The StorEdge™ Solution

Enabling Energy Independence

The StorEdge Solution

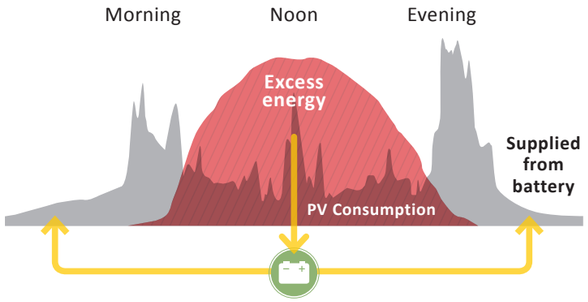
Combining SolarEdge's breakthrough PV inverter technology with leading battery storage systems, the StorEdge solution helps homeowners reduce their electricity bills while maximizing energy independence from the grid.

StorEdge is compatible with Tesla's Powerwall Home Battery, and is based on a single SolarEdge DC optimized inverter that manages and monitors PV production, consumption and storage.

Two applications are available

Optimizing Self-Consumption

The StorEdge solution can be used to increase energy independence for homeowners, by utilizing a battery to store power and supply power as needed. To optimize self-consumption, the battery is automatically charged and discharged to meet consumption needs and reduce the amount of power purchased from the grid.



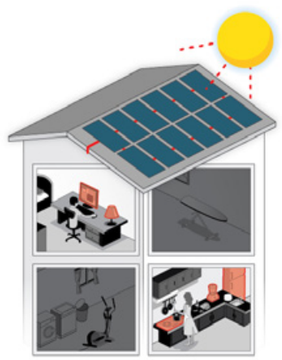
Using StorEdge, excess energy produced during peak sunlight hours when consumption is low is stored to a battery and used later. Energy isn't wasted!

Optimizing Self-Consumption + Backup Power

In addition to optimizing self-consumption, StorEdge can also automatically provide backup power to pre-selected loads when the household suffers from grid interruptions. A combination of PV and battery is used to power important loads such as the refrigerator, TV, lights and AC outlets, day or night.

Providing backup power day or night

Charge battery from the PV system



Daytime: *Important loads are powered first by the PV system and then by the battery. The battery can be charged from the PV as needed*

Nighttime: *Important loads are powered by the battery*

Maximizing the Homeowner's Solar Investment

The StorEdge system is full of benefits for the installer and homeowner alike.

More Energy

> Power optimizers increase rooftop energy harvest
> PV power is stored directly in the battery
> DC coupled battery solution allows high system efficiency
> No additional conversions from AC to DC and back to AC

Simple Design & Installation

> A single inverter for PV, storage and backup power
> Outdoor installation allows flexibility in battery location
> No special wires are required > utilizes the same PV cables

Full Visibility & Easy Maintenance

> Monitor the battery status, PV production, and self-consumption data
> Smarter energy consumption to reduce electricity bills
> Monitor battery energy levels and remaining hours of backup power
> Remote access to inverter/battery software

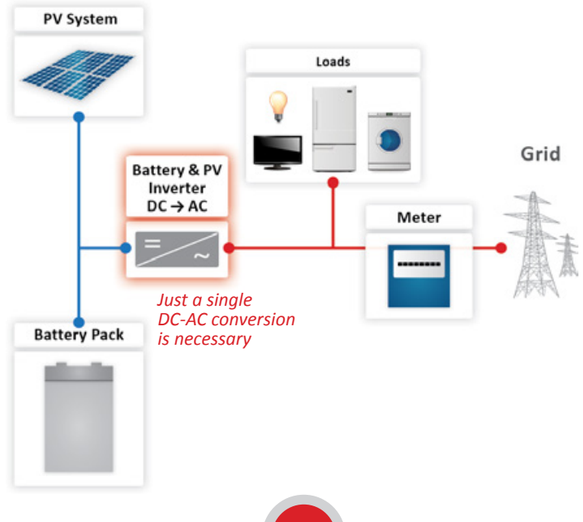
Enhanced Safety

SafeDC

> PV array and battery voltage reduced to a safe voltage automatically upon AC shut down when not in backup mode
> Complies with VDE 2100-712

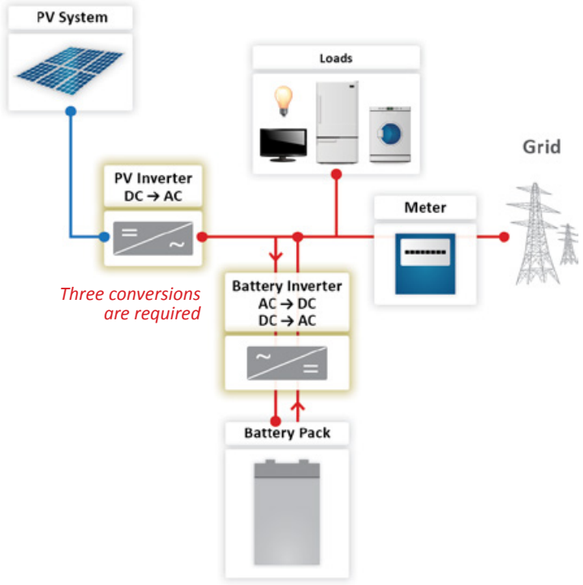
PV System with DC-Coupled Storage

solaredge



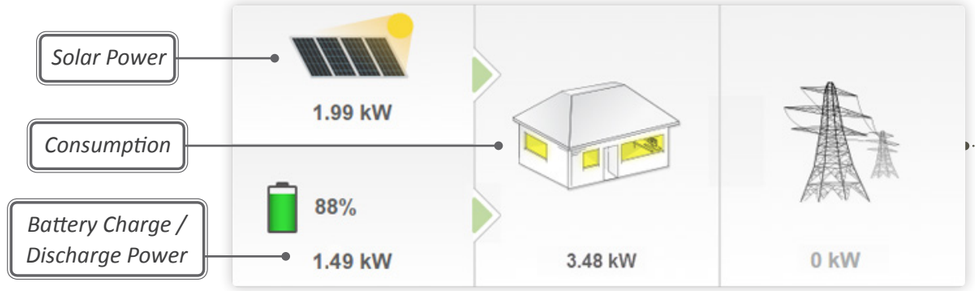
Vs.

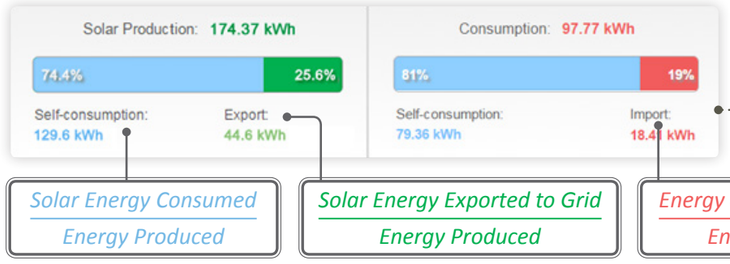
PV System with AC-Coupled Storage



SolarEdge Monitoring Platform Dashboard

The cloud-based monitoring platform provides insight into household PV production and consumption, displaying the power flow between the PV array, battery, grid and house loads as well as tracking real-time system data.

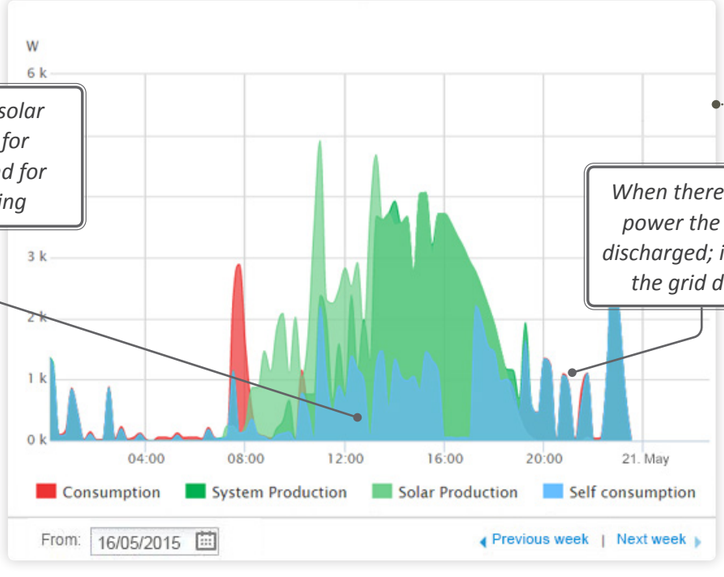




Solar Energy Consumed / Energy Produced

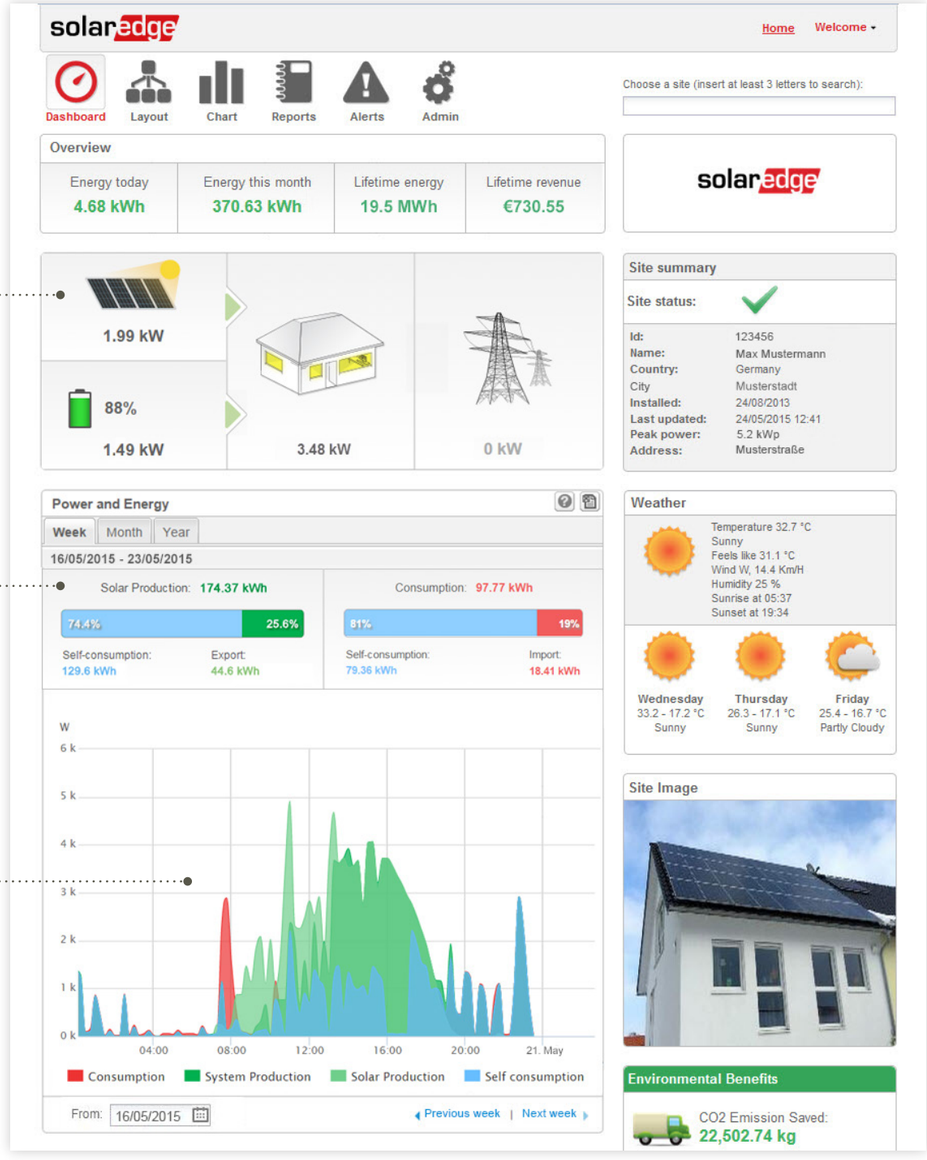
Solar Energy Exported to Grid / Energy Produced

Energy Purchased from Grid / Energy Consumed



During the day solar power is used for consumption and for battery charging

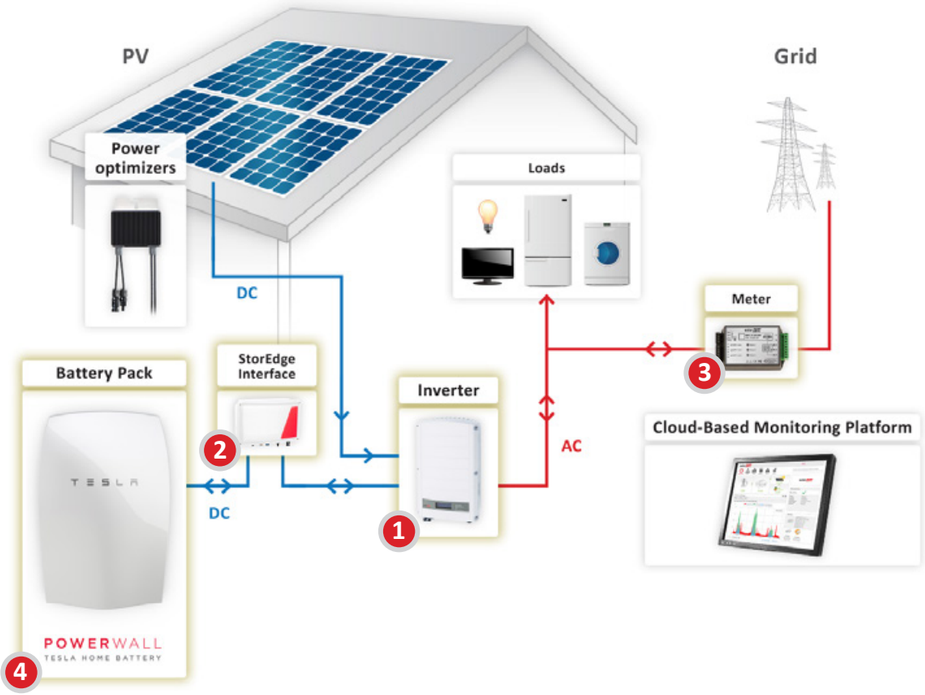
When there is no solar power the battery is discharged; import from the grid decreases



Dashboard from the SolarEdge cloud-based monitoring platform

StorEdge Applications - Basic Configurations

Optimizing Self-Consumption | **Available Now**



1 SolarEdge Single Phase Inverter

The SolarEdge inverter manages battery and system energy, in addition to its functionality as a DC PV inverter

2 StorEdge Interface

Connects the Tesla Powerwall Home Battery to a SolarEdge inverter

Connects to the inverter in parallel to the PV strings

3 SolarEdge Meter

For production and consumption readings

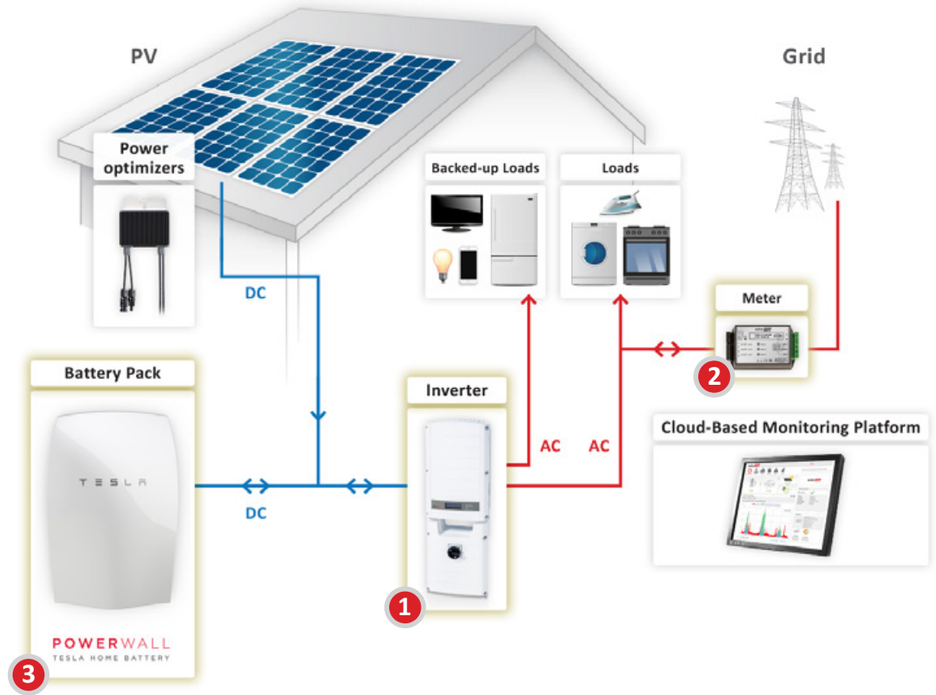
Meter is required for self-consumption management

4 Tesla Powerwall Home Battery

6.4kWh, ideal for maximizing self-consumption

High-voltage, high-efficiency DC coupled battery

Optimizing Self-Consumption + Backup Power | **Available Q2 '16**



1 SolarEdge Single Phase StorEdge Inverter

The StorEdge inverter manages battery, system energy and backup power, in addition to its functionality as a DC PV inverter

2 SolarEdge Meter

For production and consumption readings

Meter is not required for a backup-only solution

3 Tesla Powerwall Home Battery

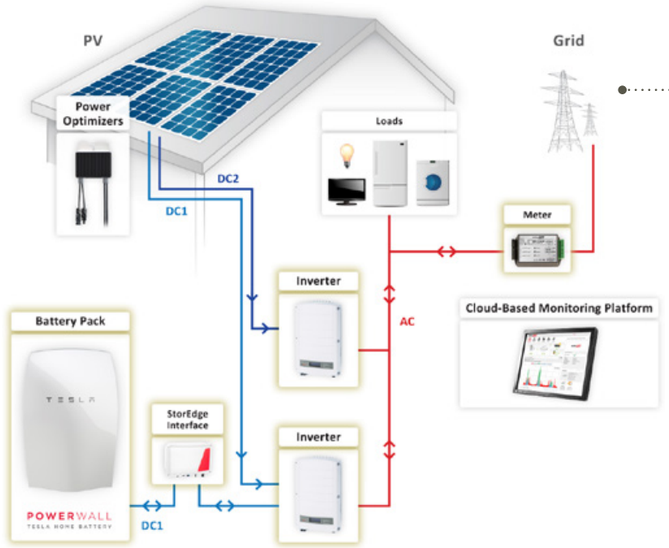
6.4kWh, ideal for maximizing self-consumption and powering backed up loads

High-voltage, high-efficiency DC coupled battery

Additional StorEdge Configurations

Each StorEdge application supports modifications to the basic system configurations, providing homeowners with a StorEdge solution specific to their energy requirements.

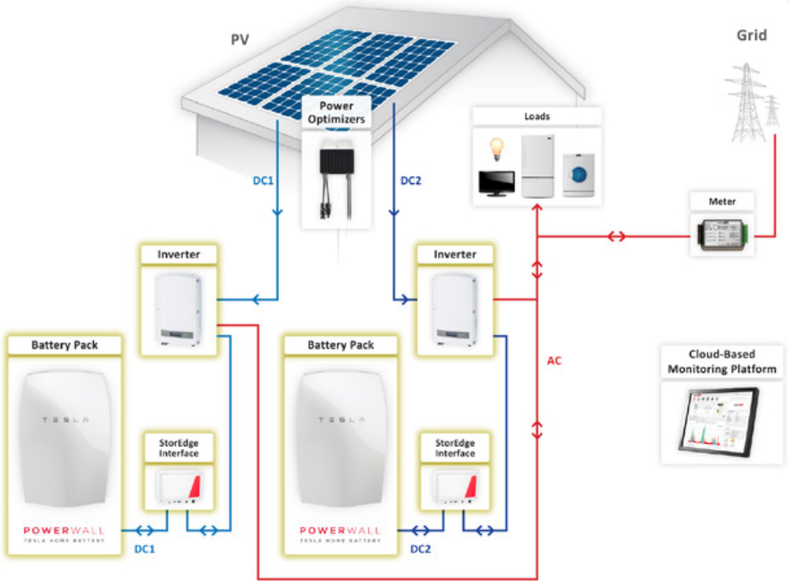
Homeowner Requirement	How is StorEdge Connected?
1 **More PV power**	Add another 1-ph inverter to handle additional PV power from array
2 **More battery capacity & power**	Add one more 1-ph inverter and battery. For the self-consumption application only, each of the two batteries is connected to a separate StorEdge interface
3 **More battery capacity**	Connect two batteries to a single StorEdge interface with one battery operating at a time
4 **Connection to 3-ph SolarEdge inverter**	Connect the StorEdge system to the SolarEdge inverter's AC output (AC-coupled solution)
5 **Connection to third-party inverter**	Connect the StorEdge system to the third-party inverter's AC output (AC-coupled solution)
6 **More battery capacity & power**	Connect two batteries to a single StorEdge interface



1 More PV Power

Available Now

A second 1-ph inverter is added for the purposes of handling the additional PV power needed.



2 More Battery Capacity & Power (two inverters)

Available Now

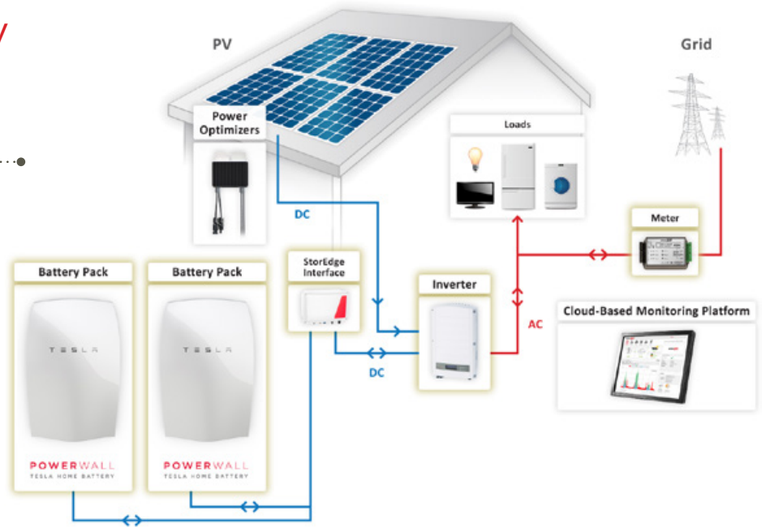
Where more power and capacity are needed, two 1-phase inverters are installed with two batteries each connected to a separate StorEdge interface.

Additional StorEdge Configurations

3 More Battery Capacity
(one inverter)

Available Q2 '16

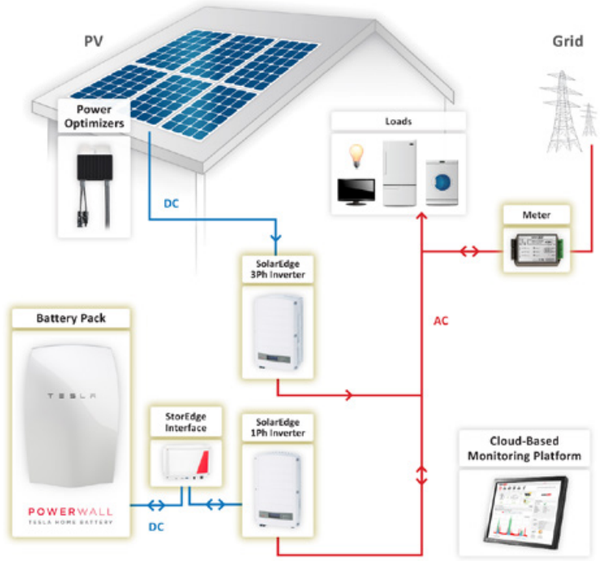
For homes with high consumption, two batteries are connected to a single StorEdge interface with only one battery operating at a given time

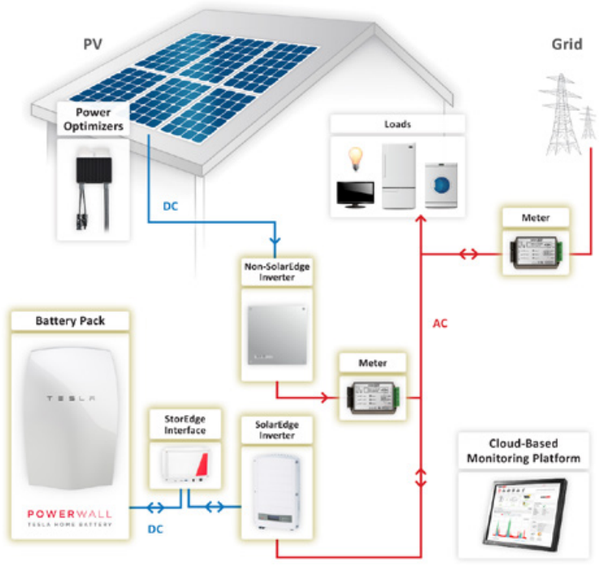


4 3-Ph SolarEdge PV Systems

Available Q2 '16

For installations using a SolarEdge 3-phase inverter, the StorEdge system, including an additional 1-ph SolarEdge inverter, connects to the 3-ph inverter's AC output (AC-coupled)





5 Third-Party PV Systems

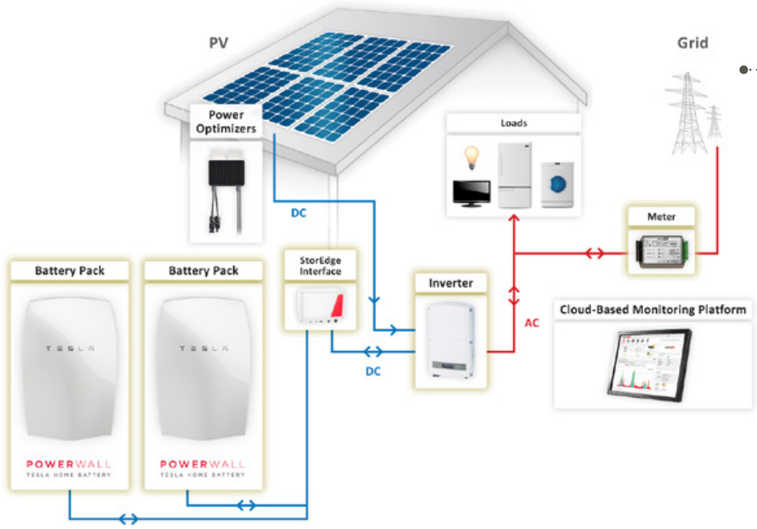
Available Q2 '16

To upgrade existing third-party PV installations, the StorEdge system, including an additional 1-ph SolarEdge inverter, connects to the third-party inverter's AC output (AC-coupled)

6 More Battery Capacity & Power
(one inverter)

Available H2 '16

For homes with high loads, two batteries are connected to a single StorEdge interface providing more power. (To support this configuration, new StorEdge interface and Tesla battery hardware will be required).



Case Study - Increasing Self-Consumption with StorEdge

By simply adding StorEdge to its existing SolarEdge PV system, this typical household was able to more than double its self-consumption levels

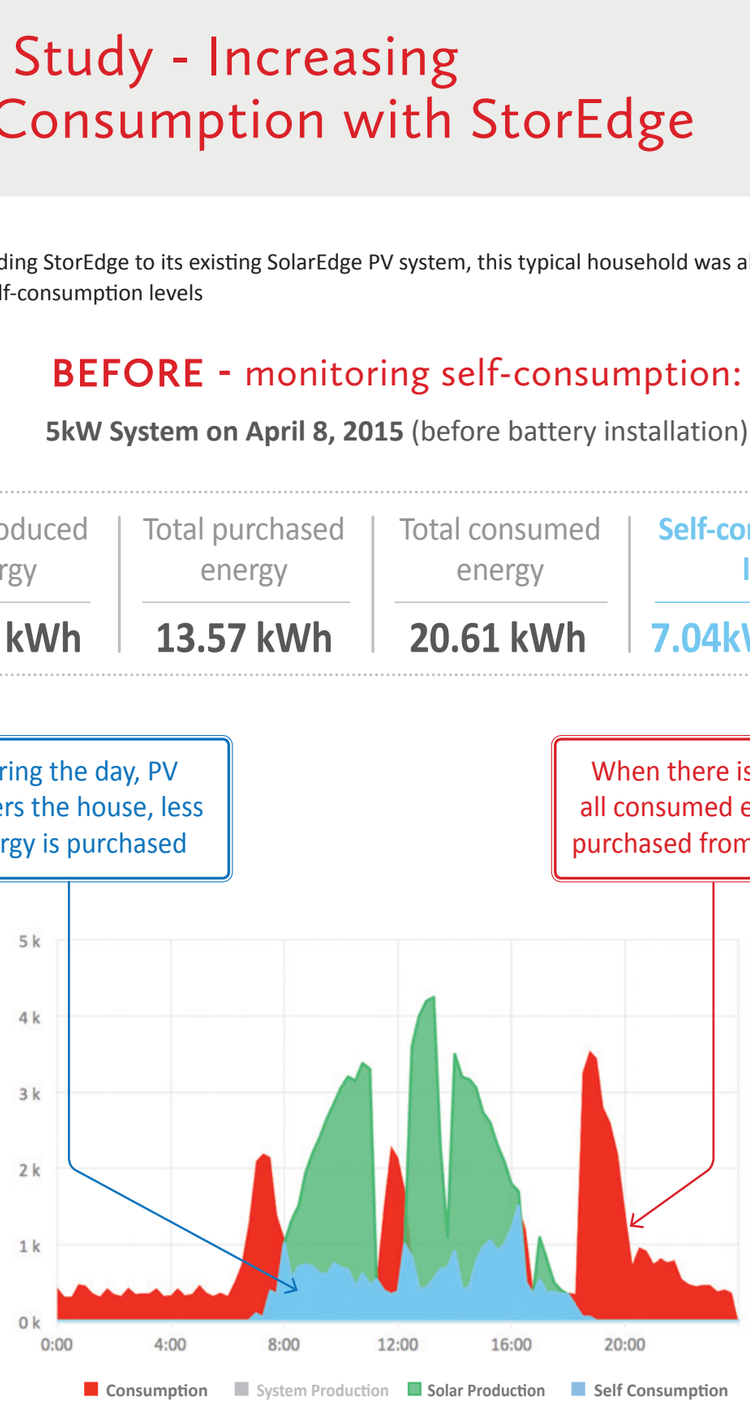
BEFORE - monitoring self-consumption:

5kW System on April 8, 2015 (before battery installation)

Total produced energy	Total purchased energy	Total consumed energy	Self-consumption level
21.37 kWh	13.57 kWh	20.61 kWh	7.04kWh | 33%

During the day, PV powers the house, less energy is purchased

When there is no PV, all consumed energy is purchased from the grid



*Based on a SolarEdge 5kW residential PV system

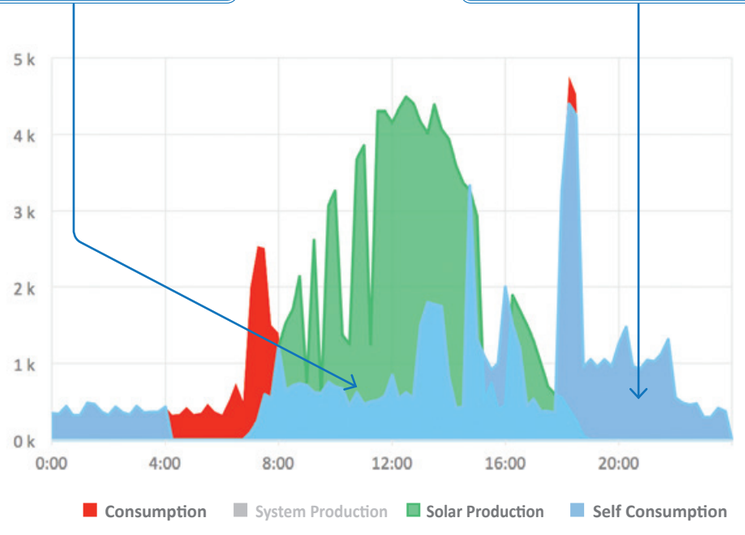
AFTER - increasing self-consumption:

5kW System on April 15, 2015 (after battery installation)

Total produced energy	Total purchased energy	Total consumed energy	Calculated self-consumption level
25.41 kWh	3.17 kWh	21.53 kWh	18.36kWh | 72%

During the day, PV powers the house and charges the battery

When there is no PV, the battery is discharged; less energy is purchased



After installing StorEdge, PV self-consumption jumped from **33% to 72%**

SolarEdge invented an intelligent inverter solution that has changed the way power is harvested and managed in PV systems. Addressing a broad range of solar market segments, from residential to commercial and large scale solar, the SolarEdge DC optimized inverter solution includes PV inverters, power optimizers, and cloud-based monitoring. By connecting power optimizers to each module, the system enables superior power harvesting and module management.

Since beginning shipments in 2010, SolarEdge has shipped more than 2.5GW of its DC optimized inverter solution and its products have been installed in PV systems in more than 91 countries. SolarEdge is traded on the NASDAQ under the SEDG symbol.

For more information on SolarEdge:

Website	www.solaredge.com
Email	info@solaredge.com
Twitter	www.twitter.com/SolarEdgePV
Facebook	www.facebook.com/SolarEdge