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Energy Storage Solution

NEOSUN™ for a clean future of our planet



NEOSUN ESS

Energy storage systems
of any capacity for residential
and industrial application

YOUR SMART ENERGY





ABOUT US

Founded in 2015 by a group of talented engineers, NEOSUN Energy is an international high-tech company specializes in advanced Battery storage and Solar energy products as well as intelligent energy management solutions for residential and commercial energy systems.

Today NEOSUN products have spread to more than 16 countries through our partners, benefitting thousands of customers.



Our Vision

Vision

We believe that the smart energy network now is embracing the same chance as the Internet did 20 years ago. It will ensure the transformation of the energy market and transition to local energy generation based on smart grids and the Internet of Things.

Moreover, it allows making electricity and lighting available in any corner of the world, to change and improve lives by bringing energy, connectivity and water to people in off-grid and remote areas.

Mission

NEOSUN Energy™ for a clean future of our planet.





Global Presence

We are a multinational company that currently has over thousand residential and commercial systems running more than 16 countries globally and our products are credited by TÜV, CEC and are also complied with IEC and many other international standards.



Our Geography



3x
Annual
Revenue Growth

16+
Countries

10MWh+
Shipment

20%+
Employees in R&D

1,200m²+
Manufacturing



WHY ESS

With expensive grid maintenance and high electricity cost, we are confident that ESS is the solution to reduce cost and transform the way homeowners, businesses and utilities produce and use power.



What is ESS

The Energy Storage System is used to capture electricity produced by both renewable and nonrenewable resources and store it for discharge when required. The system allows users to go off grid and switch to stored electricity at a time most beneficial, giving greater flexibility and control of electrical usage. The market for energy storage on grid is growing at a rapid speed, driven by declining prices and supportive government policies.

What's the benefit



- Save money
- Back-up power
- Energy independence
- Environment-friendly

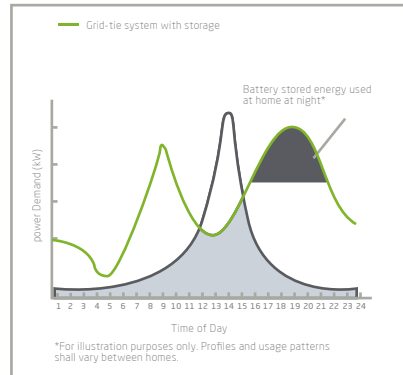
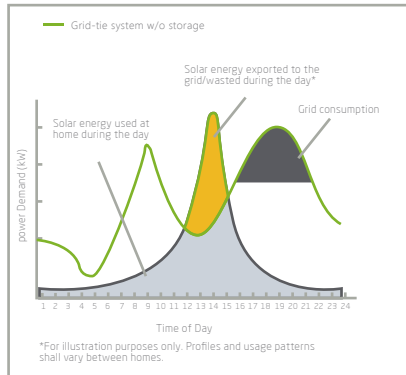
Overwhelmingly, people want to save money and have greater control of their power use. With power cost expected to continue rising, it makes sense that families, businesses and utilities with solar would look to store the solar power they were producing and use it later in the day, reducing their power bills.



ESS Application Scenarios

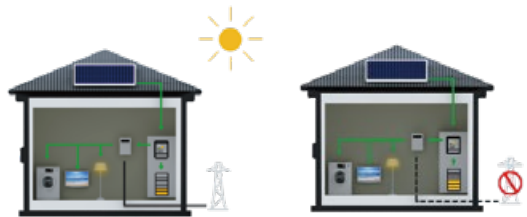
Maximize PV Generation

The typical electricity demand curve usually doesn't meet the PV generation curve. By storing the surplus PV generation into battery storage unit, it can maximize PV generation and reduce electricity bill.



Backup (UPS)

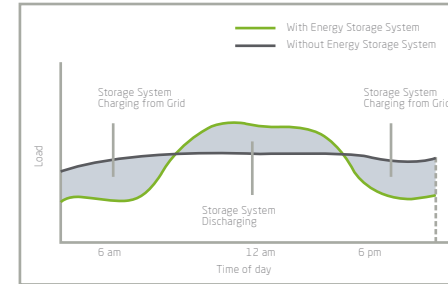
Storage system will backup the load supply when grid fails.



- The system can switch to an off-grid mode when a power outage occurs or grid power supply is insufficient.
- Users can also set UPS emergency priority or UPS emergency reserve to meet the needs of different families for stored electricity.

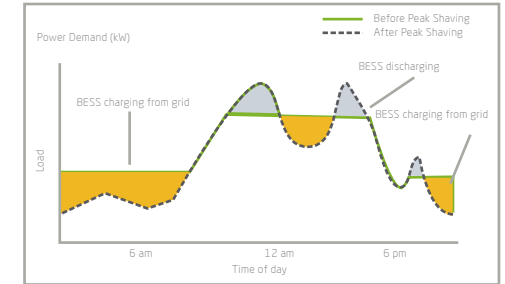
Load Shifting

Reduce customer's electricity bill by storing electricity during off-peak time and shift energy to be used at peak time.



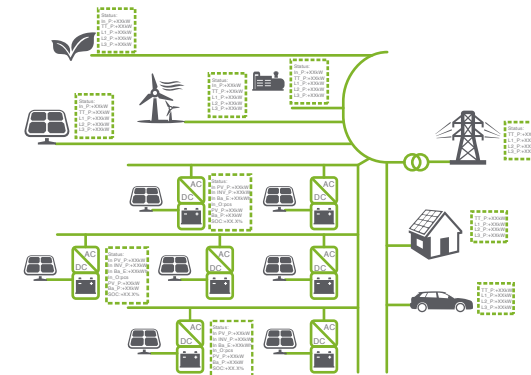
Peak Shaving

The goal is to avoid the upgrade of transformer capacity to supply the peaks of the highly variable loads. Energy storage provides a fast response and emission-free solution. The ESS benefits customers on their bills by saving cost on infrastructure and peak demand charges.



Smart Grid / Micro Grid

Coordinate various power generation sources to form the foundation of smart grid and smart city.



Frequency Regulation

Restore and balance between supply and demand, the storage system is charged or discharged in response to an increase or decrease of grid frequency and keeps it within pre-set limits.



WHAT WE DO

We're passionate about taking the role that the battery storage can play in the energy revolution and network transformation.



Residential

5kW-10kW



Commercial

30kW-300kW



Industrial

100kW-10MW



Our Focus

Our Expertise

- BMS hardware and software design
- EMS hardware and software design
- ESS system design and integration
- Battery & system products manufacturing
- Solution technical support and consultation
- Remote monitoring and online management

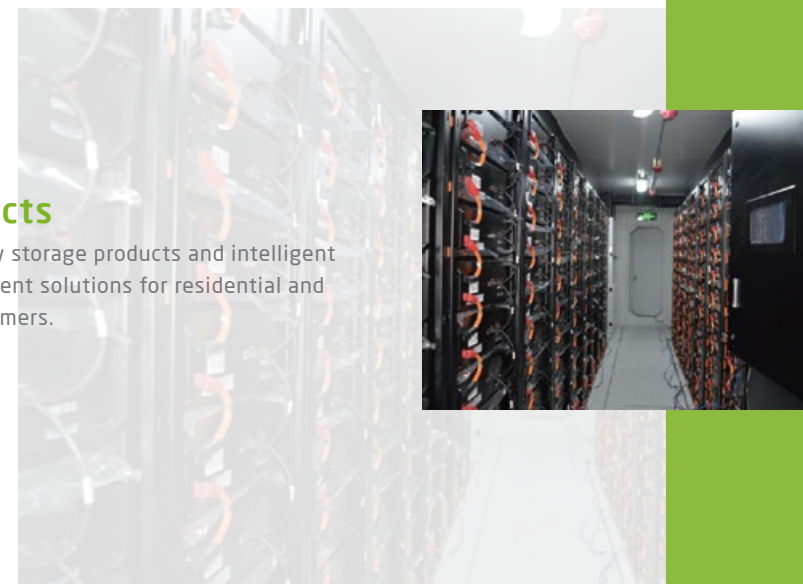
Major Applications

- PV Self-consumption
- Back-up and off grid solution
- Load shifting / Peak shaving
- Microgrids / Mini-grids
- Virtual power plant
- EV fast charging station solution



Our Products

Advanced battery storage products and intelligent energy management solutions for residential and commercial customers.





Residential

Our residential energy storage solution covers single phase 5kW and three phase 10kW, this range is mainly designed for PV self-consumption, back-up power, load shifting and off-grid for household application.



5.7kWh

NEOSUN HOME BATTERY

5.7kWh Li-ion battery (LFP)
BMS integrated
All-in-one module

NEOSUN HOME ESS

- 5kW Single phase hybrid inverter
- 5.7kWh LFP battery
- Integrated BMS
- Depth of discharge (DoD) 90%
- Modular design
- Parallel operation up to 30kW/34kWh
- 10 year performance warranty

5kW Hybrid
inverter module

5.7kWh x 2
Li-ion battery module



10kW Hybrid inverter module

High voltage
Cable box

2.9kWh x 4
LFP battery module

NEOSUN HOME ESS-10K

10kW 3 Phase hybrid inverter
Starting from 11.5kWh LFP battery
200V (2.9kWhx4)
Modular design high voltage

Commercial

Our C&I energy storage solution covers everything from 30kW to 300kW, we have delivered hundreds of projects covering most of the C&I applications such as demand charge management, PV self-consumption and back-up power, fuel saving solutions, microgrid and off-grid.



NEOSUN ESS-30K/60K/90K

- 30kW to 90kW Battery Inverter Module
- 12 x 5.7kWh LFP battery (69kWh)

NEOSUN ESS-50K/100K/250K

- 50kW/100kW/250kW Hybrid Inverter
- Transformer integrated
- Modular Design



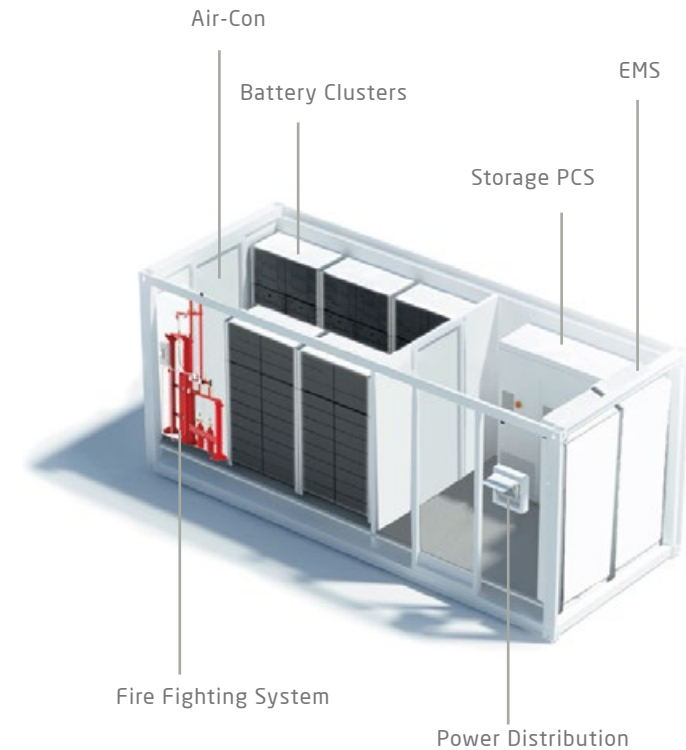
2 x 51.3kWh HV-Clusters

NEOSUN HV-CLUSTER

- 28.5-51.3kWh Battery Cluster
- 5 to 9 units of 5.7kWh (NS48112-S)
- 19" Rack-mount design
- Easy to expand capacity to MWh scale
- Perfect solution for microgrids

Industrial

Big MW/MWh solutions are usually used in integration with renewable energy power plant such as solar or wind farms, or ancillary services such as peak shaving and frequency regulation. Our experienced team is able to provide customized solutions that are stable and flexible to all customers demands.



INDUSTRIAL ESS

We customize ESS solutions for industrial applications:

PCS: 250kW, 500kW, 1MW expandable to MWs.

Battery: 5.7kWh (1C) module, 7.98kWh (0.5C) module, LiFePO4 chemistry

BMS: Intelligent battery management system

EMS: Intelligent energy management system

Container:

If a container is used, our standard ESS container includes the following facilities:

- Fire fighting system
- Air-conditioning system
- Ventilation system
- Lighting system and power distribution system

Depending on the application, the maximum capacity in container would be different:

- 10feet - 300kWh (1C)
- 20feet - 600kWh (1C) / 1.1MWh (0.5C)
- 40feet - 1.26MWh (1C) / 2.5MWh (0.5C)





Battery Packs



HYBRID INVERTER 5K

5kW (single phase)
max. 6 in parallel



NS48112-P

5.4kWh (0.5C)
max. 18 in parallel
(EMS required)



NEOSUN HOME BAT

5.7kWh LFP (0.5C/48V)
max. 6 in Parallel



NS48112-S

5.7kWh (1.0C)
max. 16 in series/cluster
(HV-Cluster required)

Our battery modules are compatible with the inverter brands as shown below:



NEOSUN Cloud Monitoring Platform



Lifelong free
monitoring via Web
and APP



New function and
latest version
upgrade



Set parameters, control
system and build VPP



IoT compatible



WHY NEOSUN

Working in collaboration with international research centres the R&D team of NEOSUN Energy is constantly improving our energy products and working hard on development of new innovative products and cost-effective solutions to meet all your energy demand. We listen to you and deliver what you need.

Core Technology



Safety

Certified by international authorities, NEOSUN Energy products are well recognized with outstanding product safety and reliability. NEOSUN Cloud enables intelligent fleet management and monitors every system performance 24/7.



Leading
Technology

Advanced turn key lithium battery storage systems, controlled by EMS and NEOSUN Cloud with cutting edge algorithm to improve battery lifetime and efficiency.



Various
Solutions

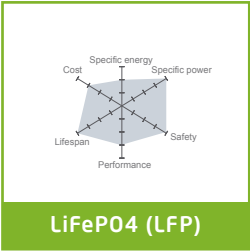
NEOSUN Energy provides customized energy storage solutions for on-grid, off-grid and micro-grid applications at both residential and industrial & commercial levels, which helps customers to achieve energy independence and environmental responsibilities.



Global Energy
Service Provider

NEOSUN Energy is helping to advance the clean energy revolution in over 16 different countries and regions. Making clean energy beneficial to the greatest extent to everyone in the world.

Battery Cells



Designed by the Neosun R&D team the new type of Li-Ion batteries used in electronics and EVs do not suffer from safety issues such as thermal runaway because we have chosen LiFePO4 for its superior life span and safety.



NEOSUN Energy uses only the Metal CAN cells with aluminum casing in all of its battery packs for long life-span and safety.

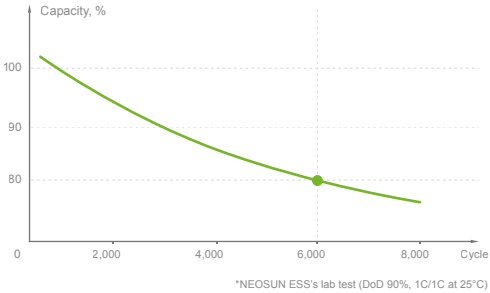
BMS & EMS

NEOSUN EMS are the brain of the ESS system. It manages the ultimate function of the battery and also provides critical safeguards to protect and prolong the life of batteries.

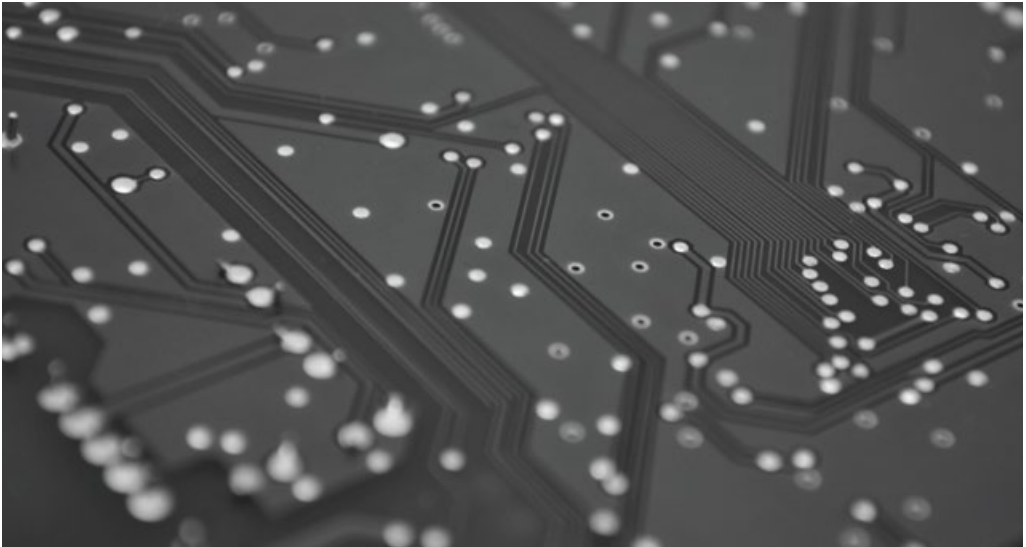


- Real-time volt. / temp./ current monitoring on cell level
- Multiple-level protections based on the data monitored
- Communication to EMS (Energy management system)
- Reliable battery cell balancing management
- Intelligent SOC (state of charge) algorithm
- Capable to be remotely upgraded to latest technology

Integrated BMS ensures more than 6000 cycles lifespan and 90% Depth of discharge (DoD).



- PV Self-consumption maximize
- Load shifting /Peak shaving
- Demand response
- Micro grid control
- Virtual power plant
- Auxiliary control
- Fully programmable for tailored design



CASE STUDY

With proprietary technologies, NEOSUN Energy provides the most reliable and innovative energy storage and solar power solutions widely spread over the globe with different application scenarios.



- Project: Commercial Off-grid
- Power: 150kW/360kWh
- Application: Fuel Saving Solution
- Location: South Sudan, Africa



- Project: Private Household
- Power: 10kW / 17.2kWh
- Application: Back-up power
- Location: Moscow, Russia



- Project: EV Charger Station
- Power: 60kW / 60kWh
- Application: Solar + Storage + EV Chargers
- Location: Russia



- Project: rural electrification
- Power: 5 x 50kW/160kWh
- Application: solar + storage + Diesel mini-grid
- Location: Myanmar