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ENERGY TO MANAGE

MONBAT ENERGY EMS

The All-in-One Battery System with integrated EMS

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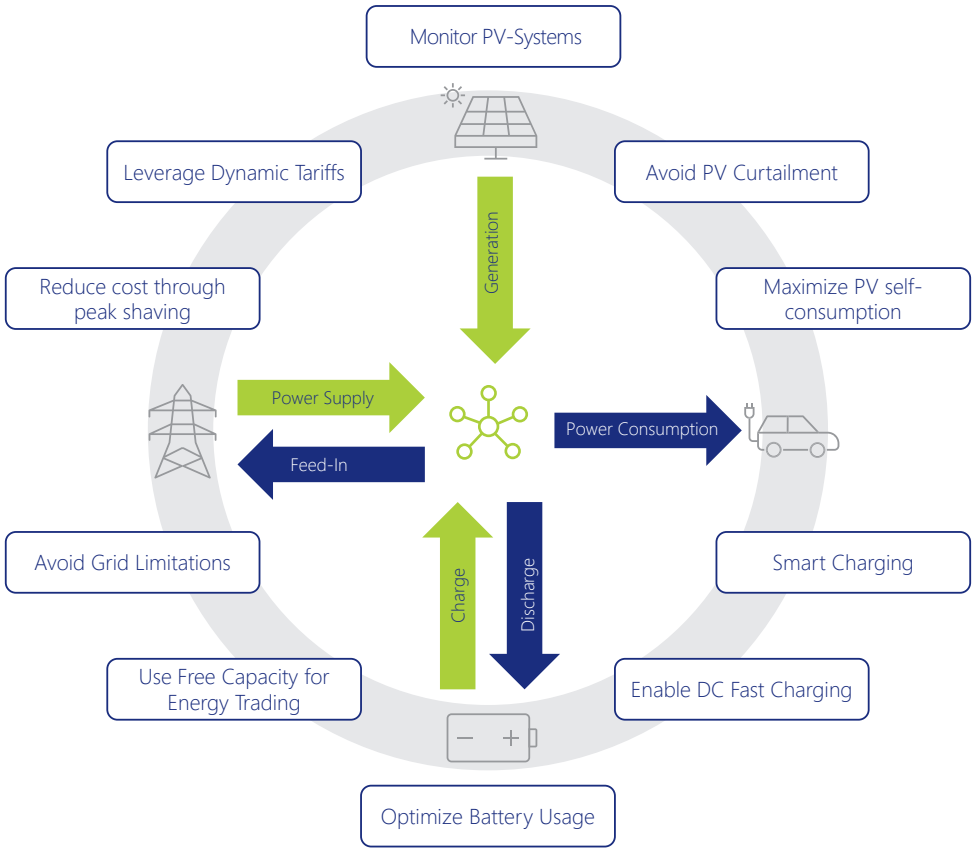
MONBAT ENERGY EMS – THE ENERGY MANAGEMENT SYSTEM

MONBAT ENERGY EMS is based on the open-source platform “OpenEMS”. The software is continuously developed within the global OpenEMS community together with universities, scientific institutes, and other energy management system manufacturers.
As a member of the OpenEMS Association, we actively contribute to the further development of OpenEMS.
The powerful hardware enables AI-based algorithms to forecast energy consumption and production, as well as create optimal schedules for battery storage systems.
MONBAT ENERGY EMS supports easy commissioning, individual configuration via apps and stable operation through monitoring and notification functions.
Integrated Charging Management for AC- and DC-Charging Parks

INTEGRATED CHARGING MANAGEMENT FOR AC- AND DC-CHARGING PARKS

Dynamic control of AC and DC charging stations from various manufacturers.
Reliable monitoring of the grid connection and sub-distribution (cluster).
Supports the uniform distribution of charging power and the prioritization of charging points.
Prepared for bidirectional charging.



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Standardized **Apps** can be flexibly combined into individual solutions.

App
Self-Consumption Optimization

The **Self-Consumption Optimization** App ensures that the usage of locally produced energy is maximized. To achieve this, the storage system is charged whenever generation exceeds consumption and discharged whenever generation is insufficient to supply the electrical consumers.

App
Grid-Supportive Charging

The **Grid-Supportive Battery Charging** App is an advanced version of self-consumption optimization that uses forecasts of local power generation and electricity consumption to intelligently manage battery charging throughout the day. This approach supports grid stability and minimizes power losses caused by PV curtailment.

App
Dynamic Tariff

The App **Dynamic Tariff** optimizes the discharging and charging of the storage system by using forecasting algorithms for PV power generation and consumption, as well as the price signal from your tariff provider.

App
Peak Shaving controls

The **Peak Shaving** App manages a battery storage system by discharging the battery during periods of high grid consumption, keeping the power at the grid connection point below a defined threshold.

App
Peak Load Time Slots

The **Peak Load Time** Slots App enables targeted reduction of grid consumption during periods of high grid load. Distribution network operators define these periods based on local grid conditions, considering factors such as the season, weekday, and grid level. The defined time slots are published online.”

Dynamic charging management is a feature of the MONBAT ENERGY EMS that optimally coordinates charging processes and battery usage.
It also functions without an integrated battery storage system, ensuring compliance with grid constraints and preventing costly load peaks.

App
AC Charging

The **AC Charging App** enables seamless integration of compatible charging stations from various manufacturers into the energy management system. It also supports all OCPP-based billing solutions

App
DC Charging

The **DC Charging App** enables fast direct current (DC) charging. When combined with a battery storage system, it allows charging capacities that significantly exceed the grid connection’s power limit.

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Dynamic charging management for charging parks is modular in design and can be individually configured via separate apps.

App
Charging Cluster Management

The **Charging Cluster** Management App groups AC and DC charging stations from different manufacturers into a single cluster. Limiters monitor the grid connection point and the power supply to the charging infrastructure, reporting available resources. The cluster then distributes these resources as equitably as possible among the connected electric vehicles.

App
Charging Load Management

The App **Charging Management** Limiter defines the limits at the grid connection point and/or the supply line to the charging infrastructure for a cluster. The following parameters are configured:

- Fuse limit in amperes (A)
- Power limit in watts (W)

App
14a EnWG

The **§14a EnWG** App implements the Federal Network Agency's requirements for grid-oriented control of controllable consumption devices. The energy management system receives signals from an FNN control box and adjusts the device power level when necessary.

For applications that rely on forecasts, all generators must be metered.
Measuring consumers as well allows full visualization of power flows in the online monitor.

App
PV-Inverters

The **PV Inverters App** communicates directly with a wide range of inverters and integrates them into the system

App
Energy meters

The **Generation and Consumption Meter** App enables the integration of additional AC generation systems and consumers into the energy management system using separate meters.

App
Dynamic PV Curtailment

The **Dynamic PV Curtailment** App limits the photovoltaic system's feed-in power at the grid connection point. The following variants are available:
FRE – The system receives signals from a radio ripple control receiver and limits the feed-in power to 60%, 30%, or 0.
MAX – Limits the feed-in power to a configurable value.

Demo: monbatenergy.oems.energy/ems/demo

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