



Saving with Solar: Assessing a Solar Electric Project for Your Facility

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Saving with Solar – There Has Never Been a Better Time

Energy costs can be one of the greatest expenses involved with running a large facility. With energy rates becoming increasingly volatile, it is more important than ever to find stable, economical energy alternatives. In addition, many states have recently passed environmental policies that require significant reductions in energy usage and increased use of energy from renewable sources. These mandates often have aggressive deadlines and carry heavy fines for non-compliance.

The good news is that there has never been a better time for solar. Grid-connected, solar solutions can help you achieve your mandate requirements, make efficient use of unused roof or ground spaces, and enable you to save on your energy costs today, while hedging against rising electricity costs into the future.

The environmental benefits of renewable energy sources are undeniable. With the right solution, solar makes solid economic sense as well. Major businesses and government agencies are leading the charge and investing in solar. Thanks to federal and state tax incentives that can add up to as much as 50% in savings for business customers, now is the time to invest and secure the strongest long term return.

However, before starting a solar project, Facility Managers should investigate whether or not their site is appropriate for solar. It is also important to understand the best methods for calculating the true value of solar to ensure that each project will provide the highest long-term savings over the life of the system. This whitepaper provides top site considerations that should be taken into account as well as recommendations for the best method of valuing a solar project.

Is Your Site Right for Solar?

By choosing solar, you are making a decision that will not only save your organization money on monthly electricity bills, but will also protect the environment through the use of clean solar power. However, there are some key considerations that must be taken into account when considering your facility for a solar installation. No two sites are alike, and a solar solution should be customized to fit your site-specific energy needs.

The following takes you through a high level overview of what to evaluate when considering solar at your facility:

Climate

If you are interested in a solar rooftop solution, it is important to consider wind speeds and other climate factors that can influence the type of solution selected. For ground solutions, an area that minimizes flooding should be selected.

Space Availability

To ensure that your solar savings are maximized, it is advised that at least 80,000 square feet of rooftop space or 3 acres of land are made available. Space will also be needed for the use of a crane during installation.

Terrain

Whether you are in a suburban, urban or grassland environment, it is important that shading be minimized on your site as it can inhibit performance.

Interconnection

In order to ensure that your system is online as soon as possible, it is important that the installation be located near your meter. Additionally, depending on the size of your site, you may need to have inverters installed to convert the direct current (DC) from your system to usable alternating current (AC).

Roof Structure

For commercial rooftop installations, it will be necessary to evaluate the integrity of the roof structure to ensure it can accommodate the addition of solar hardware.

Financing Options for Solar Projects

A successful solar project requires careful consideration of financing options. It is important to work with a solar provider with the expertise to help you find the best financing option to meet your specific needs. This will ensure your unique solar project yields the greatest possible savings on energy cost over the total life of your project.

Cash Purchase – Own the system and the energy

The most simple and direct path to financing a solar project is to purchase the system directly. If you have available capital, existing tax liabilities, and can benefit from accelerated depreciation of your solar equipment, you may find that purchasing your system directly is the best option. Owning the

system provides the greatest total savings on energy over the life of the system. A direct cash purchase will typically reduce the total time required for implementing a solar project and will allow you to begin benefiting from clean, solar energy as quickly as possible.

Power Purchase Agreement (PPA) – Buy the energy

A PPA allows your organization to purchase solar energy on a monthly basis, much like you already purchase electricity from your local utility. You host the solar equipment at your site, but you don't have any of the responsibility of ownership or maintenance of the system. All you pay for is clean, renewable energy at a set rate per kilowatt hour, the same measurement of energy you see on your utility bill today. A PPA provides financing flexibility and predictable future energy rates, with no upfront costs.

Lease – Lease the system, use the energy

This option allows organizations to benefit from solar energy in exchange for a monthly lease payment for the use of the system hardware. Typical lease agreements range from 7-15 years at which point the lease can be renewed or the customer can choose to purchase the system for a residual value. For organizations that cannot fully capitalize on available tax incentives and want to keep the financing off their balance sheet, a lease may be the best option.

FINANCING OPTIONS

CASH PURCHASE	POWER PURCHASE AGREEMENT	LEASE
One-time Purchase	No upfront cost	Low upfront cost
Own all energy produced	Fixed rate for energy	Own all energy produced
Payment: Cash payment during system construction	Payment Cent/kWh	Payment: Monthly Lease

Financing Options Specifically for Public Institutions

Public agencies are in an incredible position to take advantage of a variety of unique financing options available to them.

Municipal Tax-Exempt Lease

A tax-exempt municipal lease is offered only to state and local government and allows for lower costs of debt and the option for system ownership at the end of the term. Additionally, as a non-tax-paying entity, public agencies can combine the lease with other incentives that may be available in your region.

Grants and Bonds

If your agency has been granted funding through an ARRA grant or bond, SunPower can work with you and ensure that the grant is applied toward a solar project. These funds will lower the amount of the project that needs to be financed, lowering the cost of the debt and therefore, your ultimate costs.

How to Value a Solar Project: Key Financial Considerations

Measuring the value of a solar project is not only critical, but can be complicated. Many factors need to be considered, but the key measurement should surround the total present value of savings. Gross price, price per kilowatt and 1st year PPA rates can be deceptive and do not paint the full picture. Below are some things to consider when evaluating a solar project for your facility.

More Energy = Greater Savings

Systems that generate more energy per square foot or acre will typically provide the greatest long term savings. Organizations who are able to better utilize the area available for their solar project often realize the greatest return on their investment. By producing the most solar electricity possible, you will be able to reduce the amount of utility electricity you consume and your long term savings will increase.

Calculating Savings

When comparing the value of a potential solar project, it is critical to assess the total savings over the life of the system. Without accounting for energy production differences in solar technology, it is hard to make the right long-term financial decisions. Gross system price, price per kilowatt, or first year power purchase agreement (PPA) rate can be deceptive measures of the value of a solar project.

Net Present Value (NPV)

The Net Present Value financial calculation is particularly effective at quantifying the true value of every solar project. NPV captures all project costs and savings as they occur over time, and conveniently converts them into a single dollar amount. When considering a proposed solar project, it is important to understand the present value of the projected net savings over the life of the system.

1 MEGAWATT SYSTEM EXAMPLE *

	GROSS PRICE	PRICE/kW	Present Value of Savings
SunPower High Performance Solar	\$7.0MM	\$7.00	\$2.0MM
Sub-premium Silicon Solar	\$6.5MM	\$6.50	\$1.8MM
Thin Film Solar	\$6.0MM	\$6.00	\$1.6MM

*Pricing of all solar can vary significantly based on site considerations, type of installation, and specific state and local incentive offerings.

Are you Ready to be Your Organization's Solar Hero?

Between saving money on energy costs and taking an environment leadership position in your industry, there are many reason to initiate a solar project. Every solar project needs a Solar Champion inside the organization to orchestrate the decisions, planning, implementation and sharing of information.

SunPower is here to help you lead and succeed as the solar hero of your organization.

If you are interested in exploring a solar project for your organization, SunPower can help. We have over two decades of solar experience and we will arm you with every tool you need to successfully lead your organization to a solar future. We can provide you with a financial analysis, a site analysis, internal educational tools, financing options, and a host of other tools, support, and consulting that will allow you to drive your project to a successful completion.

For more information, [register today to see if you qualify for a free site assessment with SunPower.](#)