SUNNY BOY STORAGE

Australian Information Release

SUNNY BOY STORAGE

Basic Product Information

- Designed for High Voltage batteries (e.g. Tesla Powerwall).

- AC Coupled solution, suitable for:
    1. Retrofit (SMA or 3rd party PV system), *including the 1.5 million existing Australian residential PV systems*
    2. New installation (SMA or 3rd party PV system)
    3. Storage without PV plant

- Connects easily to the SMA Energy Management System.

- Sunny Boy Storage allows customers to choose their battery:
    o Brand
    o Size/Capacity
    o Technology (e.g. Li-ion, etc)

- Australia identified by SMA as initial market for product.

- First units due off the Production Line March 2016, arriving in Australia in Q2.

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SUNNY BOY STORAGE

Cost-effective, flexible and simple

SMA

Technical Data

Battery integration	AC-Coupled
Inverter Type	Battery inverter only
Topology	Transformerless
Grid Connection	Single Phase
Power (ch./disch.)	2.5 kW
DC-Voltage (Batt.)	120 V – 500 V$_{DC}$
DC-Current/Max	10 A / 18 A
Efficiency (max.)	97 % (Batt. $\rightarrow$ Grid)
Weight (approx)	9kg
Dimensions (W/H/D)	˜460 x 360 x 120mm

Advantages:

> **Flexibility due to AC-coupling**

>> New installations, Retrofit, Battery only

>> Flexible PV-design

>> Free choice from several Batteries (e.g. TESLA, etc.)

> **Cost-effective and efficient**

>> Based on SMA's proven String-technology

>> Best-price battery-inverter

>> Efficiency up to 97%

> **Quick and easy to install**

>> Integrated Wireless and Web Server, for commissioning via Smart Phone

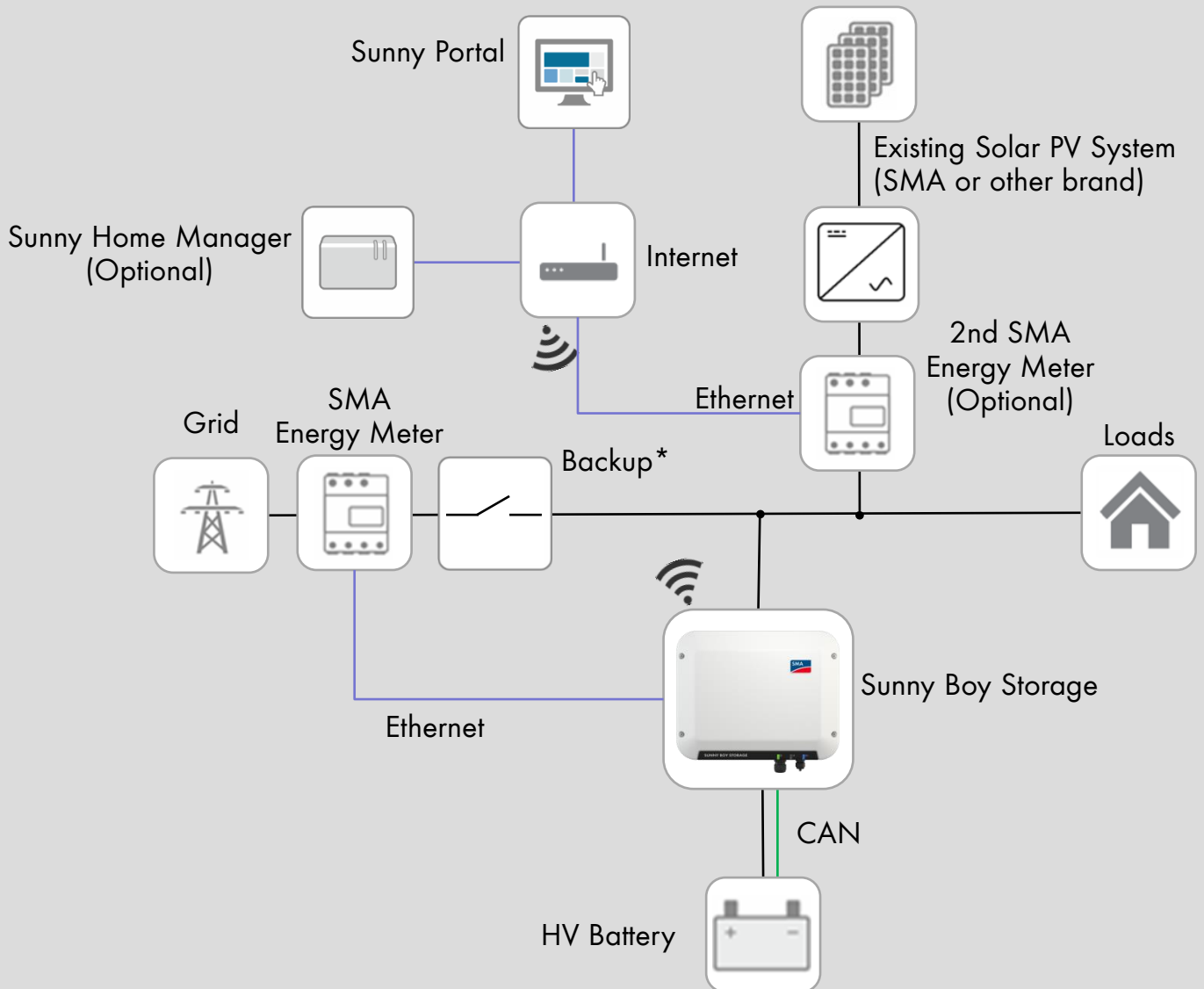>> Direct integration into Sunny Portal/Sunny Places via Webconnect (WiFi or Ethernet)

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SUNNY BOY STORAGE

Basic Single Line Diagram (preliminary)

DISTRIBUTION BOARD

UTILITY GRID

L
N
PE

House Main Switch

SMA Energy Meter

L
N
PE

Inverter AC isolator

Internet

DC+ cable
DC– cable
Line conductor
Neutral conductor
Grounding conductor
Data cable

CAN Bus Communication Link

BATTERY FUSE (double pole)

BATTERY

TESLA
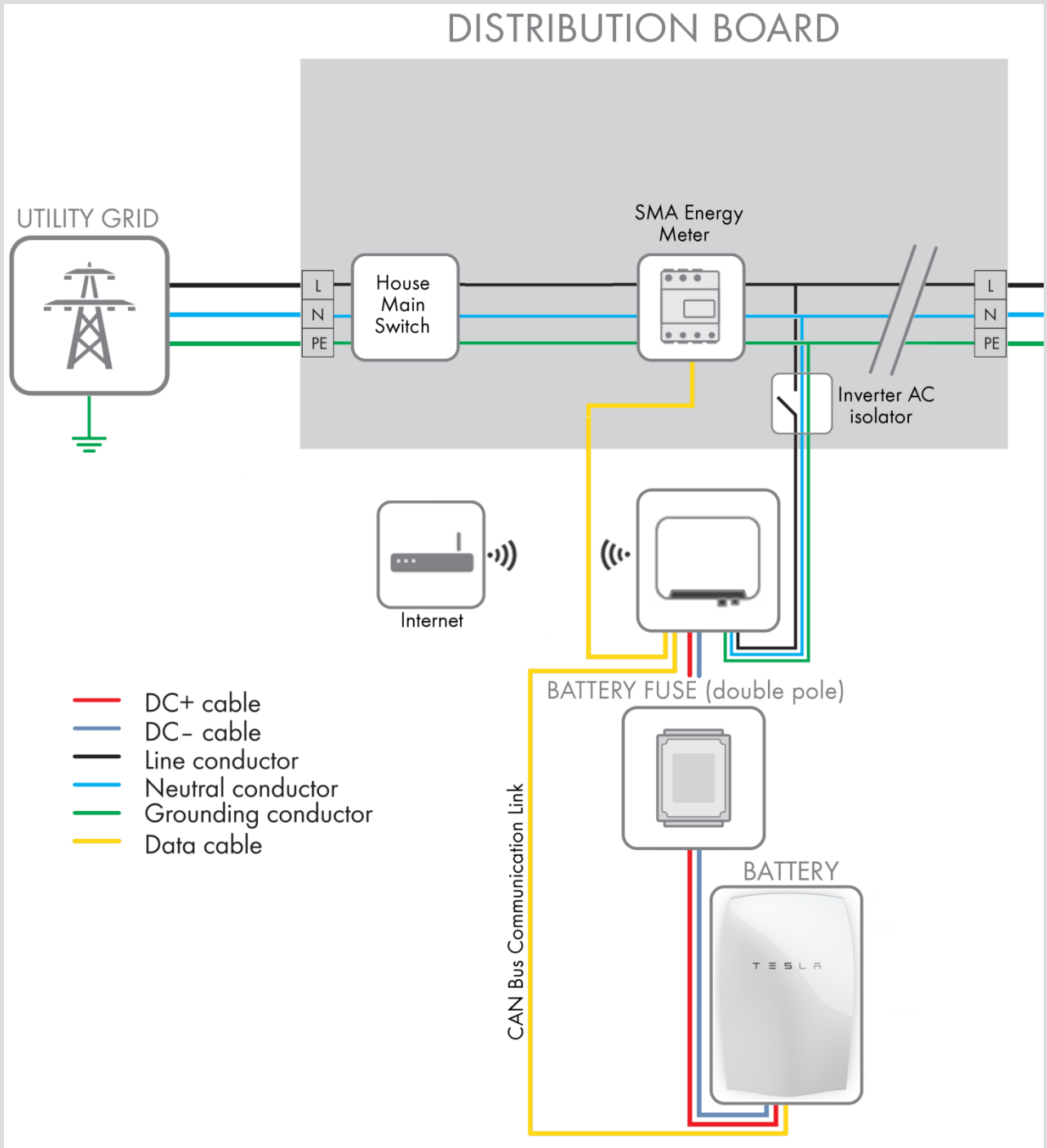
SUNNY BOY STORAGE

Basic Generic System

Sunny Portal

Existing Solar PV System
(SMA or other brand)

Sunny Home Manager
(Optional)

Internet

2nd SMA
Energy Meter
(Optional)

Grid

SMA
Energy Meter

Ethernet

Backup*

Loads

Sunny Boy Storage

Ethernet

CAN

HV Battery

* Backup as retrofit kit (Q4/2016)

SUNNY BOY STORAGE

Basic SMA System

System components

> SMA 1ph or 3ph. PV-Inv. incl. Webconnect
> SMA Energy Meter
> Sunny Boy Storage

Functions

> Control to the grid connection Point via SMA Energy Meter
> Export limitation between 0-100% of rated power
> Visualization Sunny Portal
> Modbus third-party interface
> CAN-BUS battery interface

Sunny Portal

Internet

SMA Energy Meter

Sunny Boy

Grid

Loads

Sunny Boy Storage

Ethernet

CAN

HV Battery
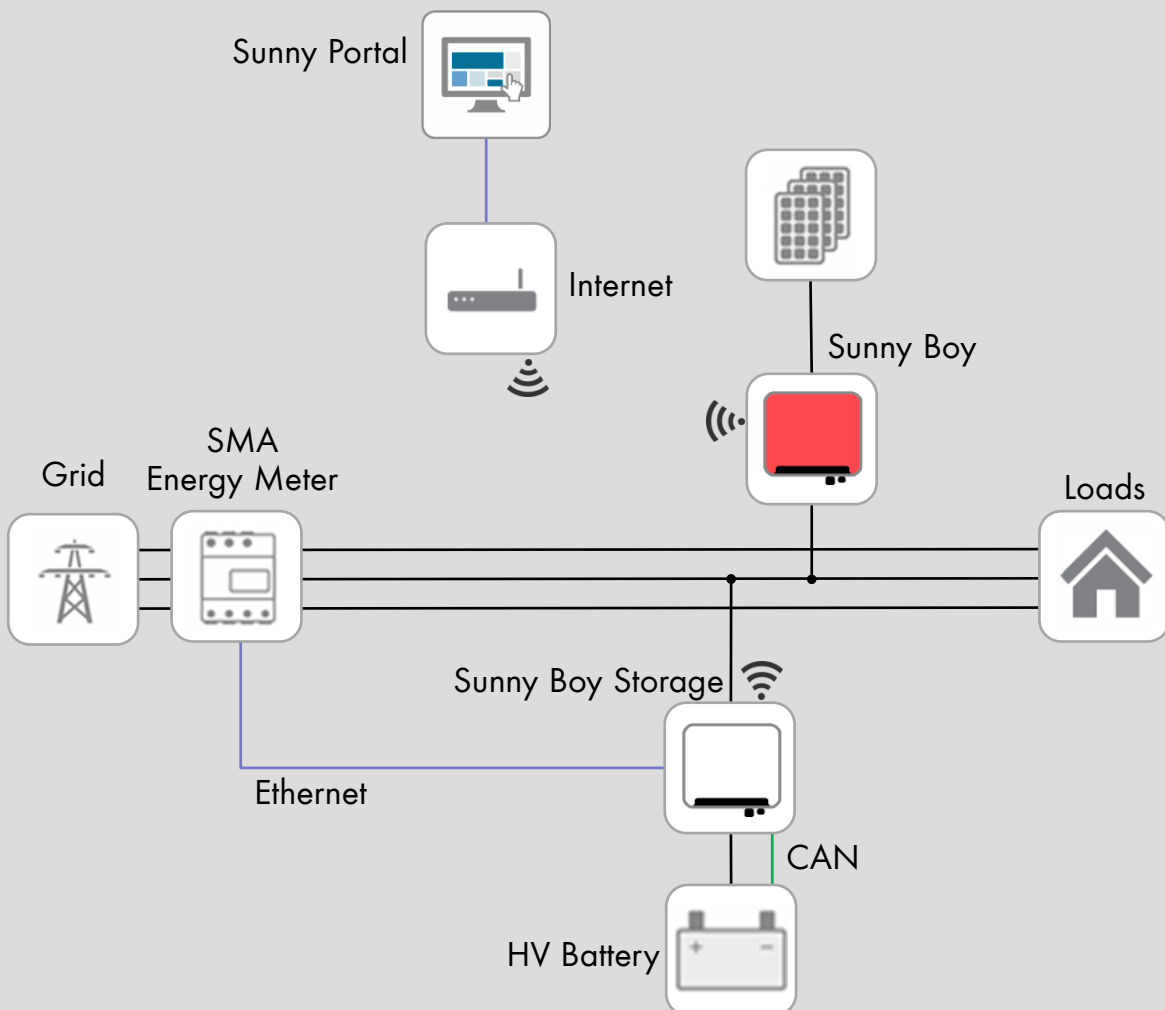
SUNNY BOY STORAGE

Full Function SMA System

SMA

System components

> SMA 1ph or 3ph. PV-Inv. incl. Webconnect
> SMA Energy Meter
> Sunny Boy Storage
> Sunny Home Manager (FM 1.30)

Functions

> Control to the grid connection Point via SMA Energy Meter
> Export limitation between 0-100% of rated power
> Visualization Sunny Portal
> Modbus third-party interface
> CAN-BUS battery interface
> With Sunny Home Manager
>> Charge battery from grid time-window
>> Weather forecast based charging

Sunny Portal

Sunny Home Manager

Internet

Sunny Tripower

Grid

SMA Energy Meter

Ethernet

Loads

Sunny Boy Storage

Ethernet

CAN
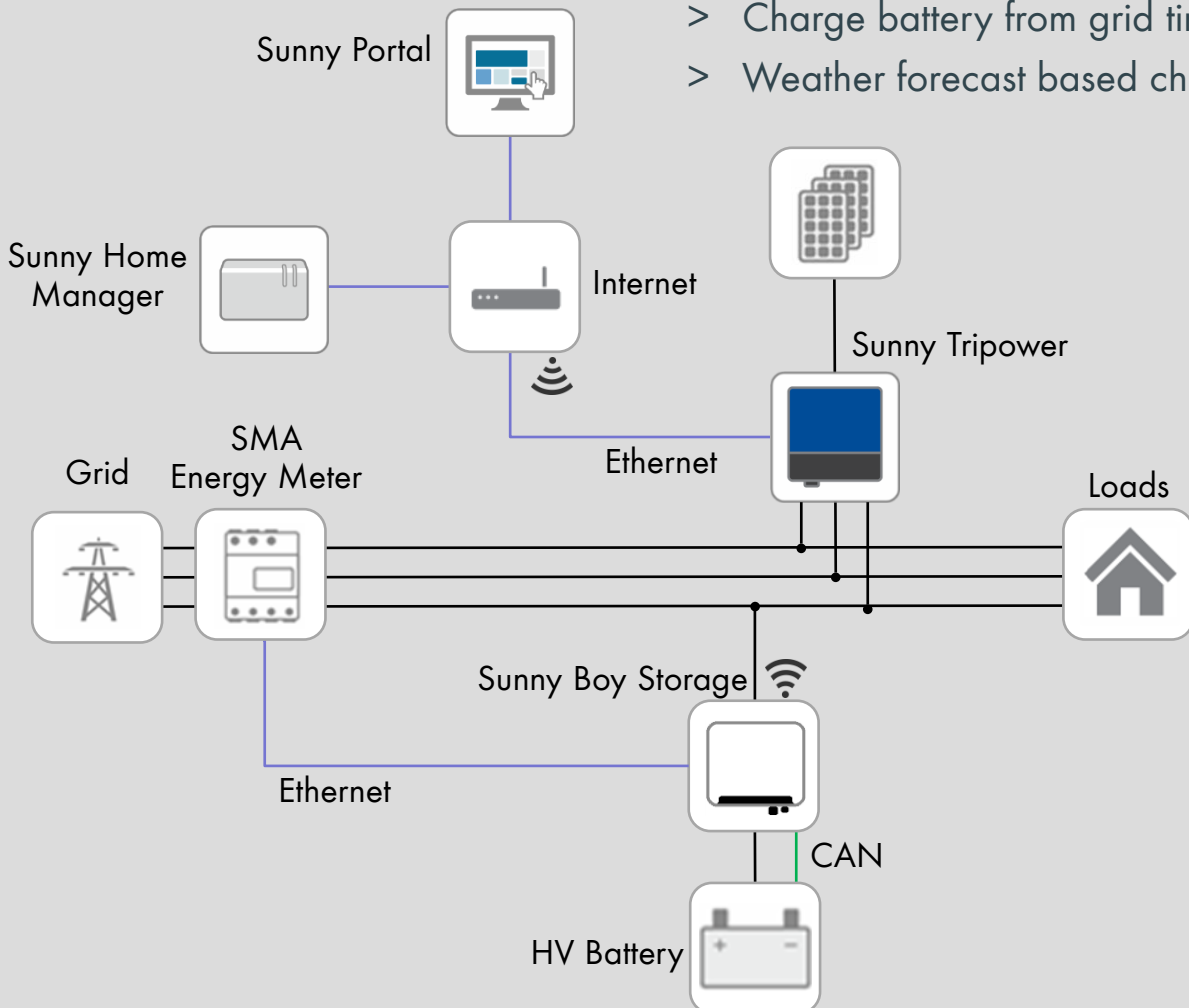
HV Battery

SUNNY BOY STORAGE

Full Function SMA System with Battery Backup
(* via retrofit kit, exp. Q4 2016)

System components

> SMA 1ph PV-Inv. incl. Webconnect
> SMA Energy Meter
> Sunny Boy Storage
> Sunny Home Manager (FM 1.30)

Functions

> Control to the grid connection Point via SMA Energy Meter
> Export limitation between 0-100% of rated power
> Visualization Sunny Portal
> Modbus third-party interface
> CAN-BUS battery interface
> With Sunny Home Manager
>> Charge battery from grid time-window
>> Weather forecast based charging
> Battery Backup

Sunny Portal

Sunny Home Manager

Router

Sunny Boy

SMA Energy Meter

Grid

Backup*

Loads

Sunny Boy Storage

Ethernet

CAN

HV Battery
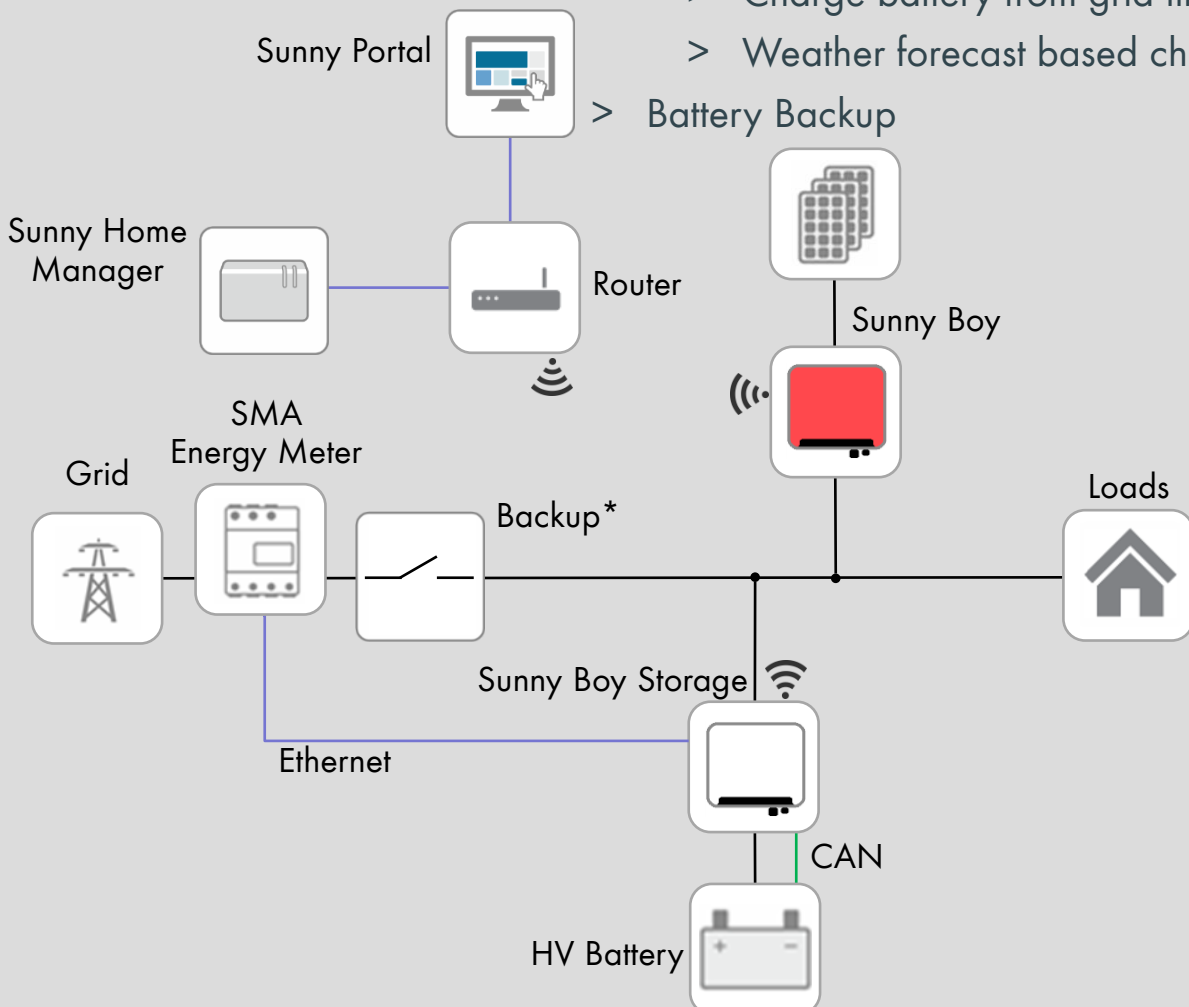
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Monitoring Visualisation in Sunny Portal Information
(with Sunny Boy Storage & SMA Energy Meter)

	Retrofit		New Installation		Storage without PV
PV System	SMA	3rd Party	SMA	3rd Party	N/A
Battery Charge / Grid Export	✅	✅	✅	✅	✅
Battery Discharge / Grid Import	✅	✅	✅	✅	✅
Battery State of Charge	✅	✅	✅	✅	✅
PV System Generation	✅ *	❌ !	✅	❌ !	**N/A**
Total PV + Battery Self-Consumption	✅ *	❌ !	✅	❌ !	**Battery Only**
PV System Errors & Events	✅ *	❌ !	✅	❌ !	**N/A**
Battery System Errors & Events	✅	✅	✅	✅	✅

* - For SMA inverters with Webconnect capability

! - Visualisation of 3rd party inverter possible only with second SMA Energy Meter and Sunny Home Manager

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