

Solar PV Case Study

Nine JC Penney Stores 3,664 kW



LOCATION: New Jersey & California

COMPLETED: December 2008

INSTALLATION: Commercial Roofs

NUMBER OF MODULES: 14,364

TYPE: SunPower T10 Roof Tiles

OUTPUT: 5,056 MWh per year

Project Overview

JC Penney is one of America's leading retailers, operating 1,083 department stores across the United States and Puerto Rico, as well as the jcp.com retail Internet site and the largest general merchandise catalogue business in the U.S.

The company has a strong commitment to sustainability, and has set the goal of achieving ENERGY STAR certification for at least 200 of its stores across the U.S. by 2011. To be certified, stores must achieve an energy efficiency rating in the top quartile for all retail stores while maintaining appropriate levels of comfort and air quality.

In addition to increasing energy efficiency and minimizing power requirements, JC Penney has embarked on a program of using renewable energy to power some of its stores and distribution centers. Working together with SunPower Corporation, CarbonFree Technology arranged the financing for solar power systems on four stores in California and five in New Jersey, with systems ranging in size from 259kW to 602kW.





Benefits

The solar power systems provide a number of specific benefits to JC Penney, including:

- Meet 25% of the total energy requirements of the nine stores
- Yield immediate savings versus utility power
- Reduce JC Penney's electricity demand during expensive, peak daytime hours
- Provide financial hedge against rising electricity rates
- Protect roof membrane from damaging solar radiation and thermal cycling
- Maintain impervious roof integrity without anchoring solar system to roof

"We are proud of what we are accomplishing as an organization to reduce energy consumption and extend JCPenney's legacy of social responsibility, and our associates remain focused on seeking new ways to protect the environment."

JIM THOMAS
VICE PRESIDENT & DIRECTOR
CORPORATE SOCIAL RESPONSIBILITY
JC PENNEY

Environmental Benefits

The 3.66 MW of solar arrays will generate approximately 5,056 megawatt hours of clean electricity in their first year of operation, declining slightly each successive year. Compared to grid electricity, the effect of using this solar system is equal to eliminating 3,244 metric tons of carbon emissions in the first year, based on the average fuels used to make electricity in California and New Jersey.

THE CARBON SAVINGS ARE EQUAL TO:

- » Powering 450 average US homes
- » Taking 1,024 cars off the road
- » 737 acres of mature pine/fir trees

Teamwork

Each of the nine systems is owned and operated by Integrys Energy Services, Inc., a wholly owned subsidiary of Integrys Energy Group, with electricity supplied to JC Penney under long term Power Purchase Agreements (PPAs). Financing with Integrys was arranged by CarbonFree, and the process required a significant degree of teamwork between all parties.

The project was first presented to CarbonFree by SunPower, and CarbonFree suggested Integrys as a potential investor. The time from first receipt of the project details until the signing of a Letter of Intent to finance the project was less than six weeks, and it was only another four weeks until all the detailed project agreements were signed. Successful installation of all nine systems took just over six months, and was completed before the original December 2008 deadline.

"JCPenney is piloting this project to explore how we can best support the development of clean energy technologies as part of our comprehensive social responsibility program,"

MICHAEL W. TAXTER
EXECUTIVE VICE PRESIDENT AND DIRECTOR
JC PENNEY STORES

About Us

CarbonFree Technology is a leading North American solar project developer. We provide turnkey solutions to help clients benefit from solar energy without bearing the significant capital expense of purchasing systems. We offer the most up-to-date, reliable solar technologies available and make it easy for organizations to choose the systems best suited to their needs.

For more information, please contact us.

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