

## HOME SOLAR SYSTEMS FOR SELF CONSUMPTION

April 2018

### GRID-TIE SOLAR PV SYSTEM FOR SELF CONSUMPTION

The aim of any residential PV System is to reduce your energy bill and utilize all the power produced from the sun. However residential loads usually peak in the early morning and evening during peak occupancy periods.

Unless the systems are designed to nett feed the grid (with council approval) there will be periods when the PV Power produced will be greater than the energy consumed.

The Home Manager provides a unique reverse power blocking mechanism. To optimize the power produced unless there are loads present this power will need to be stored. The development of new Inverter Power Control Technology combined with the latest offering of Lithium Battery Systems will allow for Residential users to store the power they don't use in the day and discharge it at night.

Lithium Batteries allow for multiple rapid charge and discharge cycles. With the help of power monitoring software, Energy Efficiency and Independence can be provided for.

The system has a **web-based monitoring capacity** that can be managed and viewed online through **Sunny Portal**

We offer **SMA Systems with BYD Lithium Wall Mount and Rack Mount Batteries.**

## 3KW SOLAR WITH LITHIUM BATTERY FOR SELF CONSUMPTION

- 1 x SMA Sunny Island 6KW Inverter
- 1 x BYD 5.12KWH Lithium Battery
- 1 x Cable, Fuses, Parts
- 1 x Electrical Components and Battery Frame
- 1 x Labour and Installation
- 1 x Delivery



## 5KW SOLAR WITH LITHIUM BATTERY FOR SELF CONSUMPTION

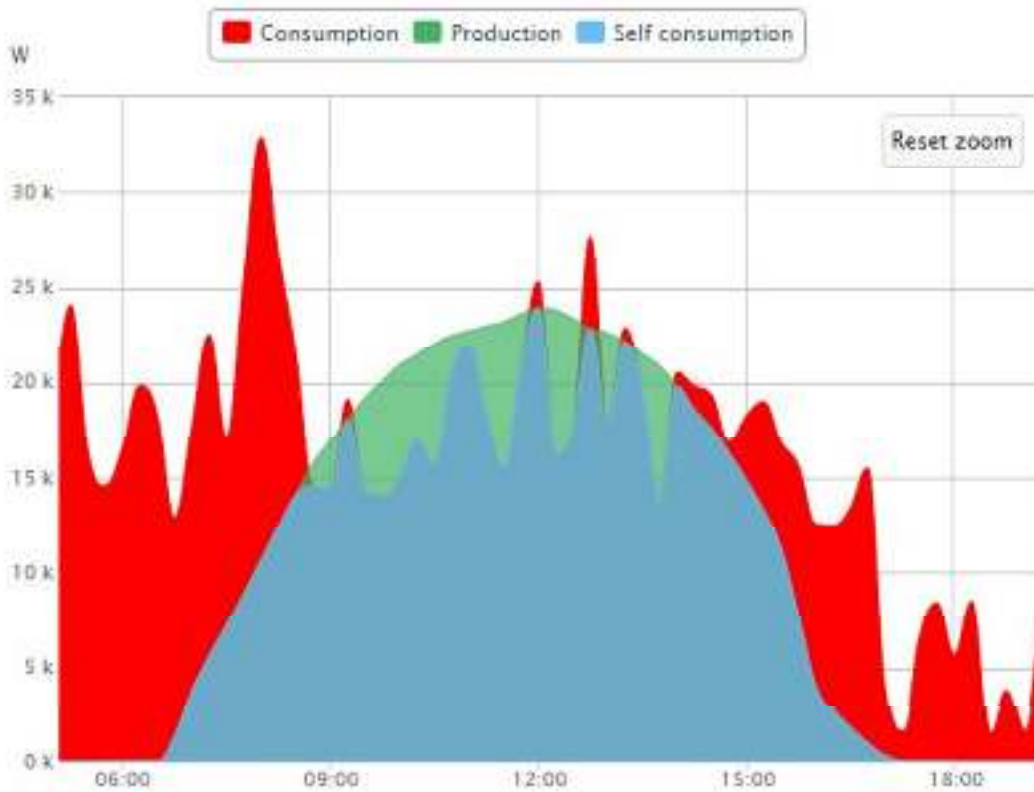
- 1 x SMA Sunny Island 6KW Inverter
- 1 x BYD 5.12KWH Lithium Battery
- 1 x Cable, Fuses, Parts
- 1 x Electrical Components and Battery Frame
- 1 x Labour and Installation
- 1 x Delivery



## WHAT SUNNY HOME MANAGER HAS TO OFFER

- Clear visualization of key energy flows in the household
- Energy balance diagrams which show PV generation, charging/discharging of the storage battery
- Energy mix (electricity from photovoltaics, battery, utility grid) as used by individual household appliances
- Historic energy consumption charts with various view selections
- Basic PV system status monitoring to confirm correct system performance

# SELF CONSUMPTION GRAPHS



Without increased self-consumption

## Self-sufficiency quota

35.4%

## Self-consumption quota

57.1%

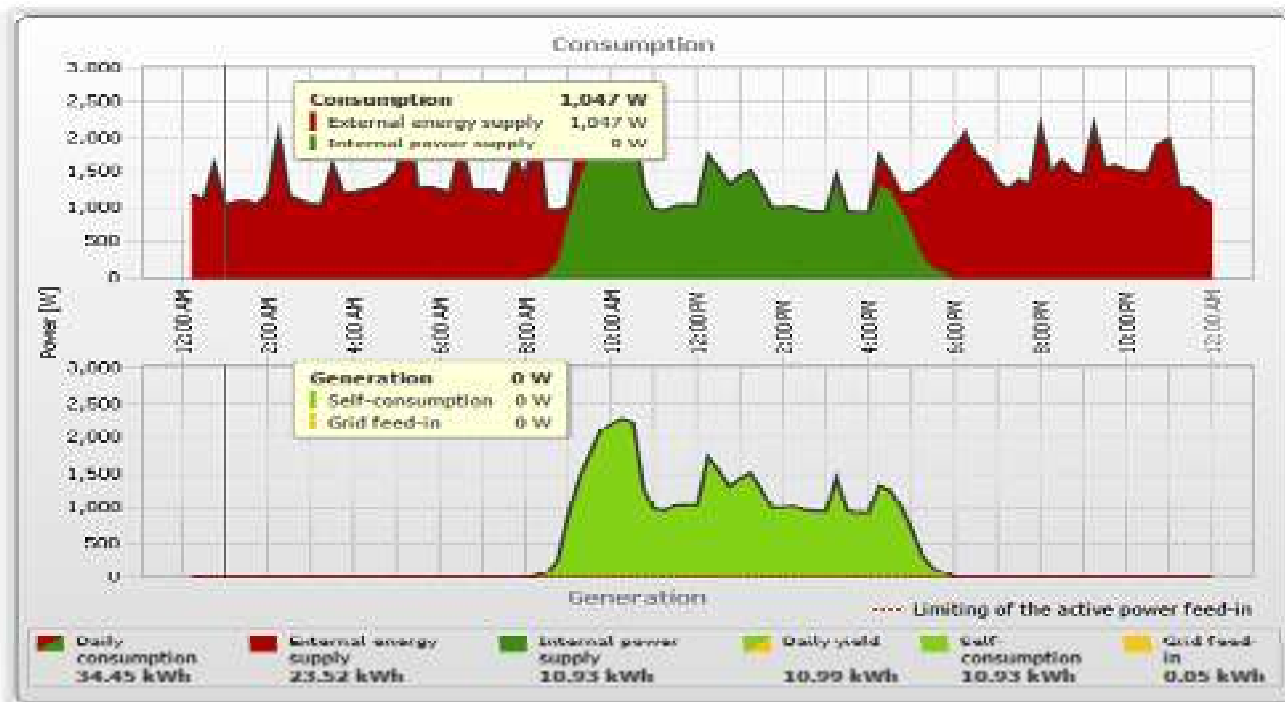
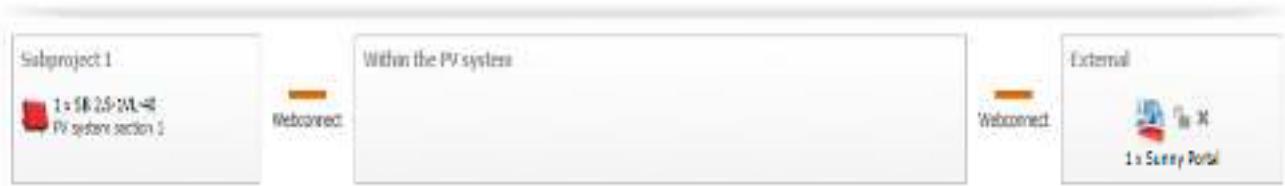
## Distribution of PV energy



## Details

Energy consumption per year	9,000 kWh
Energy yield of the PV system	5,572 kWh
Grid feed-in	2,387 kWh
Purchased electricity	5,816 kWh
Self-consumption	3,184 kWh
Self-consumption quota (in % of PV energy)	57.1%
Self-sufficiency quota (energy consumption in %)	35.4%

# WEB BASED MONITORING



## WALL MOUNTED LITHIUM BATTERY BACK-UP

### BYD B-Box BATTERY STORAGE

#### B-Box Compact



Battery type	LiFePO <sub>4</sub>
Battery module	B-Plus 2.5 (2.56 kWh) 1 module
Usable Energy <sup>[1]</sup> [kWh]	2.56
Max Output Power [kW]	2.56
Peak Output Power [kW]	5.12, 30s
Round-Trip Efficiency	≥95.3% (Under test condition [1])
Nominal Voltage [V]	51.2
Operating Voltage Range [V]	43.2-56.4
Communication	CAN / RS485
Dimension [W×H×D,mm]	483×130×478
Net Weight of B-Plus [kg]	34
Net Weight [kg]	38
Enclosure Protection Rating	IP20
Warranty	10 years
Ambient Temperature Range <sup>[2]</sup> [°C]	-10 - +50
Certification & Safety Standard	TUV / CE / RCM / UN38.3
Scalability	Max. 2 B-Plus 2.5 in parallel
Compatible Inverters	SMA / GOODWE / SOLAX / Victron, more brands to be announced

[1] Test conditions: 100% DOD, 0.5C charge & discharge @+25°C

[2] -10°C-10°C will be derating

## SUNNY ISLAND INVERTER

SUNNY ISLAND 6.0H / 8.0H  
FOR OFF-GRID AND ON-GRID APPLICATIONS



### SUNNY ISLAND 6.0H / 8.0H

The all-rounder for on-grid and off-grid

The Sunny Island 6.0H / 8.0H supports a wide range of on-grid and off-grid applications with compelling product features – from operation in remote off-grid areas to home energy management. Users can benefit from more than 25 years of SMA experience in the field of battery inverters. The high protection class, wide temperature range and exceptional overload capacity provide the kind of security needed for off-grid use. Intelligent load and energy management keeps the system running, even in critical situations. And being a core element in the SMA Flexible Storage System for new and existing PV systems, the Sunny Island 6.0H / 8.0H stores generated solar energy and works with the Sunny Home Manager to intelligently manage home energy consumption. The Quick Configuration Guide and intuitive user interface help ensure an easy, convenient installation in any application scenario. That makes the Sunny Island 6.0H / 8.0H the ultimate all-purpose product solution – for on-grid and off-grid.