



# BOOST PROFITS WITH SOLAR POWER:

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5 Things Every Commercial Property Owner Needs to Know Before Investing in Rooftop Solar

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## INTRODUCTION

Energy use is typically one of the largest expenses of any commercial property. With this in mind, savvy commercial real estate (CRE) owners are increasingly looking at solar power as an effective means of reducing operating expenses and creating a new source of revenue, which could lead to a significant increase in the CRE owner's bottom line.

The opportunity to invest in solar is growing thanks to a decrease in costs for solar installations over the past few years. The deployment of solar projects has [increased 203% since 2010<sup>1</sup>](#), significantly reducing overhead costs for companies like [Costco](#), [Apple](#), [Kohl's](#), [Macy's](#), [Volkswagon](#), [Walmart](#), [Safeway](#) and [IKEA<sup>2</sup>](#). Whether office, industrial, multifamily or retail, commercial properties offer some of the most ideal space for modern solar installations. There are a growing number of cost saving and revenue generating opportunities for commercial property owners hoping to capitalize on this trend.

This whitepaper will explain all the preliminary topics associated with making a rooftop solar investment decision and outline key benefits and areas of consideration for CRE owners.



MACY'S, IRVINE, CA



IKEA, BLOOMINGTON, MN



KOHL'S, ORO VALLEY, AZ

*Photo Credit: "Top Corporate Solar Users" via SEIA.org*



*“Due to growing demand, solar developers are willing to pay to lease rooftop space.”*

## HOW ROOFTOPS CAN GENERATE ADDITIONAL INCOME AND REDUCE COSTS

Solar power installations can offer multiple opportunities for CRE owners to impact their bottom line. Here is an overview of the top three means of increasing ROI with solar power.

### 1. GENERATING INCOME

Leasing rooftop space - Due to the growing demand for space, solar developers are willing to pay to lease rooftops. CRE owners can lease their rooftop space to third-party solar project owners for additional revenue.

### 2. REDUCING OPERATIONAL COSTS

Own or lease a solar system - By owning or leasing a solar power generating system, CRE owners can use the system to serve their onsite electrical load and reduce utility bills.

Partner with a solar developer - CRE owners can work with a developer to build a solar project onsite and purchase the electricity under a long-term power purchase agreement (PPA), resulting in reduced electricity costs.

### 3. INCREASING ASSET VALUE

Enhance property value as part of a LEED certification strategy – LEED certification provides independent, third-party confirmation that a building meets the highest green building and performance measures. To achieve LEED Platinum status a building must score at least 52 points of a possible 69. The use of renewable energy resources can account for



LEED-certified building  
**25% lower**  
 energy costs ↓

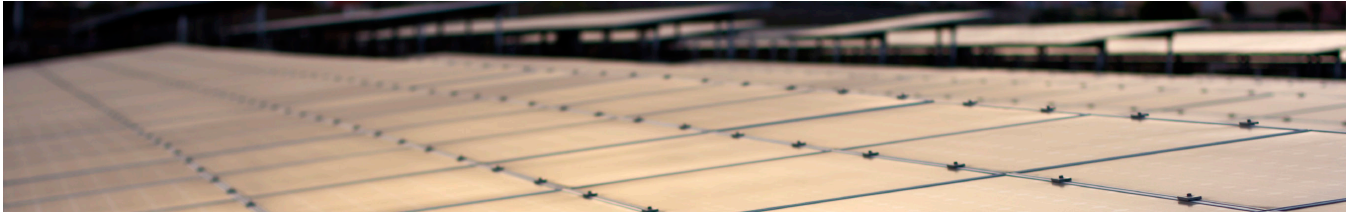
17 possible LEED points, which is the largest block of points available among the different sustainability categories for LEED certification. In a [2011 study of the U.S. General Services Administration's LEED-certified buildings<sup>3</sup>](#), the Department of Energy found LEED-certified buildings have 25% lower energy usage and a 19% reduction of operational cost versus the national average.

## DETERMINE IF SOLAR IS RIGHT FOR THE PROPERTY



Not every rooftop is suitable for solar, and some are better than others. A variety of factors will determine whether solar makes sense, including:

- **AMOUNT OF SUNLIGHT** - Exposure to sun and absence of surrounding trees or structures that cause shading.
- **ROOF STRUCTURE** - Physical condition of the roof, which must be capable of supporting the solar equipment.
- **LOCAL REGULATION** - Energy regulatory environment in the local market, including state and local incentives available in the installation location to help pay for the system.
- **ROOFTOP SIZE** - Generally, the ideal size for a solar rooftop installation is in the range of 30,000 to 100,000+ square feet.



## OWNING VS. FINANCING: PURCHASING OR LEASING A SOLAR SYSTEM ?

A CRE property owner who wants to go solar can either purchase a solar power generating system or utilize third-party financing, which has become one of the most popular methods of funding solar. Third-party financing typically uses one of two models: (i) a lease model, or (ii) a power purchase agreement (PPA) model. The decision to pay for rooftop solar system will depend on particular business goals. Some of the key considerations are highlighted below.

**PPA MODEL:** A third party developer and CRE property owner enter into a long-term PPA, pursuant to which: (i) third party developer installs the solar system on the CRE owner's property at no upfront cost, and (ii) the CRE owner agrees to purchase the electricity generated by the system at a certain rate per unit of energy generated, usually lower than the local utility rate. The CRE owner's cost will go up if the system produces more and go down if the system produces less. At the end of the PPA term, the CRE owner can extend the contract, ask the developer to remove the project or elect to purchase the solar system from the developer.

**LEASE MODEL:** A third party developer and CRE property owner enter into a long-term lease, pursuant to which: (i) the third party developer installs the solar system on the CRE owner's property at no upfront cost, and (ii) the CRE owner agrees to pay a fixed lease amount, at a level usually lower than what the monthly power bill would have been without the solar installation, in exchange for the power produced by the system. Regardless of how the system performs, the CRE owner pays the agreed upon lease rate. At the end of the lease term, the CRE owner can extend the contract, return the system or elect to purchase the solar system from the developer.

**COMPARING SYSTEM PURCHASE VS. LEASE/PPA:** The chart below highlights some of the key considerations for a CRE owner who is trying to decide whether to buy a solar project or finance it through a lease or PPA:

	SOLAR LEASE / PPA	PURCHASE OF SOLAR SYSTEM
<b>CASH REQUIREMENTS</b>	No upfront cash required	Upfront cash required to pay for system purchase
<b>TAX LIABILITIES</b>	CRE owner must work with PPA/lease provider to create a financing structure that can utilize tax incentives by transferring them back to the customer in the form of lower cost energy	CRE owner has sufficient tax liabilities to utilize solar investment tax credits and depreciation benefits
<b>MAINTENANCE</b>	CRE owner is not responsible for maintenance	CRE owner is responsible for maintenance of the solar system
<b>REBATES AND INCENTIVES</b>	Rebates, tax credits and incentives are typically not available to CRE owner's but rather the investor/lessor that owns the project/equipment	CRE owner is entitled to applicable rebates, credits and incentives, which can reduce the system cost by 10-50%
<b>ROI</b>	Low upfront investment reduces CRE owners long-term savings compared to outright purchase	Usually offers better long-term ROI than a lease/PPA, particularly if CRE owner can borrow at attractive rates
<b>PROPERTY VALUE</b>	Increases CRE owner's property value	Increases CRE owner's property value
<b>FUTURE SALE OF PROPERTY</b>	Some leases/PPAs can create potential issues if the property is sold	Fewer issues to address when the property is sold

## TOP 5 FACTORS TO CONSIDER BEFORE INVESTING IN SOLAR

### 1. ROOFTOP REAL ESTATE RIGHTS

One of the first things a solar developer will need to know is whether the property owner has sufficient title and full legal rights to grant separate control over the rooftop to the developer. A rooftop leased by a developer cannot be subject to existing liens, mortgages or other legal restrictions that prevent the property owner from being able to grant exclusive rights to the solar developer. Often this requires the building owner to obtain a subordination and non-disturbance agreement from its mortgage holder. Consider negotiating these rights in any new mortgage.

### 2. ROOF MAINTENANCE, REPAIR AND REPLACEMENT

Most roof-mounted solar systems last 35-40 years, while the commercial roofs on which they are mounted typically have life spans that are far shorter. Most solar installations involve a long-term lease of 20 years or more, so it's highly likely that roof repair or replacement will be required during the term of the lease and/or PPA.

A rooftop lease for solar can provide attractive new cash flows for a property owner, but the upside can disappear fast if roof maintenance and replacement is not adequately addressed in the solar lease or PPA. Matters such as notice of repairs, the period for the work, relocation of the solar equipment during repairs or replacement and compensation for the developer's lost revenue during repair/replacement should be covered carefully.

### 3. REMOVAL OF SOLAR EQUIPMENT AT END OF LEASE/PPA TERM

The removal of a solar system can be costly. Property owners need to ensure appropriate protections regarding end of term removal of equipment are included in their solar leases.



#### 4. RENT REVENUE

When renting a rooftop, CRE owners can structure rent in a variety of ways. Usually, it's a fixed, all-inclusive rent (sometimes with an escalator), but the solar developer is responsible for all costs and taxes associated with the installation and ownership of the solar project.

Alternatively, rent can be calculated based on the electrical output of the system or as a percentage of the revenues received by the developer.

#### 5. SOLAR LEASE CONSIDERATIONS

Property owners who are negotiating a solar lease and/or PPA should also be aware of the following:

- Most solar developers will require access for feasibility inspections and testing.
- The term of the lease likely will need to be 15-20 years, and the developer will probably ask for renewal rights, which are important to the developer because the productive life of a solar project should exceed the initial term of the lease.
- In order to obtain financing to construct the system, the developer may need the property owner to sign certain agreements for the benefit of the developer's lender (like an assignment of the lease and/or PPA as collateral).
- Property owners will want to make sure the developer maintains adequate insurance coverage for its solar facility and for general liability purposes.

### CONSULT AN EXPERT

Rooftop solar facilities are becoming more common, and the market is growing very quickly. For many commercial property owners, solar energy can create new sources of revenue and reduce electricity costs. However, there are many factors that contribute to the overall ROI of solar rooftop installations. Furthermore, the decision to buy a solar energy system versus enter a long-term lease or PPA can be complex and should be based on careful financial, technical and tax analysis. Expert financial analysis, contract negotiation and structuring are essential to reaping the benefits and avoiding the perils of solar systems.

## SOURCES:

1. "U.S. Solar Market Insight Report"; GreenTechMedia.com; <http://www.greentechmedia.com/research/ussmi> ; Dec. 26, 2013.
2. "Solar Means Business 2013: Top U.S. Commercial Solar Users"; SEIA.org; <http://www.seia.org/research-resources/solar-means-business-2013-top-us-commercial-solar-users> ; Dec. 26, 2013.
3. "GSA Study Building Performance"; GSA.org; [http://www.gsa.gov/graphics/pbs/Green\\_Building\\_Performance.pdf](http://www.gsa.gov/graphics/pbs/Green_Building_Performance.pdf), Dec. 28, 2013.

## ABOUT RADIANT GENERATION



Radian Generation, the leading independent solar asset management firm, provides comprehensive technical and financial asset management solutions and advisory services to solar project owners, investors, lenders and developers. To learn more about RadianGen, please visit our website at: [www.radiangen.com](http://www.radiangen.com)

If you need help evaluating whether solar might be right for your commercial property, please contact Peter Conklin at (415) 901-3425 or [peter.conklin@radiangen.com](mailto:peter.conklin@radiangen.com).



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