

SMART ENERGY SYSTEMS

LITHIUM TURNKEY SOLUTIONS



ENGINEERED IN
GERMANY

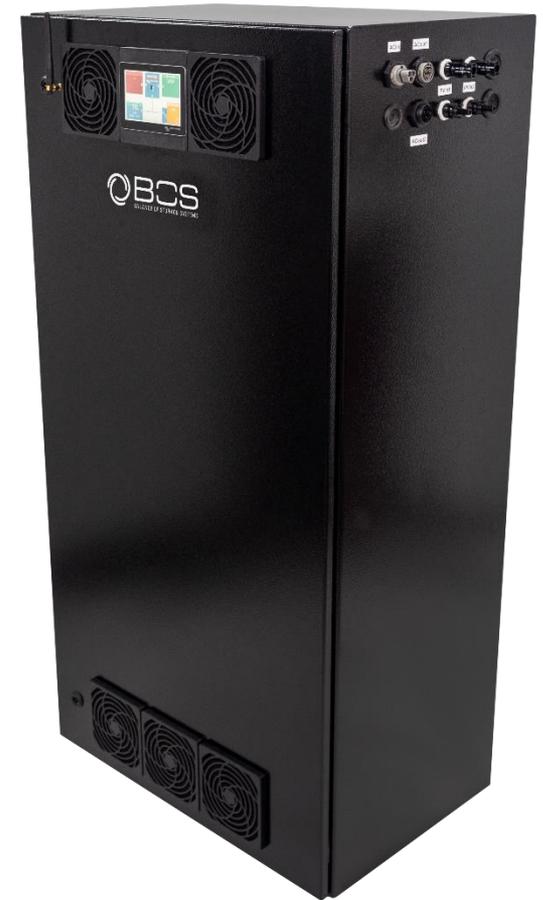
MADE IN
GERMANY



PRODUCTS

BOS AT A GLANCE

- ▶ BOS provides smart, decentralized, bankable energy systems.
- ▶ Covering:
 - 5-140kWh
 - Innovative storage management
 - Charge regulation to manage loads intelligently
- ▶ BOS builds complete turnkey solutions, which are plug and play. These solutions are pre-assembled, pre-configured and pre-tested.



PRODUCT OVERVIEW

Hybrid System Line (HS)

Complete energy management and storage solution with built in lithium battery, inverter/charger and solar charge controller.

- Capacity: 2.5 – 140kWh
- 1.6kVA – 90kVA
- Voltage: 48V
- Single or three phase



MULTIPLE
POWER
SOURCES



REMOTE
MONITORING &
UPDATING



PLUG &
PLAY

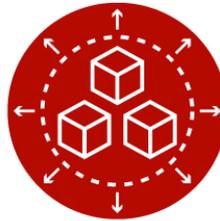


PRE-WIRED /
PRE-CONFIGURED

PRODUCT FEATURES HS SYSTEMS



INTEGRATED
SOLUTIONS



MODULAR &
SCALABLE



REMOTE
MONITORING &
UPDATING



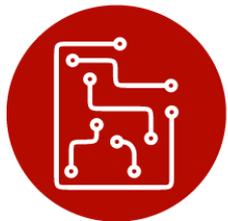
PLUG &
PLAY



RETROFIT
LITHIUM /
LEAD ACID



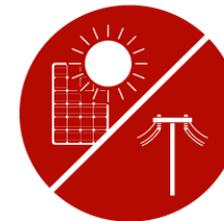
COST
EFFECTIVE



PRE-WIRED /
PRE-CONFIGURED



MULTIPLE
POWER
SOURCES



ON & OFF
GRID

BOS HS SPECIFICATIONS



System voltage: 48V

Range: 5kWh – 140kWh

Usable DoD: 95%

Cycle life: >6000, 15+ years @25 °C

Inverter capacity: 3kVA – 90kVA

- Single or three phase
- Pre-assembled solutions, ready to be deployed
- Modular design, complete freedom with choice of capacity
- Handpicked and tested high quality components, to ensure highest safety and optimum performance

ALL IN ONE INTEGRATED SOLUTIONS

BOS HS: 2.5-140 KWH

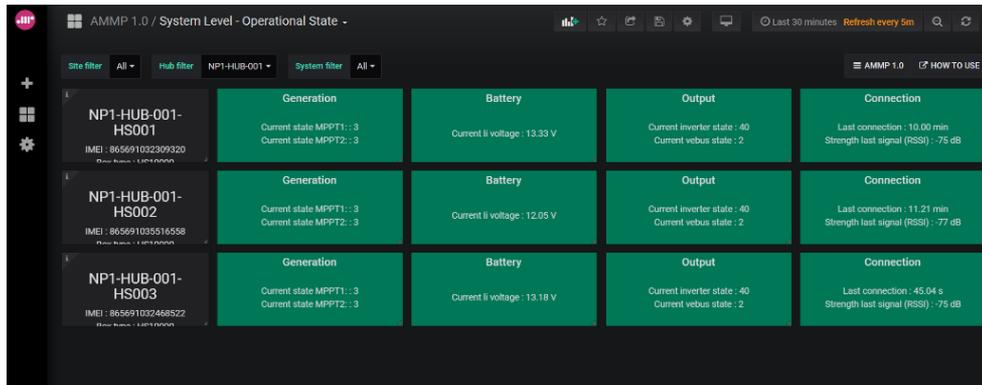


Typical Applications: Off-grid solar home system, large scale backup, rural schools and hospitals electrification, micro utility AC mini-grids and rural electrification projects, holiday homes, hospitality, tourism and agriculture farms.

HS MONITORING PLATFORM

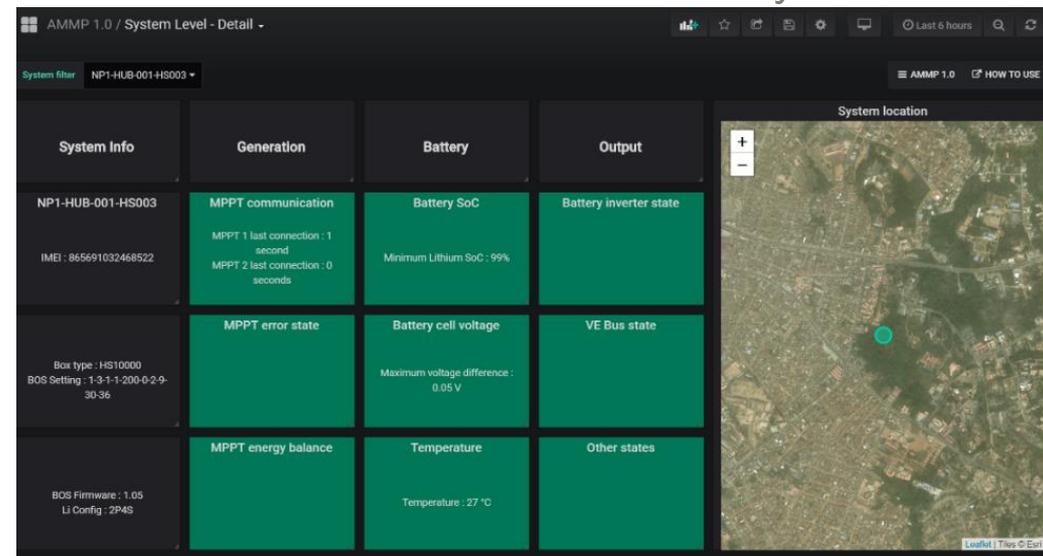
- ▶ Description:
 - All BOS HS solutions are Remote Monitoring enabled
 - In mini-grids monitoring can be used across the components in the project, right from the BOS system to the energy meters at the households
 - Monitoring of daily Wh consumption
 - Total numbers of active meters
 - Error messages, e.g. power limit reached
 - Enables cost-efficient service and maintenance
 - Direct access to portal for BOS customers
 - Remote firmware update of HS systems possible

AMMP - MONITORING PLATFORM



- ▶ Overview of all systems installed (for B2B) and individual systems (for B2C)
- ▶ Get notifications on your device and analyse historic alerts
- ▶ Identify problem causes – fast, efficient and remotely

- ▶ Live data of energy generation, battery bank and cell status, consumption data, firmware versions, settings, voltages, currents etc.





PROJECT PORTFOLIO

 Kanungu, Uganda, 2019

Katate Health Center

The existing health station of Kanungu was in a very poor condition. Simple birth complications, fractures, and infectious diseases often led to death. A state-private initiative turned it into a fully functioning hospital. Thanks to our energy storage systems, all necessary loads can be handled, especially for operations like autoclave, vacuum pumps, electrosurgical cutters, anesthesia equipment, and surgical lights. For secure energy supply, BOS energy systems combine electricity from solar energy, the main power grid, and a diesel generator. This project shows that even in remote areas a very high medical level is possible.





In partnership with:

 **Katate Health Center**

30 kWh total battery capacity

100% Lithium

24 kWp of solar PV

30 kWh installed lithium capacity

15 kVA diesel genset for backup



3 Systems installed
Smart Energy Storage Systems
HS business 10



Zambia 2019

Home systems for remote and offgrid homes

Homes in Africa are either offgrid or face issues with reliability of grid power. These homes typically have power requirements ranging from 1-5kWhr/day. Typically residential homes need a solution which is modular, customisable to their needs, option to lease/PAYG, and lasts long. BOS has built all in one integrated solutions for home market, which are easy to install and maintain, modular to meet different energy demands, and PAYG to enable different business models depending on regions. Together with our partner Vitalite, we have HS Homes across Zambia, Malawi, Senegal and expanding to other regions. Our other partners have installed these solutions in Nigeria, Kenya, and other parts of Africa



In Zusammenarbeit mit:



5 kWh Nominal battery capacity

100% Lithium

3kWp Solar PV
5kWh Lithium



1 System installed per home
**Smart Energy Storage
Systems**
HS Home 5





Indonesien, 2020

ORANG-UTAN HAVEN

With 42 million tons, Indonesia is the world's largest producer of palm oil. To produce this amount of oil, tropical forests are cleared and the natural habitat of orangutans and many other mammals is destroyed. In order to save injured animals, the Sumatran Orangutan Conservation Program (SOCP) was established and the Orangutan Haven (OUH) sanctuary was founded. This consists of nine islands where a total of eight orangutans in need of care will find a new home. Together with our partner Alva Energi, we developed an off-grid solution to equip the 48-hectare nature reserve with our Smart Energy Storage Systems. During construction of the sites infrastructure, many experimental conservation methods are being trialled, our renewable solutions have helped to achieve the sustainable targets of the project.





In partnership with:



30 kWh Nominal Lithium capacity

100% Lithium

6 kWp Solar PV

30 kWh installed Lithium capacity



3 systems installed
**Smart Energy Storage
Systems**
HS Business 10

More details



 Kano, Nigeria, 2018

Sabon Gari Market

Sabon Gari market has been often in the headlines because of big fires, that destroyed large parts of the market. The root cause was the usage of many diesel generators. The Nigerian government and various companies have jointly come up with a solution. Equipped with the BOS Systems all 12,000 shops receive green, stable and affordable power for lamps, fans, television, computer and mobile phones. More markets have followed.



Watch the whole story here.





In partnership with:



1.6 MWh total battery capacity

100% Lithium

1.6 MWp of solar PV

1.6 MWh installed lithium capacity

Single-phase connection
with individual energy hubs
6-10 systems each.

 160 Systems installed
Smart Energy Storage Systems
HS business 10



CONTACT



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