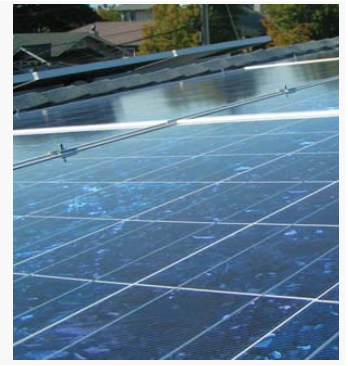




Custom Power Solar



Custom Power Solar Energy Storage Systems

Grid-Tied or Off-Grid

CPS Solar Energy Storage Systems can be operated grid-tied, off-grid or a combination at any time.

Plug in Power Solution

Custom Power Solar (CPS), provides a complete, pre-packaged, assembled, and wired system for homeowners and installers looking for a simple, all-in-one solution to providing solar power systems with energy storage. We use Outback Power Radian inverters and charge controllers and lithium iron phosphate batteries from Energport with local distribution in Fremont, CA. The Custom Power Solar Energy Storage System, manufactured in California, is available in 4kw and 8kw models, stackable to 80kw.

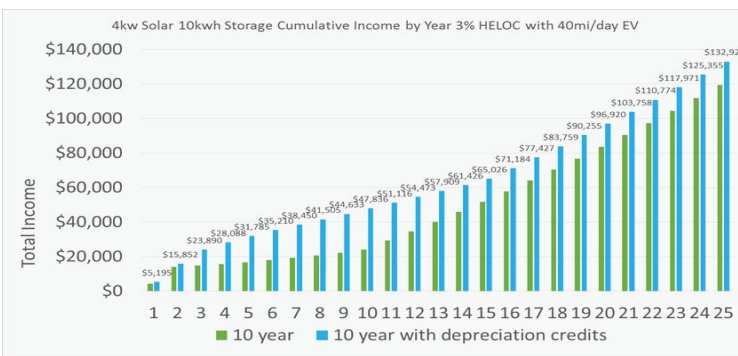
The CPS Energy Storage System (ESS) comes pre-assembled as a unit on a lightweight drillable backing, ready to be mounted on a wall in your basement or garage, with batteries included. Batteries are included in two steel cases for 4 kW system. The 8 kW system batteries come in four steel cases.

Installation completes with typical 1" EMT conduit for connection to the solar installation, grid tied and power output connections.



CPS Energy Storage System 4kw/10kwh

- Online and local monitoring and control
- Full BMS with local and remote monitor
- Grid-tied or Off-Grid modes, with blended Grid-Zero mode for shifting load usage
- Up to 12kw (50A) in grid-tied mode with 200A option
- 240VAC single phase split 240/120
- Rapid shutdown option - one button emergency push-to-shutdown remote control



Features

Model 4kw (Also available in 8kw)

- 4kw Inverter
- 4kw Charge Controller - solar module input (option)
- 10kwh Lithium Iron Phosphate battery storage

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Options

200A grid-tied option

For systems where customer plans to operate routinely over 50A of operation from home load, the 200A option adds a 200A Automatic Transfer Switch which automatically switches the load system from grid-tied to the backup system in the event of a power failure. The ATS can also be remotely controlled by the Radian system.

Adding Battery Backup to Existing Solar

If you already have a solar system but want whole home battery backup, request a system without the charge controller and indicate your inverter model.

Fast Solar Installation

CPS now offers a unique flat roof installation system that allows solar arrays to be added with no roof penetrations in record time, and allows for rapid removal for moving or hurricane protection. We also provide conventional sloped roof attachment systems for any type of roof, and ground mount systems

Generator Input

All systems include a generator input which can come from a gas powered generator or an Electric Vehicle equipped with 120V or 240V AC output.

Wireless Control and Monitoring

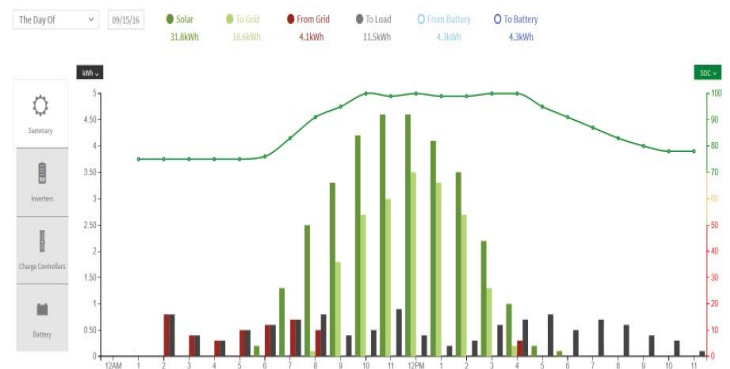
Outback OpticsRE cloud-based monitoring and control is included with the Radian inverter. In addition, the system can be wirelessly monitored and controlled from a mobile phone.

Warranty

Outback Power provides a standard 5-year warranty for their Radian inverters and charge controllers. For states such as California that require a 10-year warranty, Outback provides an extended warranty option at an additional charge. Energen provides a 10 year warranty on the batteries. Custom Power Solar provides an optional 10 year service warranty for systems located in California.

Other Benefits

Energy security for those unforeseen events that affect the grid. When the grid fails, power instantly transfers to the solar/battery combination to power your home.



Load-shifting

How Does Load-Shifting Help Me?

Solar Renewable Energy is saved by the battery during the day. This power is used during the evening hours to support the energy needed without using energy from the grid—hence the term: **Grid-Zero**.

In this example load shifting starts at 5 pm, so some grid power is accessed at 4 pm. Looking at the line at the top of the chart, the battery energy level is decreased as the power is used to support the load in the evening hours from 5 pm to 10 pm. The battery energy is replenished the next day from solar power in the am. This schedule can be manually set, or pre-set to run automatically. The amount of time the battery can support the load in the evening is determined by a number of factors, including the load, the size of the battery, the temperature and the charge state of the battery.

Lower Utility Bills

- **You save money by not utilizing higher cost electricity during the evening hours**
- **You may be able to use the battery energy storage to help charge your electric vehicle**
- **You help keep the air clean by reducing the need to burn fossil fuels for power during peak demand times**
- **In the future you may be able to participate in demand response programs sponsored by your utility or Community Choice energy service provider**

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Specifications

Radian CPS Battery Energy Storage System Description	4kw	8kw	units
Inverter			
Inverter used	GS4048A	GS8048A	
Continuous power out	4	8	kw AC
Peak power out	10	20	kw AC
Grid-tied max power (pass-through)	12	12	kw AC
Charge Controllers			
FM-80 charge controllers	1	2	
charge controller max power	4.5	9	kw DC
Battery			
Battery nominal capacity	10.24	20.48	kwh
Configuration of battery	16s8p	16s16p	X in series Y cell pairs in parallel
Capacity of each cell pair	1.28	1.28	kwh
Cell pairs per battery	8	16	
Nominal voltage	54	54	V
Nominal capacity	200	400	Ah
Voltage minimum	44.8	44.8	V
Voltage maximum	55.2	55.2	V
Operating V range of inverter min	36	36	V
Operating V range of inverter max	63	63	V
Max charge current	80	160	A
Max discharge current	80	160	A
Battery efficiency PV->battery	98%	98%	DC
Battery efficiency battery->AC	93%	93%	CEC-AC
Round trip efficiency	91%	91%	
Min charge time	2.4	2.4	hr
Min discharge time	2.4	2.4	hr
Power out min charge/discharge time	4	8	kw
Battery capacity times inverter efficiency	9.5232	19.0464	kwh
Dimensions			
Size	65x36x9	65x36x9	in
Weight	335	425	lbs

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