# Case Study: Installing Carport Solar Array

BETTER BUILDINGS ALLIANCE

## Two Birds with One Stone: Installing Carport Solar Arrays

The Hampton Inn & Suites Bakersfield North-Airport, located about two hours north of Los Angeles, California, has to operate in a hot climate where summer daytime temperatures often exceed 100 °F. As a result, the hotel's largest electricity expenses are its heating, ventilating, and air conditioning (HVAC) due to maintaining comfortable indoor temperatures for guests 24/7. To mitigate electricity costs, the hotel management, Blackstone Hospitality Group, began to investigate opportunities to install solar.

## Project Keys to Success

Installing a rooftop array would have been problematic because it would have required the hotel to close the top floor during construction, forfeiting that revenue for the construction period. Installing a carport-mounted array bypassed this potential issue, and additionally offered much-needed shade from the sun for guests' cars.

There were two additional approvals necessary once the carport solar array was planned. The Hampton Inn & Suites is a franchise of the Hilton Worldwide[1] brand, therefore Hilton Worldwide needs to approve any aesthetic modifications to its hotels. This approval process went smoothly for the Hampton Inn & Suites because the Hilton Worldwide was very supportive and receptive to the project. Specifically, the sustainability department and the design & construction department, including the Vice President of Design & Construction, helped move the project through the process quickly. Additionally, like many hotel properties, the Hampton Inn is located in a local Planned Development zone, which requires changes to the property to receive additional review by the planning jurisdiction. This additional step also proceeded smoothly.

*Part of the Hampton Inn & Suites array in Bakersfield, CA. Photo credit: REC Solar.*

| SOLAR PROJECT SPOTLIGHT | |
|---|---|
| Date Installed | July 2014 |
| Location | Bakersfield, California |
| Size | 102 kW |
| Annual Production | 157,080 kWh |
| Electricity Offset | 37-44% |
| Monthly Bill Savings | $8,800 |
| Expected Payback | 7.75 years |
| Financing | SBA 504 Green Energy loan |

[1] Hilton Worldwide is a Better Buildings Challenge partner.

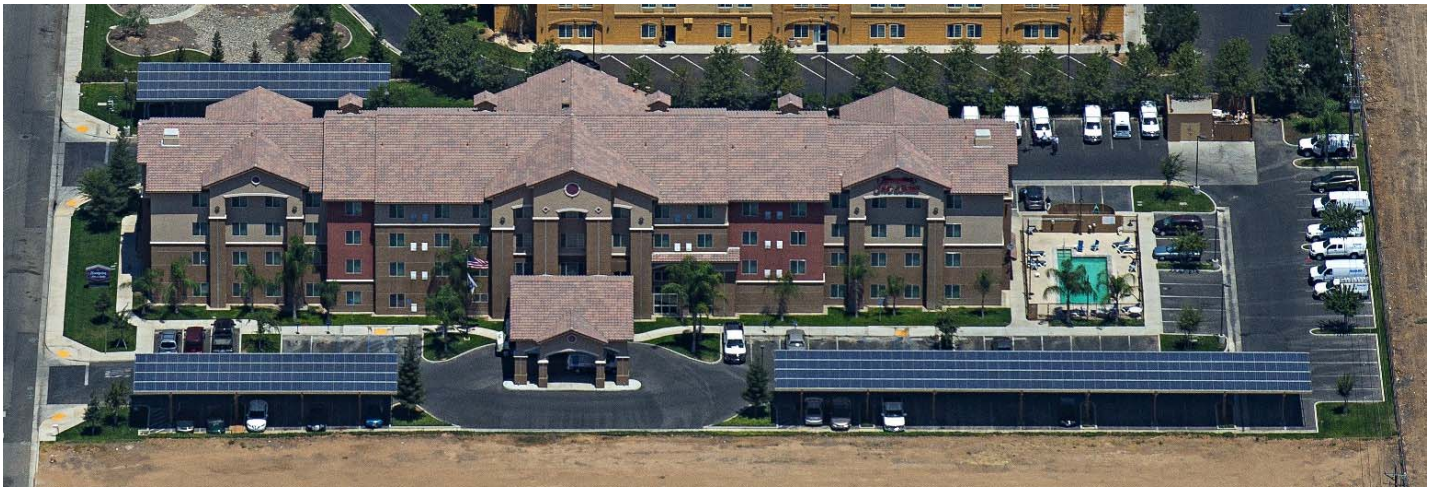
## Financing

Blackstone Hospitality Group included the cost of the solar installation and the energy efficiency upgrade in its initial financing package for the hotel, which was purchased in November 2013. Blackstone utilized a Small Business Administration Green 504 loan for 35 percent of the total purchase price, and financed the remainder with a conventional bridge loan.

The installation construction took up approximately 75 percent of the parking lot, but the hotel remained active, requiring tight control to ensure public safety. REC Solar barricaded construction zones and implemented a site-specific safety plan to keep hotel patrons informed and safe. Throughout the construction process, the company kept the hotel updated on the system's schedule and progress.

The 102 kilowatt (kW) carport-mounted solar photovoltaic array was completed in July 2014. In combination with energy efficiency measures, the solar energy is expected to offset up to 44 percent of the 94-room hotel's electricity costs. The carport installation also hosts two electric vehicle charging stations, which may be expanded to eight charging stations in the future.

### KEY TAKEAWAYS

- Due to the fact that guest parking availability would be significantly reduced during construction, the hotel prepared a plan to minimize guest impact and created a lobby display to explain the solar project. As a result, guests were extremely receptive and their understanding was "phenomenal". No issues were raised throughout the process, in large part due to the clear communications to ensure guest engagement and education.
- Not all lenders are familiar with the Small Business Administration Green 504 loan program. Blackstone Hospitality Group worked closely with its lender to discuss program options and nuances, resulting in the lender agreeing to participate. REC Solar, the solar contractor, also collaborated with the lender to determine that the loan would be treated as a construction loan with periodic payments due to REC Solar during installation.

*The full 102 kW Hampton Inn & Suites array in Bakersfield, CA. Photo credit: REC Solar*