OutBack POWER™
an EnerSys company

Eliminating the Utility Bill

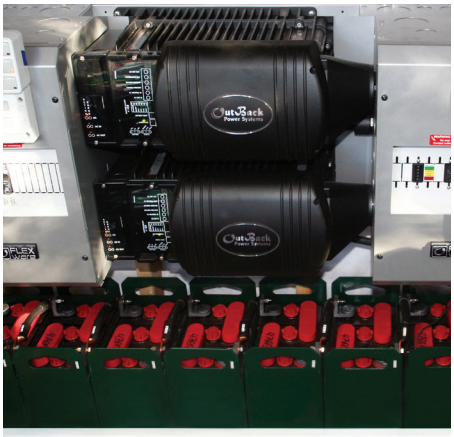
GRID/HYBRID CASE STUDY

SYSTEM SPECIFICATIONS	
Location	Condo Building, Paso Robles, California
System Power	48Ah/48V battery backup
Components	FLEXpower TWO
Power Sources	PV array and battery backup
Installer	Mobile Solar

OVERVIEW

Paso Robles, California is a populated urban area with an abundance of solar exposure and limited building space. Due to an unreliable utility grid producing frequent service outages, the community sought **an alternative energy solution to offset utility grid dependency and take advantage of California's lucrative net metering opportunities.** A grid-tied system would exceed spacing restraints and disconnect from the grid during utility outages—an all-too-frequent occurrence. With these limitations in mind, it was clear that this project required a more advanced system with a small footprint.

An abundance of solar exposure and unreliable utility power led one Paso Robles resident to research alternative energy solutions for a California home. The homeowner's goal was to offset energy costs by using solar power to take advantage of California's net metering incentives by selling excess energy back to the utility, as well as have the added security of backup power for potential blackouts. A grid-tied system would help offset utility costs and require significant space, but it would not provide the critical backup power necessary during frequent outages. An off-grid system would take up considerable space and would not permit selling of excess power back to the utility company. Mobile Solar recognized these unique challenges and engineered a solar system with a small footprint.



CHALLENGE

- Install a photovoltaic (PV) solar powered system in a condominium in a densely populated urban area
- Design a battery-based backup system that fits into a compact, inconspicuous space for a condo
- Ensure uninterrupted power for the resident, in spite of a relatively unreliable local utility source

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01/2020

SOLUTION

This design provides both grid-tied savings and off-grid independence during outages. Mobile Solar designed this PV system around a 418Ah/48V industrial battery backup system housed in a specially built shed behind the condominium. The system gets power from an array of 12 solar panels and a generator that boosts the system's batteries as necessary.

An OutBack FLEXmax 80 charge controller optimizes system charging and is one component of the OutBack FLEXpower TWO pre-wired system also consisting of two inverter/chargers, a communications hub and an OutBack MATE3 system display and controller. The inverter delivers AC power back to the main panel, maintains battery charging and sells electricity back to the grid as allowed through California state incentives.

After receiving approval by both the City of Paso Robles and the Pacific Gas and Electric Company, the system now receives DC power from the solar array and runs it to the OutBack charge controller, which maintains the batteries at a full state of charge and supplies power to the OutBack inverters. In addition to financial benefits, the homeowner now has consistently reliable power and is not affected when the grid goes down, thanks to a system that seamlessly transitions between grid-tied and off-grid operational modes.

OUTCOME

- Grid independence and up to 100% energy cost savings, resulting in a potential $0 energy bill
- Capability to sell excess electricity back to the grid
- True grid independence with a constant, uninterrupted energy supply in the event of a power outage

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