

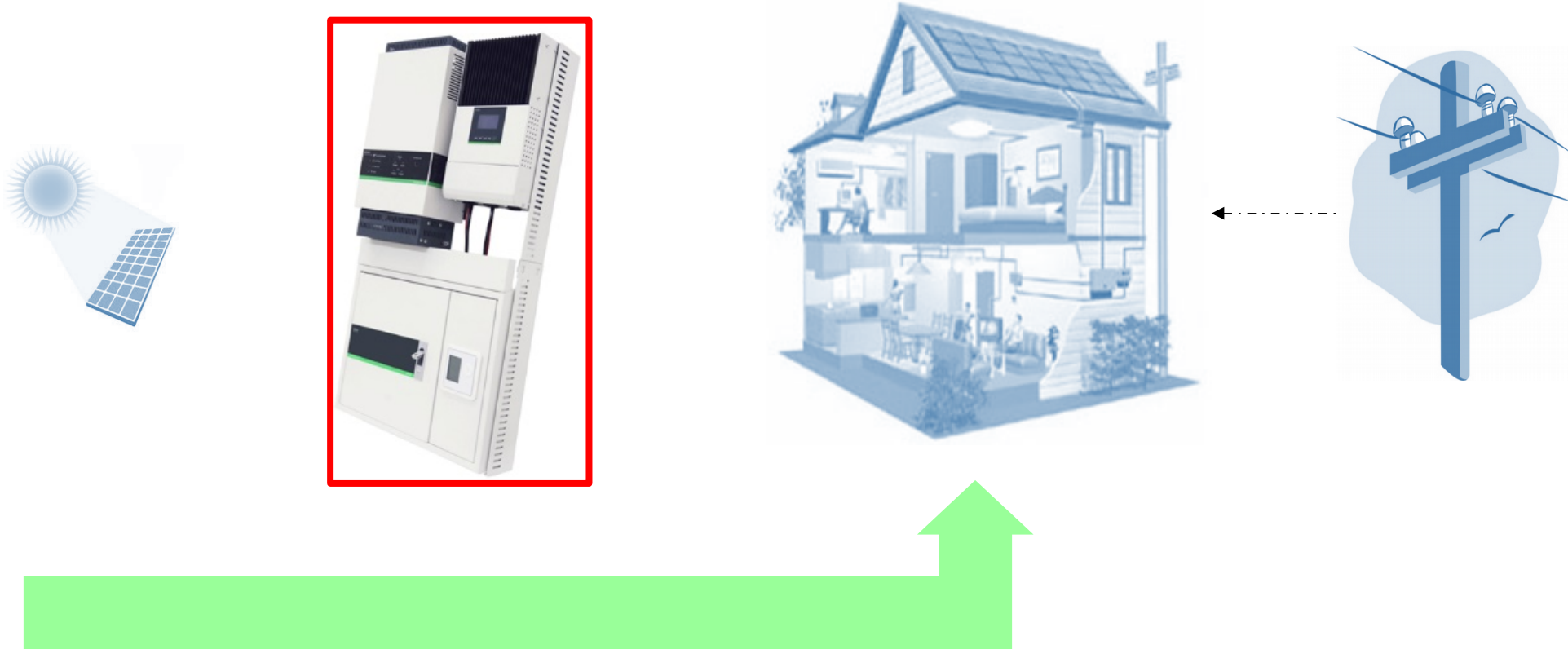


This solution presentation covers the following topics:

- **SIES** Wall-mounting Solar Intelligent Energy System
- **SIES-mini** mini Self-consumption Hybrid Solar System
- **Eneriger Pro** hybrid / off-grid solution
- **Energier Apollo** All-in-One hybrid solution
- **Solar Max** Off-grid solution
- Product datasheet

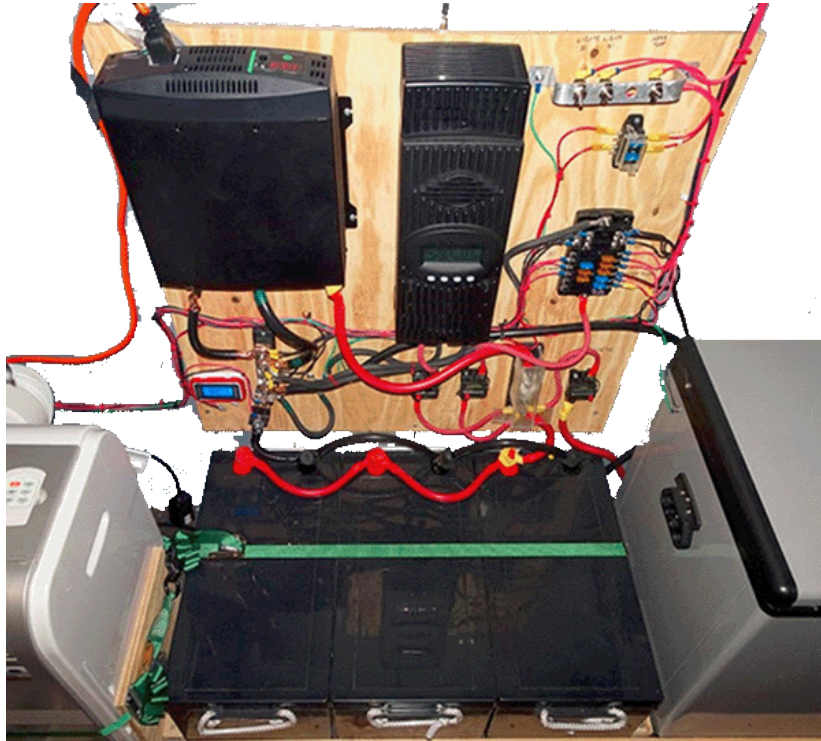
1. SIES – Solar Intelligent Energy System

SIES aims at 100% self-consumption of solar energy



100% solar energy Self-consumption

Regular solar off-grid system



- Complicated installation
- Messy cabling
- Poor system monitoring and control

Regular Energy Storage Cabinet



- Dedicated floor space
- Unselectable battery types
- Limited scalability on battery capability

SIES system components

1 Energier Pro

Inverter/charger combi

2 SolarMate

Charge Controller (MPPT)

3 MEDU (Multi-Energy Detection Unit)

4 Battery monitor - hall sensor

5 Cyber

Central Monitor (Bulit-in Bluetooth, optional GPRS / Wifi)

6

PV modules connectors

7 Battery connector and Circuit Breaker

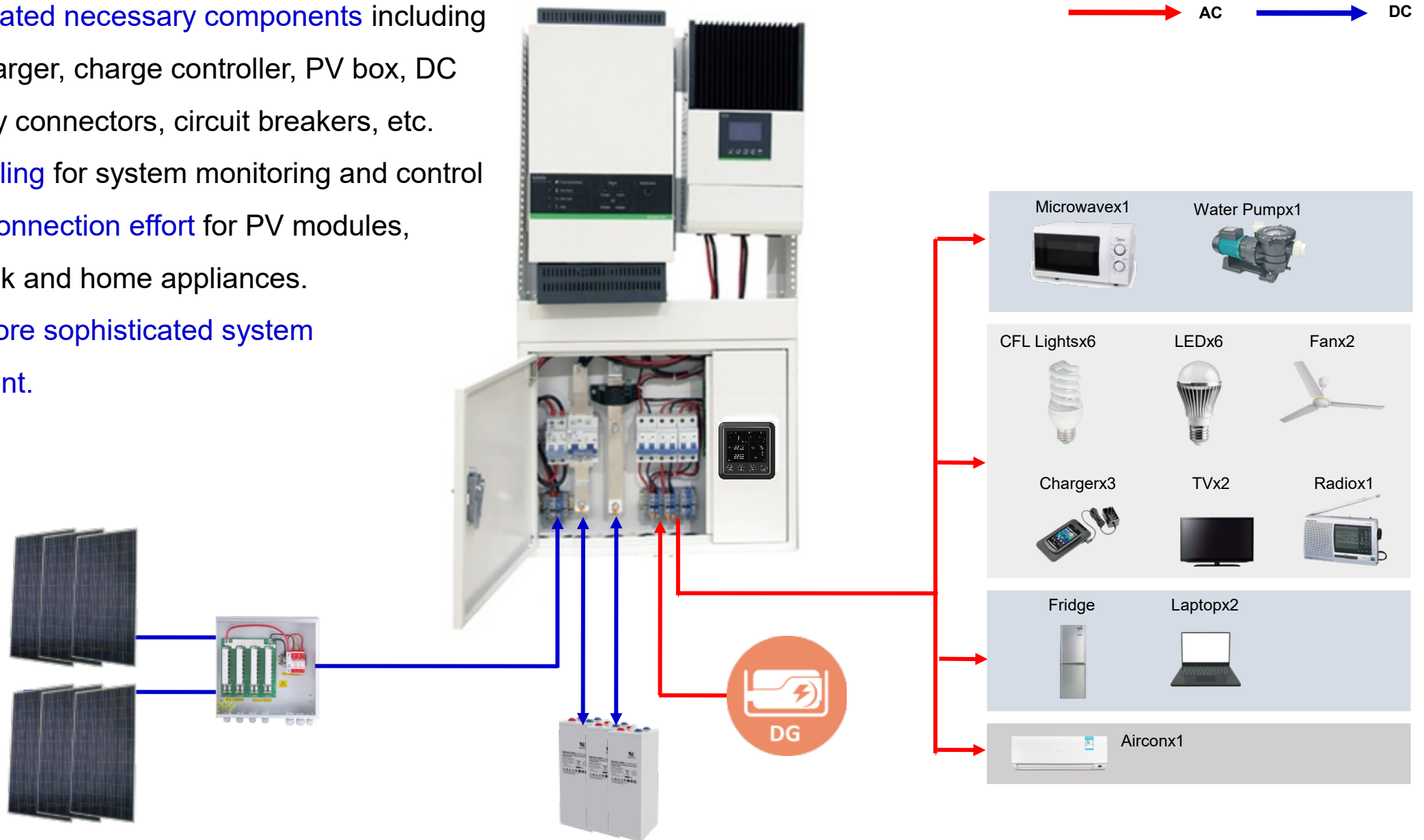
8 AC Output Circuit Breaker

9 AC Input Circuit Breaker



SIES significantly reduces installation complexity and time by 80%

- Fully Integrated necessary components including inverter/charger, charge controller, PV box, DC box, battery connectors, circuit breakers, etc.
- Built-in cabling for system monitoring and control
- Reduced connection effort for PV modules, battery bank and home appliances.
- Enables more sophisticated system management.



SIES supports wide selection of batteries



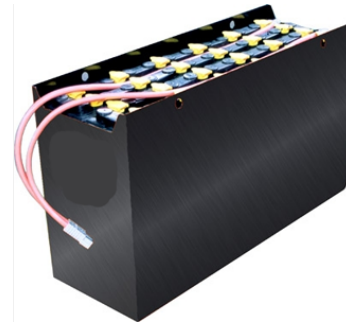
SIES



AGM



GEL



Traction



Semi-traction



Lithium-ion



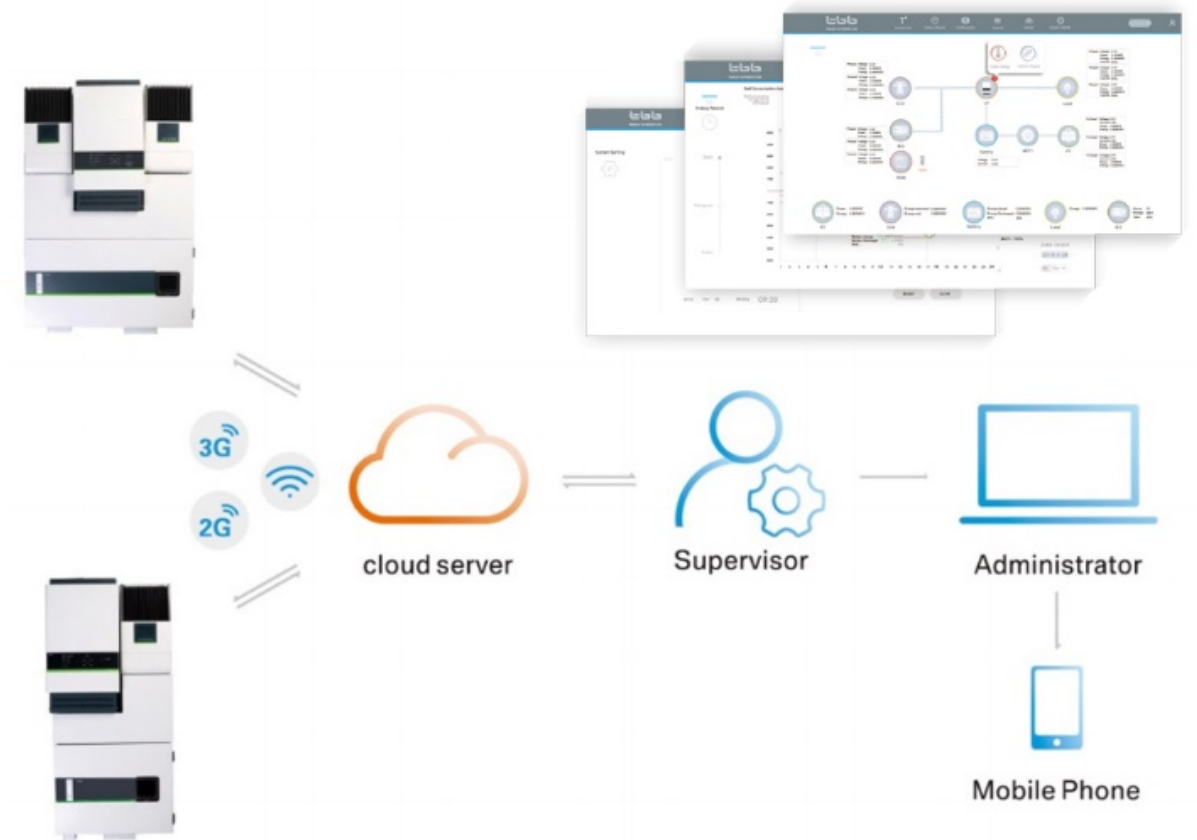
Lead Carbon

Comprehensive system information and remote control

- 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.



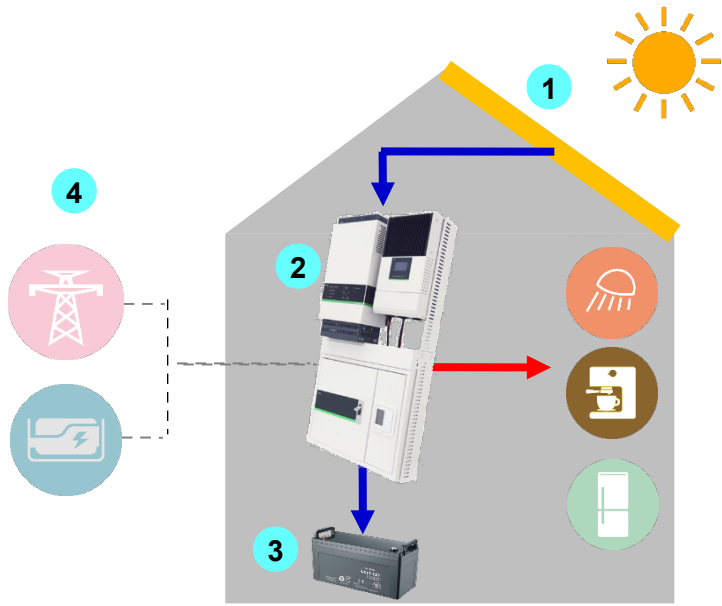
Cloud-based Remote monitoring and operation



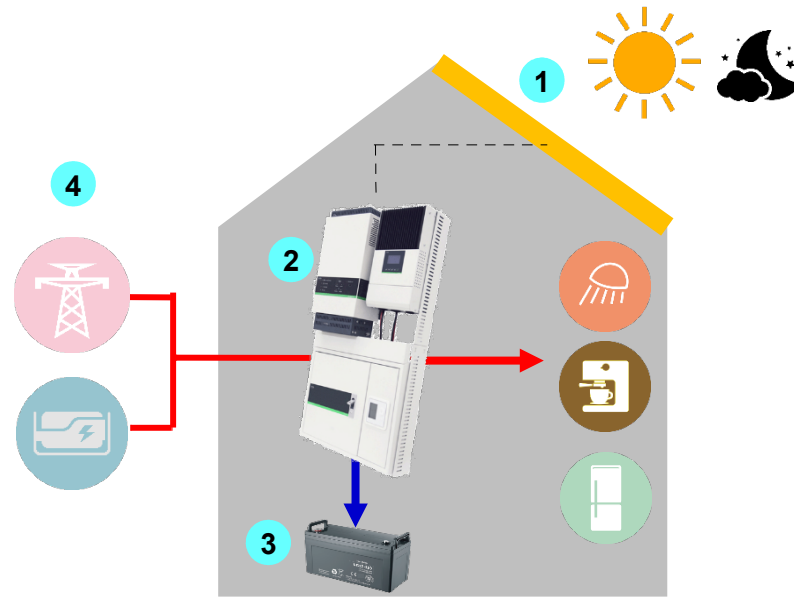
Highlights of SIES

- Off-grid Solar Energy Storage system dedicated for residential and SME customers demanding **energy independence**.
- High safety, best cost performance, and complete energy independence thank to the **off-grid system design**.
- True heavy-duty, high reliability, industry-leading surge capability due to applying **low frequency technology** in bi-direction solar inverter/charger combi.
- **Smart energy management** supports two kinds of work mode, either Solar Energy Storage or Solar Power Backup, in order to realize **100% self-consumption** of solar energy, achieve energy savings, and realize eco-efficient consumption.
- **Wall-mounting and integrated design** saves space, optimizes central control, and improves the general system quality.
- Except batteries, all components necessary for the storage and provision of self-generated power are **fully integrated** into the wall-mounting rack.
- **Plug-and-play design** requires only a few wire connections and reduces installation effort and time by 80%
- **SmartPhone App, Cloud-based monitoring** are available for improving customer experience.
- Wide choices of **battery type** and high scalability of **battery capacity**.

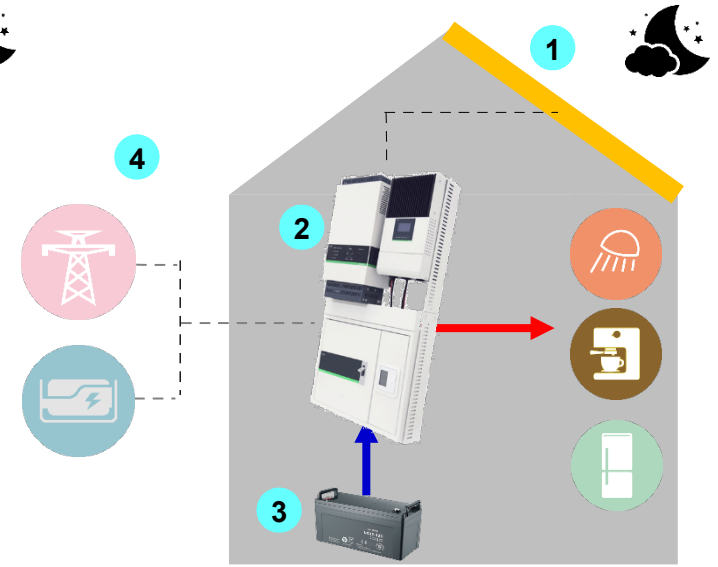
Working Scenario 1 - "Solar Hybrid Mode" for areas with unstable grid



- 1. PV modules
- 2. SIE
- 3. Battery bank
- 4. Grid or Generator



- 1. PV modules
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Solar energy will be the primary source to

- power the loads, and
- meantime charge the battery

Upon solar energy is not sufficient,

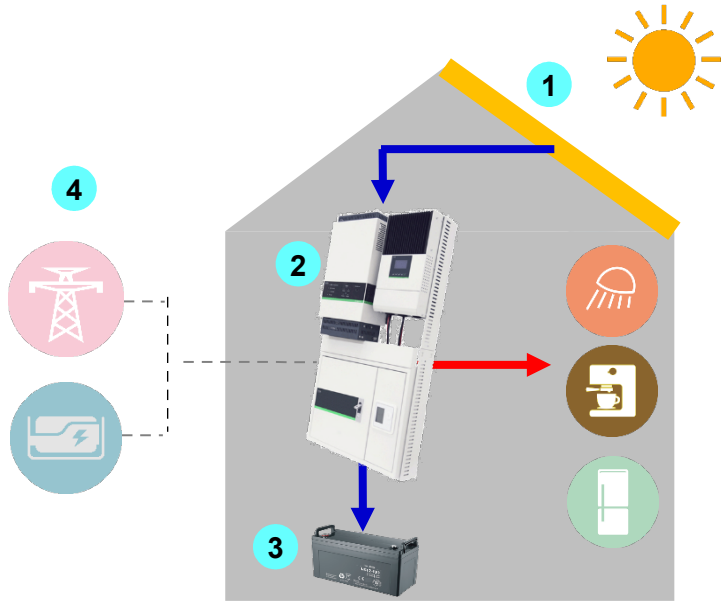
- Grid or generator will be introduced to power the loads

Only if the grid is unstable, will

- battery be discharged to power the loads



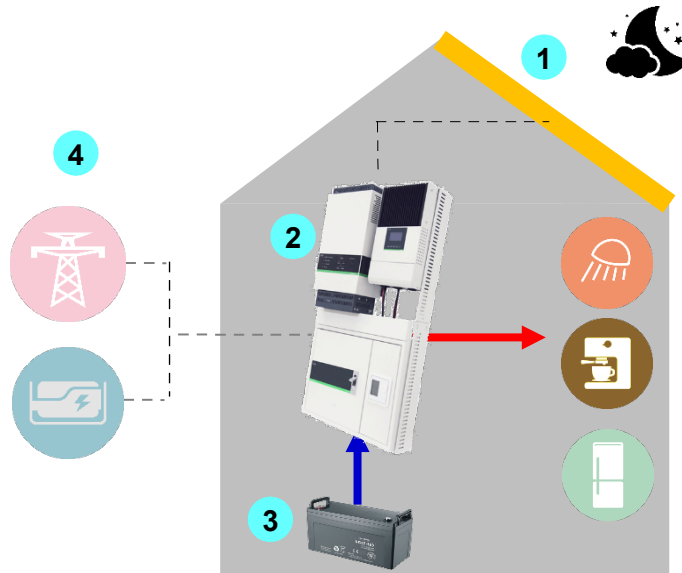
Working Scenario 2 - "Energy Storage Mode" : Maximize energy self-consumption



- 1. PV modules
- 2. SIES
- 3. Battery bank
- 4. Grid or Generator

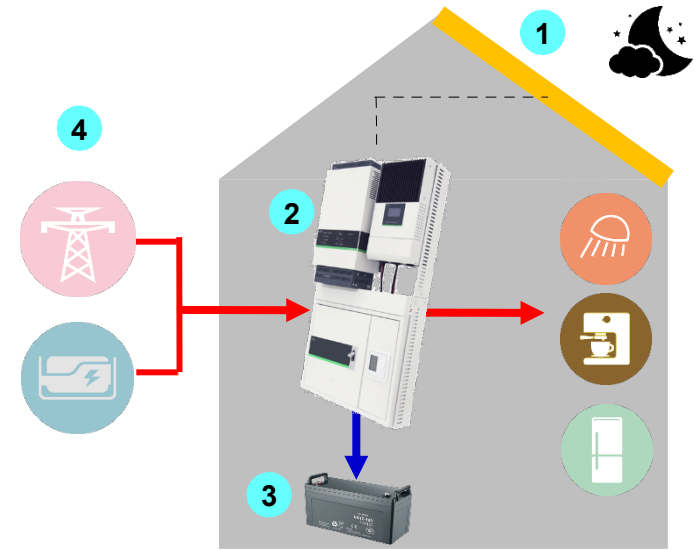
During sunshine, PV modules will

- power the loads, and
- meantime charge the battery



- 1. PV modules
- 2. SIES-wm
- 3. Battery bank
- 4. Grid or Generator

Upon sunset, energy stored in the battery will be discharged to power the loads

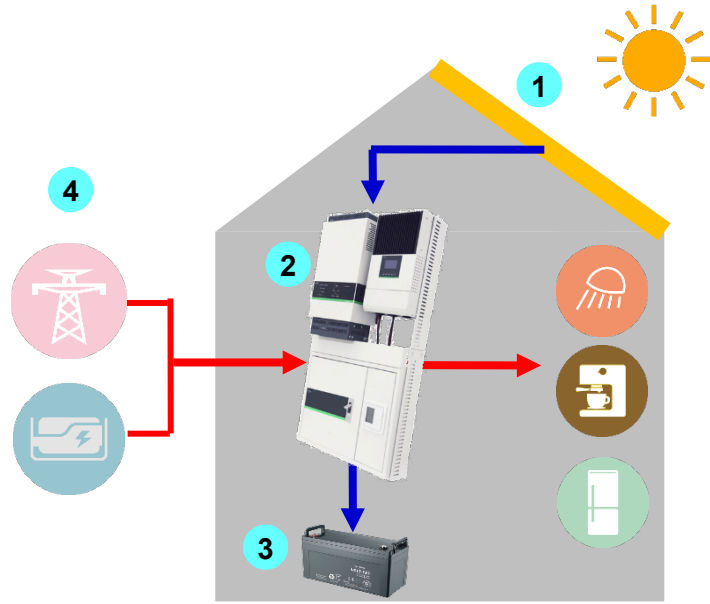


- 1. PV modules
- 2. SIES
- 3. Battery bank
- 4. Grid or Generator

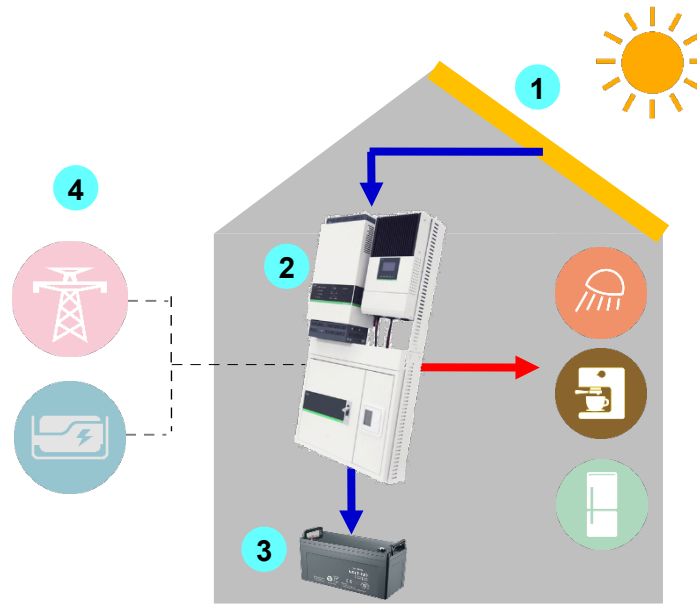
Once battery is discharged to low capacity, SIES will

- connect grid to power the load.
- Meanwhile, battery can be charged by electricity from grid.

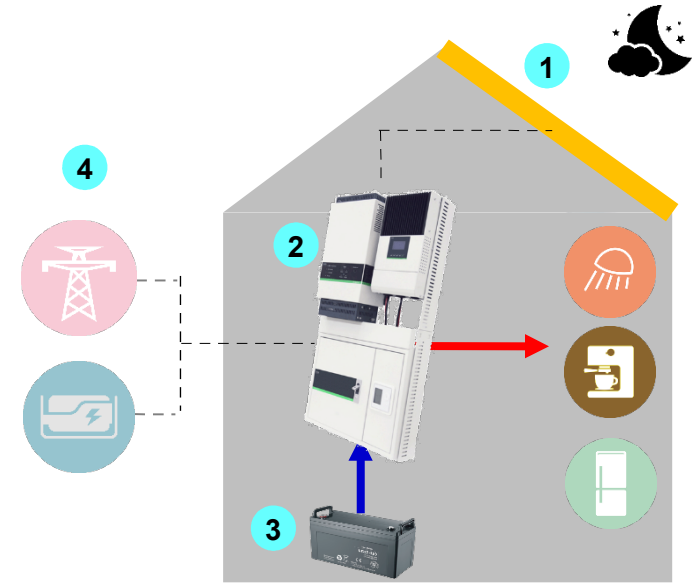
Working Scenario 3 – “Power Backup mode” : Power home against grid outages



1. PV modules
2. SIES-wm
3. Battery bank



1. PV modules
2. SIES-wm
3. Battery bank



1. PV modules
2. SIES-wm
3. Battery bank

- During Sunshine upon grid available,
- PV and grid will charge the battery at same time.
 - The loads will be powered by grid.

Upon grid blackout during sunshine, energy from PV will charge the battery and support the loads

Upon grid blackout during sunset, the loads will be powered by the energy stored in the battery.