

Technology: Home battery systems

What?

A home battery system is a storage battery especially developed for use in residential buildings in order to increase the amount of self-supply by renewable energy generation, mostly PV panels. A storage battery is a type of electrical battery that can be charged, discharged into a load, and recharged many times. It is composed of one or more electrochemical cells and stores energy through a reversible electrochemical reaction. Rechargeable batteries are produced in many different shapes and sizes. Several different combinations of electrode materials and electrolytes are used, including lead-acid and lithium ion (Li-ion) as most common ones at this scale.

There are several products available on the market, such as:

- SonnenBatterie: 1,5 - 3,3 kW power and 2 kWh – 16 kWh energy storage capacity [1]
- Tesla Powerwall: 3,3kW power and 6,4 kWh energy storage capacity [2]
- Orison: 1.8 kW continuous, 3.5 kW peak power and 2,2 kWh energy storage capacity [3]



Sonnen (left), Tesla Powerwall (middle) and Orison tower (right)

Why?

In combination with renewable energy generation such as photovoltaic panels (or a small scale wind turbine), batteries will enable citizens to supply themselves with clean energy, maximise the amount of self-consumption, making them independent and protecting them from energy price peaks.

Where?

Home battery systems are best suited for residential homes in which PV panels are installed, in order to maximise the self-consumption of solar power generation.

Manufacturers:

- Sonnen
- Orison
- Tesla motors

Cost

The manufacturers claim the following prices: SonnenBatterie (3600€), Tesla Powerwall (3500€) and Orison (1600€).

Want to learn more?

[1] <https://microsite.sonnenbatterie.de/en/sonnenbatterie>

[2] www.teslamotors.com

[3] <http://orison.energy/>