES-80S60x2

## System

Rated DC voltage	12Vdc	24Vdc	48Vdc	24Vdc	48Vdc	48Vdc
Central Monitor	Cyber					
System Logic(Settable)	Solar Hybrid / Solar Energy Storage / Solar Backup					
Communication	Bluetooth Built-in, Optional GPRS or WIFI					

## Measuring Unit

AC Input	Voltage, Frequency, Current, Power, Energy					
AC Output	Voltage, Frequency, Current, Power, Energy					
Battery	Voltage, Charging Current, Discharging Current, Power, Time To Go, State Of Charge.					
Solar	PV Voltage, Current, PV Harvest KWH					

## AC Input

Pre-installed MCB	2-pole 25A	2-pole 25A	2-pole 32A	2-pole 40A	2-pole 63A	2-pole 63A
Pre-installed SPD	Uc:385Vac, In:20KA(8/20us), Imax:40KA(8/20us)					
Twin AC Input	Optional					
AGS	Standard, Support 2 Wire and 3 Wire Generator, Max. 8A/30Vdc 1.5mm <sup>2</sup> , PA66/VO, M3 screws					
Terminal	57A/600V 6mm <sup>2</sup> PA66/VO M4 Screw					
Includes	Cables Between SIES and Energier Pro					

## AC Output

Pre-installed RCD (Residual Current Device)	1P+N 16A/ 30mA/4.5KA	1P+N 16A/ 30mA/4.5KA	1P+N 25A/ 30mA/4.5KA	1P+N 32A/ 30mA/4.5KA	1P+N 40A/ 30mA/4.5KA	1P+N 40A/ 30mA/4.5KA
Pre-installed Maintenance Bypass RCD(Residual Current Device)	1P+N 16A/ 30mA/4.5KA	1P+N 16A/ 30mA/4.5KA	1P+N 25A/ 30mA/4.5KA	1P+N 32A/ 30mA/4.5KA	1P+N 40A/ 30mA/4.5KA	1P+N 40A/ 30mA/4.5KA
Programmable Output	2-ways 16Amps(max.), Base on Time, SOC or Power Limit					
Terminal	57A/600V 6mm <sup>2</sup> PA66/VO M4 Screw					
Includes	Cables Between SIES and Energier Pro					

## DC Input

Pre-installed Battery MCB	375A/60Vdc (3 pole 125A)	200A/60Vdc (2 pole 100A)	126A/60Vdc (2 pole 63A)	300A/60Vdc (3 pole 100A)	250A/60Vdc (2 pole 125A)	250A/60Vdc (2 pole 125A)
Terminal	Copper Bus Bar with 2XM8 Screws					
Includes	Cables Between SIES and Energier Pro, MPPT Charge Controller					

## Solar Input

Pre-installed PV MCB	63A/250Vdc	63A/500Vdc	63A/500Vdc	63A/500Vdc	63A/500Vdc	63A/500Vdc*2
Terminal	100A/800V 16mm <sup>2</sup> PA66/VO M4 Screw					
Includes	Cables Between SIES and MPPT Charge Controller					

## Mechanical Data

Enclosure	Steel with Powder Paint					
Protect	IP20					
Dimension (mm)(Max.)	1027*475*174			1077*493*192		1077*700*192
Weight(kg)	40/41	40/41	40/41/43	58	63/69	70/76

## Standard

Safety and EMC	EN62109-1,EN62109-2		EN61000-3-2,EN6100-3-3,EN61000-6-1,EN61000-6-3			
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