

BESS® Battery Energy Storage System

Smart Storage System for Off-Grid and On-Grid Applications

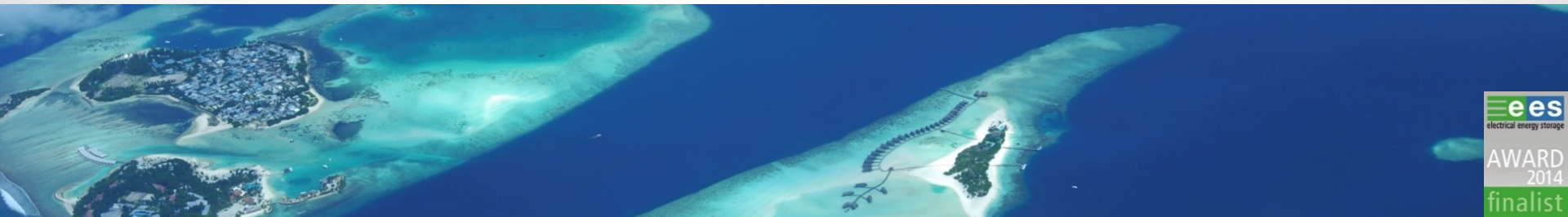
BESS® Technology enables the balance between fluctuating renewable energy production and energy consumption. The system is based on Lithium Ion cells with ceramic separator combined with renewables like photovoltaic etc.

Advantages:

- Off-grid and on-grid solutions
- Significant diesel fuel reduction and substitution of diesel gen sets
- Proven technically and profitable technology
- Balancing between renewable energy sources and load/consumption
- Reactive power adjustment
- Black-start possibility
- Grid stabilization
- Reduction of CO2 emissions

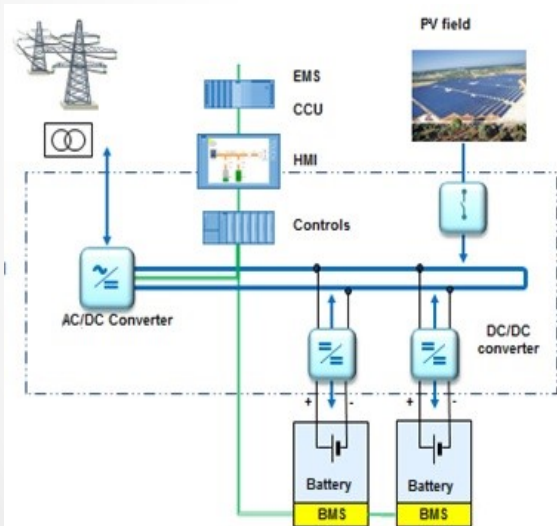
Applicable for:

Power Utilities, Grid Operators, Villages, Mining Industries, Hotels, Food Business etc.

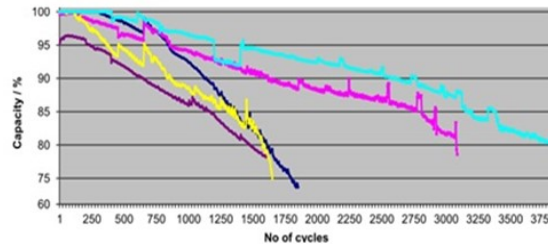


Main components of BESS®:

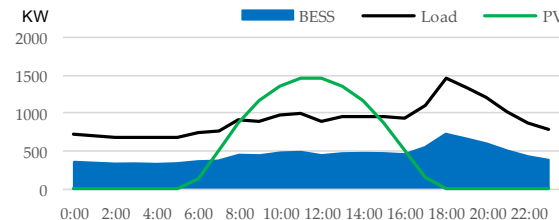
- Battery Management System with active balancing, monitoring each cell
- Li-ion NMC cell with ceramic separator (high safety), 10.000 cycles @ 80% DoD, 1C/1C, 23°C
- Power electronics (DC-DC Converters, Inverters)
- Energy management functionality considering different parameters/ conditions
- Photovoltaic or other alternative renewable energies
- Placed in 10" or 20" container, fully air conditioned and fire protected
- Modular and redundant architecture with individual sizing (Battery size 240kWh – unlimited)
- According to existing regulations e.g. DIN-VDE 0100-410 etc.



Schematic overview of BESS®



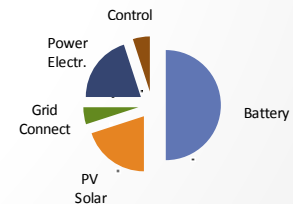
Cycles of different Li-ion batteries



Optimization of a load profile with BESS®



20" container with approx. 1MWh



CAPEX split