



## Home energy management

---

System approach with extension potential



# Home energy management

---

## Business potential for your company

### Introduction

The energy transition in Germany and the general increase in renewable energy in Europe will lead to significant changes in the interaction of concepts for energy creation, distribution and consumption. Established market players will have to reinvent their role, and new business opportunities and models will evolve over time.

Sharp Europe has set the target to establish a platform with which the distinguished interests of participating market players can gradually be merged in the long run. In a first step, a system will be introduced which allows

homeowners to produce their own energy and store it in an electric battery, allowing a customized user setting to plan ahead for running specific loads by switching them on and off.

The initial layout of the system will be gradually expanded. Initially, it is aimed at users who want to increase their level of self-consumption. End users can expand the system through upgrades and further hardware extensions. Additional apps and technical components can be sourced through an "energy market" which is part of the platform.





Sharp Europe has selected established partners to create such a concept within the approach of "Sharp Europe Selection"\*, whose components are used in the initial design:

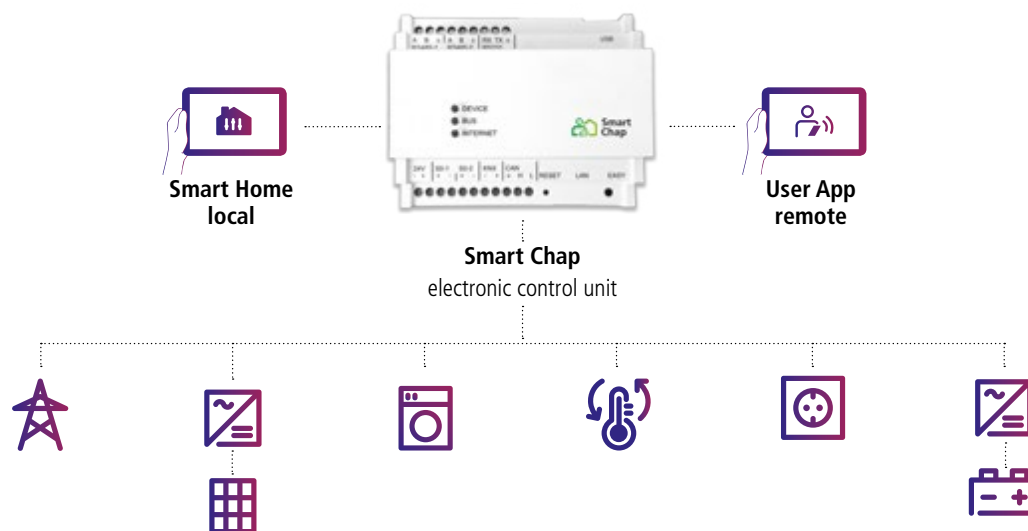
- ◆ battery: BMZ, Aschaffenburg, ESS 3.0, Li ION, 5Wh net
- ◆ battery inverter: Victron, Almere
- ◆ energy manager: kiwigrid , Dresden
- ◆ energy meter: Carlo Gavazzi, Italy

For the future it is planned to link additional components and apps to the platform, which will be able to interact on the platform in a meaningful way. Sharp Europe is working with the Sharp European Laboratories (SLE) in Oxford on the development of a heat pump concept, which will be able to cover the heating in a building besides the electrical demand. In addition, the SLE is working on aggregation models for storage devices, which should generate interest amongst utility companies in the platform.

### The system concept

The layout of the initial system aims at homeowners with suitable conditions to create their own energy using a PV system, to store it electrically in a battery for evening use and to manage certain loads intelligently via smart plugs. The system prefers a Pico inverter from Kostal, but can also be retrofitted with any other AC inverter where the generated PV energy is measured with a meter. The energy manager controls the system as a central unit and coordinates all components. Via a web portal, the user can monitor the actual energy generation of the PV system, the state of charge of the battery, the current energy flows as well as the historical data. During the initial setup, the installer can pre-set certain loads via smart plugs, adjusting settings on the energy manager locally.

\* Sharp Selection: Sharp Electronics Europe (Ltd) widens the portfolio with products from qualified partners.



### The energy manager ("Smart Chap")

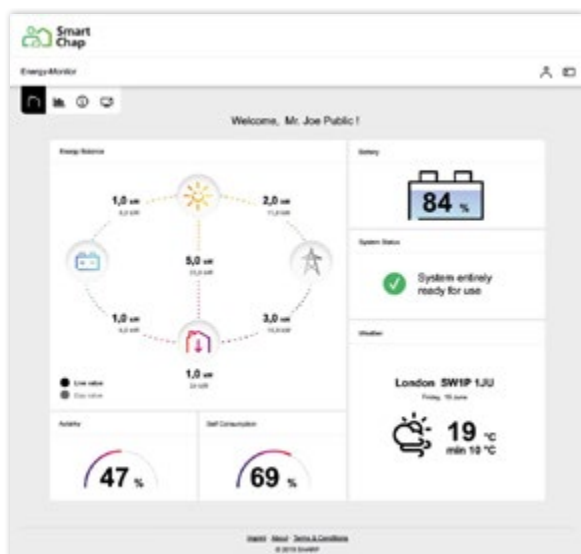
The energy manager ("Smart Chap") is a local electronic control unit which is installed in the main electrical switchboard in your home, mounted on a rail. The device can operate using various communication standards, such as RS485, CAN, WIFI, LAN, S0, and is linked to all relevant devices. It can be expanded by additional communication modules on an EEBUS, such as EnOcean. The "Smart Chap" will be initially set up by the installer for the start of operation. By doing so, relevant parameters will be entered, such as PV system

data, dynamic inverter control, charging periods or presets for external loads. The "Smart Chap" can be accessed only locally like an internet router; the data which it will send to the web user app are SSL encrypted.

### The installer as a platform partner

If you are actively installing PV systems and show interest in the Sharp system concept, we have an installer service portal under preparation which allows installers to oversee their installations. The status of any installation can be easily recognized and hardware problems can be checked. In case more details are required for initial remote diagnostics, additional parameters can be retrieved from the energy manager. Together with our service partners, Sharp is realizing a multilayer service concept involving the installers. In this context and in combination with the planned expansion of the platform with more hardware elements like lighting, Smart Home and heating, together with the relevant software and app packages, there will be new possibilities for further business models for our customers.

Sharp Europe offers to interested market participants like utilities and installers to speak about an OEM branding of the portal. The current system approach can be adopted, modified or expanded to suit the required business needs.



Empower yourself

[www.sharp.eu](http://www.sharp.eu)

**SHARP**

## Contact us today.

We will provide you with information about the business opportunities for your company.

Local responsibility: **Benelux** SolarInfo.seb@sharp.eu, **France** SolarInfo.fr@sharp.eu, **Germany** SolarInfo.de@sharp.eu, **Poland** energy-info.pl@sharp.eu, **Spain & Portugal** SolarInfo.es@sharp.eu, **United Kingdom** SolarInfo.uk@sharp.eu, **Other countries** SolarInfo.Europe@sharp.eu

### Contact Sharp

SHARP ENERGY SOLUTIONS EUROPE  
A DIVISION OF  
SHARP ELECTRONICS  
(EUROPE) LTD.  
SONNINSTR. 3  
20097 HAMBURG  
GERMANY  
T: +49 (0) 40 / 2376 - 2436  
F: +49 (0) 40 / 2376 - 2193