



# OpenEMS

## Open Energy Management System.

Energy management combines

- buy-from-grid/sell-to-grid energy
- electric energy generators like PV and Wind
- electric energy storage systems
- controllable and non-controllable loads
- signals by control stations and cloud services
- ...

It uses this data according to the selected application to create a schedule for

- self-consumption optimization
- peak-shaving
- grid-stabilization  
(frequency, reactive power, phase rectification)
- intelligent integration of electric loads  
(electric vehicle, heat-pump, electric heater)
- intelligent integration of electric generators  
(block heating station, diesel generator)
- utilization of variable energy costs
- ...

The challenge is to find the optimal algorithm for each application and especially the sensitive combination of applications.

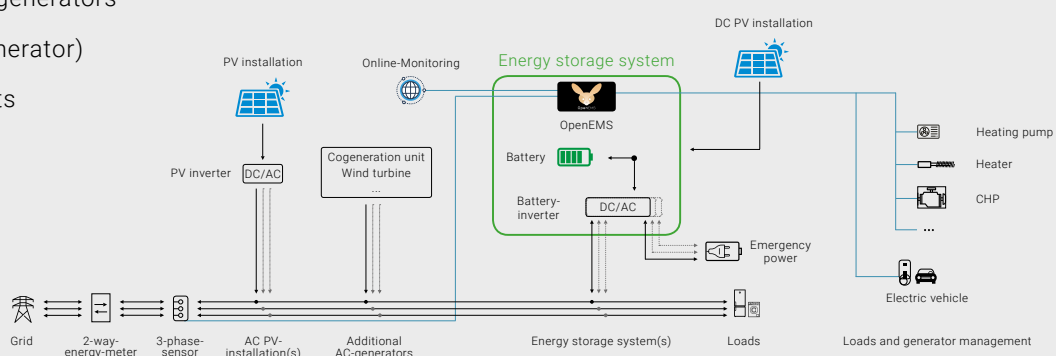
OpenEMS is a modular platform for energy management applications.

It complies with the requirements for control, monitoring and integration of electric energy storage systems, loads and generators together with complementary interfaces and services.

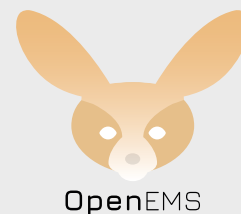
OpenEMS is free software.

The full source code is available on

[www.openems.io](http://www.openems.io)



*„In our opinion the 100 % energy revolution requires an open and free energy management system.“*



## Production ready

- as monitoring and for PV self-consumption optimization
- in sector coupling with electric vehicle, heat-pump and electric heater
- utilizing variable energy costs
- for grid-stabilization in combination with a transformer
- in off-grid application with emergency power load management
- with various kinds of hardware (FENECON/BYD, SMA, KACO, Energy Depot, KOSTAL, REFU, SOCOMEC, Janitza, KEBA, Kipp & Zonen,...)

## On strong shoulders



**BloGPV**

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  - Federal Ministry for Economic Affairs and Energy
- Participating parties
- Universities Passau, Thessaloniki, Sevilla, Delft, Lancaster and Berlin
  - German Research Center for Artificial Intelligence
  - ...

## Integrated Software

Full Internet-of-Things (IoT) software stack

- Edge – decentral energy management
- Backend – cloud-service for monitoring, aggregation and control
- UI – real-time user interface in browser and on the smartphone



## Become a founding member

OpenEMS is going to be given to a vendor-neutral organising institution. Therefore a non-profit organisation is going to be founded. We are welcoming founding members.

More information on [www.openems.io](http://www.openems.io) and [info@openems.io](mailto:info@openems.io).

## Ready for immediate use

[www.openems.io](http://www.openems.io) → „Getting Started“

Follow the „Getting Started“ guide on [www.openems.io](http://www.openems.io).

In a couple of minutes you can simulate a complete energy storage system on your PC.