

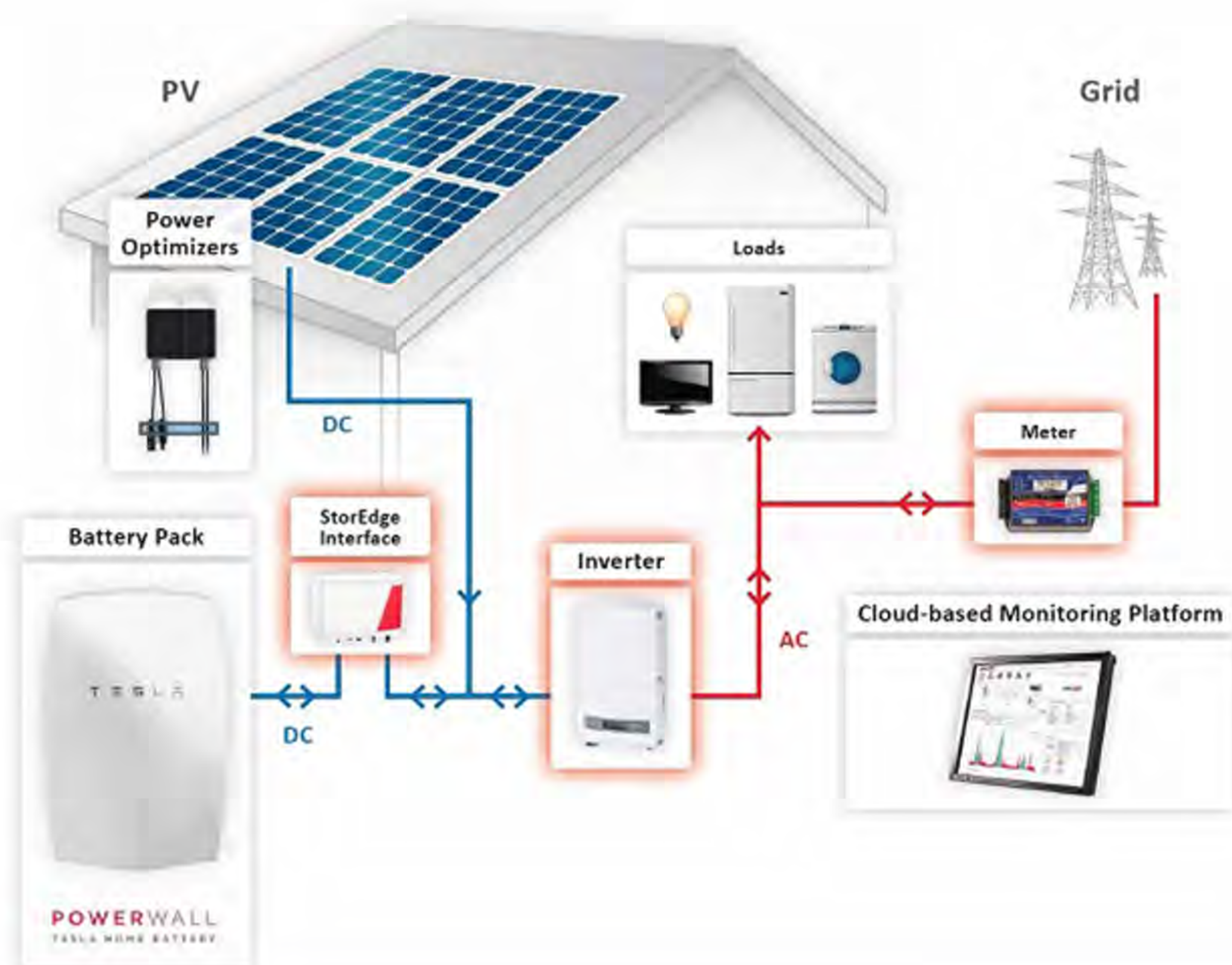
# POWER WALL

Battery Storage can **reduce your energy bills to zero** and give you the opportunity to be an environment friendly home.

Battery storage if sized correctly will dramatically reduce energy demand from the grid; a standalone solar system will provide power during the day light hours to your main loads and provide ample surplus energy to charge your battery storage system.

TESLA POWERWALL is the ideal fit not only efficient but beautiful in design, and it doesn't stop there.

The TESLA POWERWALL can be used in a backup function using the latest in Solaredge with backup function; this function allows you to get at the stored energy in the event the grid goes down leaving you with battery storage on those essential services, fridges, computers and lights.



## POWER WALL TESLA HOME BATTERY



### Retro Fit to existing solar systems:

The TESLA POWERWALL can be retro fitted to existing solar systems using a SMA interface and the Solaredge AC coupled solution, both these companies are leaders in inverter design and 2 of only few companies in the world ready to take on the TESLA POWERWALL and provide a system you can trust.

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# ALPHA ESS

**Before you invest, there are some things we would like to share, so you get as much from your solar system and battery storage unit as possible, below is some information to help understand solar and its best use.**

Solar Power works naturally when the sun rises and sets, early morning will see the energy produced from the solar system increase as the sun rises allowing for more energy to be consumed directly from the solar system, early and late in the afternoon a solar system will have very low actual real power to supply on demand and as result will see what is being produced from the solar system used and any remaining demand will have to come from the grid this isn't ideal given that most homes have a working family between the best hours of solar production meaning most of the solar energy is sent back to the grid giving you very little relief from grid use and energy charges.

**Graph # 1** shows a typical home daily power use, the solar production far outweighs the demand so 80% is exported and absolute waste of your solar power.

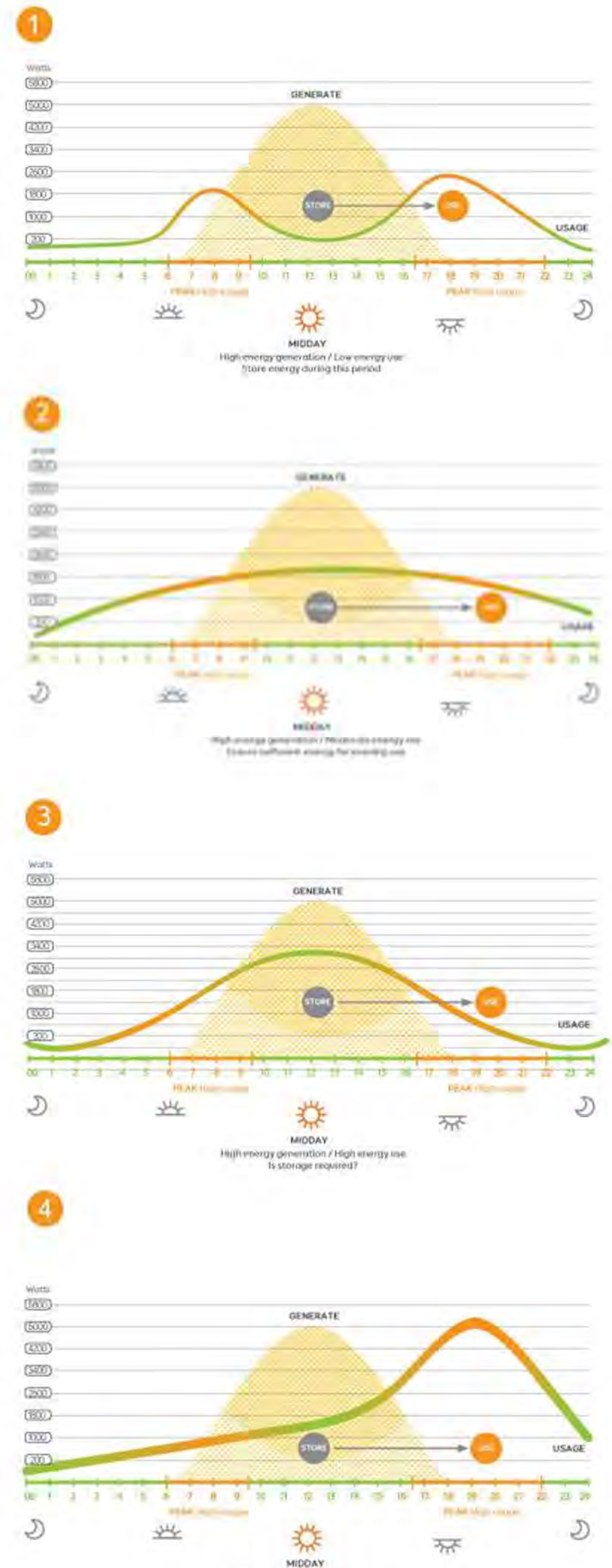
**Graph #2** shows a home with moderate energy use during the day struggles to use all the solar energy produced, in this example what we call the base load or demand didn't exceed 2,200 watts but the solar produced 5,000 watts sending 55% of your solar energy to the grid again home battery storage system would have captured this surplus.

**Graph #3** shows a home with high daily use will still see a high percentage exported, battery storage will again capture this energy for use when needed.

The inclusion of a battery storage solution whether an off grid power unit or home energy grid connect system will enable you to capture the solar energy while you are not at home or any surplus energy produced even while you are home to be stored and used on demand when you need it below is an example is a battery storage unit at work, the load to the home was supplied by the solar and surplus captured for later use.

**Graph # 4** shows Load shifting is also important, if you can manage to move your heavy loads such as appliances for cleaning or washing to after 10Am and before 2Pm and include such things as your pool or water pumps this will help reduce the battery capacity needed in your home battery system, batteries are the single most costly part of a battery storage of off grid power system so smart load shifting will reduce battery quantity and battery storage prices.

Going to stand alone power isn't complicated, if you size your solar system and batteries and install an expandable battery storage system you will feel comfortable enough to disconnect from the grid and have a truly stand alone solar system and home battery storage unit.



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