SolarWorld Commercial Solutions

Powering American business and industry for more than 35 years

SOLARWORLD

solarworld.com

Welcome to SolarWorld

America's Authority on Solar™ — for more than 38 years.

With roots in the United States that date back to 1975, SolarWorld continues to serve as a leading visionary for the modern solar industry. Creating and delivering clean, cost-effective solar power is our top priority—not a side project to other business interests.

Solar is what we do, and we do it better than anyone else.

Today, at our manufacturing facility in Hillsboro, Oregon, we sustainably produce solar cells and assemble solar panels. Our state-of-the-art facility is fully automated, boasts 500 megawatts of cell capacity and 350 of module capacity, and embodies decades of proven solar experience.

At the same time, our sales, marketing, customer service and engineering teams are dedicated to supporting the needs of our customers. Together, we innovate and champion solar to homes, businesses and government organizations nationwide.

At SolarWorld, we believe.

We believe that all solar is not created equal.

We believe in manufacturing in the markets we serve.

We believe in leading a sustainable future.

We believe that a solar world is a better world.

America's solar manufacturer

For more than 38 years, SolarWorld has stood alone as the largest solar manufacturer in the U.S. Every day, we work to create American jobs, support the communities we serve, make the Earth a better place and provide relief from rising energy costs.

In 2013 alone, SolarWorld produced **more crystalline silicon solar cells than all other U.S. solar companies combined**. In fact, our factory in Oregon has the capacity to produce a solar panel every 23 seconds.

- Since 2010, SolarWorld has purchased nearly **$1 billion of goods and services**, including equipment, supplies, services, parts and raw materials from 47 states and DC.
- We employ about **700 Americans** in our U.S. manufacturing headquarters in Hillsboro, Oregon.
- We are **financially strong**, building on more than 38 years of proven industry leadership and success to ensure a strong future.
- An **innovator and leader**, SolarWorld is responsible for many of the solar industry's most important firsts, as shown below:

Industry Firsts

Founded in U.S. as Solar Technology International

1975

First to produce 1 MW in a year

1980

First 1 MW grid-tied system & first UL listing on solar panels

1982

First 25-year stepped warranty

1997

First plus-sorted solar modules

2008

First 25-year linear warranty

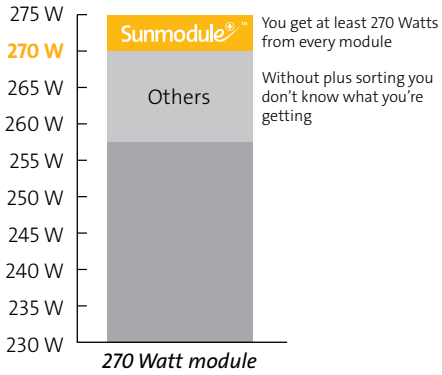
2009

Industry-leading quality

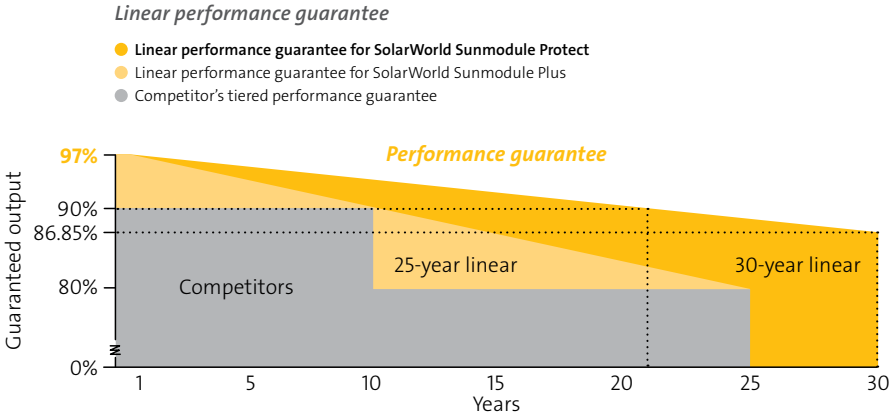
SolarWorld's Sunmodule solar panels are recognized as the industry standard in quality. We stringently control the entire manufacturing process, ensuring high performance in each and every panel.

- Every Sunmodule solar panel undergoes quality checks during every second of the manufacturing process, **guaranteeing exceptional power performance for at least the next 25 years.**
- We have **never had a product recalled** in our entire history.
- We flash-test then plus-sort our solar panels, which is a fancy way of saying we do everything we can to **ensure the greatest energy yield,** delivering more power to you.
- SolarWorld has been **ISO 9001 certified** for more than 10 years, which means we've been officially recognized for our quality management for a long time now.

Plus-Sorting



25-Year and 30-Year Linear Warranties



A passion for the environment, a commitment to community

Our commitment to sustainability goes deeper than our products. It starts with how we manufacture our products, how we treat our employees and what materials we choose, then extends outward to the communities we serve.

We believe that sustainability begins on the inside. We are proud to perform award-winning, eco-friendly practices all the way through our production process, from raw material procurement to the packaging of our finished products.

- SolarWorld is a **Green Brands certificate winner** for 2012/2013. The Green Brands certificate is presented exclusively to brands with a **proven track record of environmentally sustainable actions** both inside and outside the company.
- We have been **certified for our environmental management** since 2010 (ISO 14001).
- We participate in the Carbon Disclosure Project with our goal to **reduce our carbon emissions by 8%** p.a. in CO_2e/Wp.
- We have a commitment to the Global Reporting Initiative.

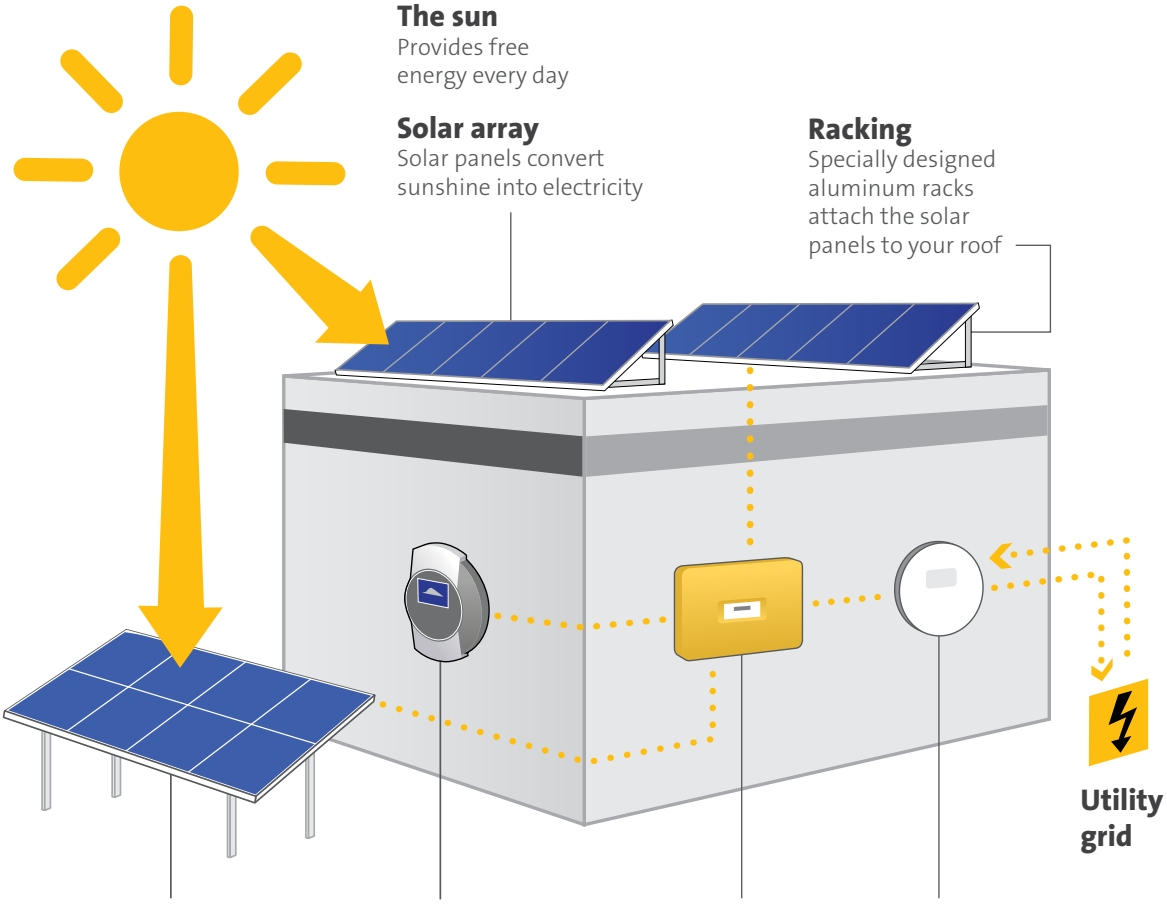
At the same time, we strive to give back to society through community programs, including Solar2Schools and Solar2World.

- Our **Solar2Schools** initiative brings solar to our youth, giving them a firsthand opportunity to learn about renewable energies.
- Our **Solar2World** initiative brings solar to those who otherwise may be without electricity
- Our partnership with **Water Missions International** brings clean, safe water to remote villages throughout the world.

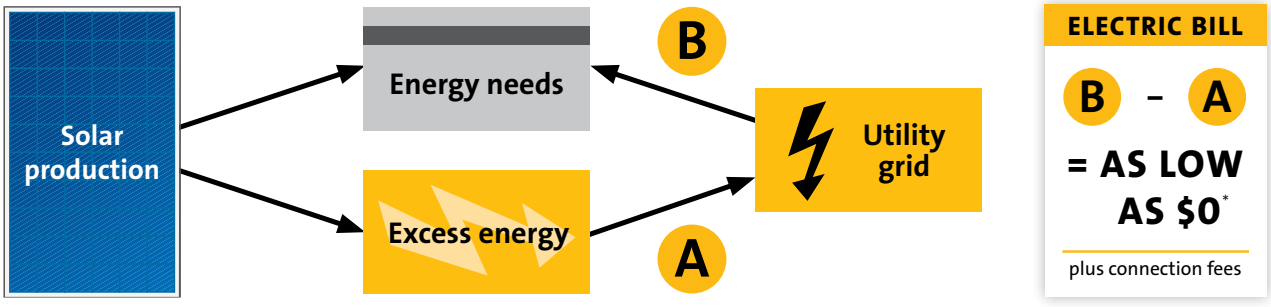
Solar2Schools

Solar2World

How solar works



Net metering



* Not all systems achieve 100% energy bill reduction.

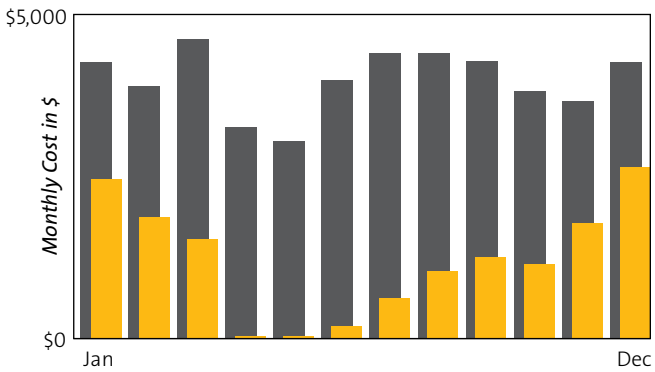
Great for your bottom line. Great for the planet.

Solar can dramatically reduce your operating costs by protecting your business from ever-increasing energy rates, all while decreasing your carbon footprint.

- Solar systems have no moving parts and require minimal operation and maintenance (O&M).
- Our 25-year warranty leaves you worry-free.
- Many businesses achieve 15-25% in after-tax returns, generating thousands of dollars in savings.
- Government incentives can cut 30% or more of costs.
- Lease options are available to avoid upfront costs.
- Solar significantly reduces your utility operating costs.
- Solar protects your company from escalating energy bills and costly peak demand rates.
- Meet government-mandated greenhouse gas emission targets.
- Promote your company as a green business.

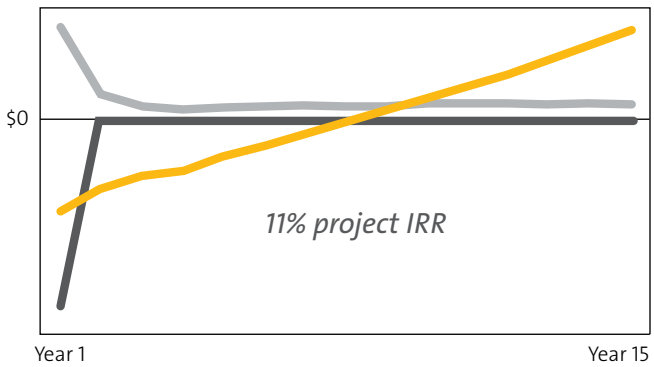
Monthly electricity bill savings

● Before solar
● With solar bill reduced by 72%



Internal rate of return (IRR)

● Cash outflow ● Cash inflow
● Cumulative cash flow



Charts are samples from real installations. Your results may vary.

University of Central Florida • Orlando, Florida • 100 kW

All solar panel manufacturers are not created equal

At first glance, solar panels may all look the same, but they are not created equal. Maximize your return on investment by examining key factors to ensure worry-free performance for at least the next 25 years.

Choose yield over efficiency

Many manufacturers are touting efficiency (rated power per square foot) as the most important feature of a solar panel. However, focusing only on efficiency can reduce its long-term performance, yielding less energy over the life of your system. These "efficient" panels often crowd the solar cells together and up against the frame. This can lead to shading from mounting components, excess accumulation of dirt over the cells, and reduced potential for light capture and energy production.

The goal is to pay for decades of energy produced in a natural environment. So be sure to judge your purchase decision on real-life performance—not how much power a panel can produce in optimal laboratory conditions.

Choose a proven technology

Two main types of solar panels are currently available on the market: crystalline silicon, like SolarWorld panels, and thin-film. Crystalline silicon panels have a significantly higher energy yield than thin-film panels using the same area. Unlike thin-film, crystalline solar panels have demonstrated superior real-life performance over three decades, making them the preferred technology of choice for developers, utilities, government and business.

Choose an experienced manufacturer

There are hundreds of young start-up solar companies today, and it's tough to know which to do business with. Given that a solar module can last for decades, be sure to select a manufacturer you are confident will be around to honor warranties as well as service commitments.

Sunmodule Protect *Sunmodule Plus* *Sunmodule Plus Black* *Sunmodule Pro-Series*

Sunmodule®

SolarWorld's Sunmodule solar panels are designed, tested, and manufactured with attention to every detail so you benefit from maximum energy output.

Designed for the real world

In the real world, it rains, it snows and the wind blows. Our panel design is scientifically configured through testing to **increase performance during decades of exposure to real-world conditions**. This is exactly why our solar panels are actively converting sunlight to energy for organizations all over the world—on farms, in parking lots and even national parks. Regardless of your project needs, SolarWorld has a module to meet them—from our Pro-Series 60-cell or 72-cell all the way to our Sunmodule Protect, glass-on-glass modules.

Made from the highest quality materials

Solar cells are the engines that power solar panels, which is why we don't trust anyone else to make them for us. To guarantee peak performance and reliability, we begin by sourcing our own raw materials—and very few suppliers are able to meet our strict standards—then **we manufacture our own solar cells right here in the U.S.**

Call us control freaks, but our proprietary components and processes consistently exceed industry standards. And to be true to our belief in American manufacturing, we source as many of these components in the U.S. as we can.

A promise you can believe in

Many companies claim to have higher power solar panels, yet they are rarely available to the average homeowner. With the capacity to produce more than 500 MWs of our high-powered cells and assemble more than 350 MWs of our high-quality panels, we know we can deliver what we promise.


Jivani Gas Station • Harrisburg, Pennsylvania


John F. Martin & Sons Farm • Stevens, Pennsylvania


Orange County Convention Center • Orlando, Florida


Cincinnati Zoo • Cincinnati, Ohio

Harnessing maximum power from the sun

Choosing Sunmodule panels is a great first step to creating a powerful solar system. Now the system needs to be placed in the right location to unleash its full potential.

A thorough site assessment helps determine how to best utilize your available space—including empty roofs, open fields, parking lots or any combination.

Rooftop systems

Transform your empty rooftop into a solar powerhouse. In addition to lowering your electrical bill, rooftop solar systems cool your buildings by blocking the sun's heat, reducing the need for air conditioning.

Ballasted rooftop

Ideal for flat rooftops without significant weight-bearing issues, a ballasted solar system angles the panels for optimal solar production with little or no roof penetration required.

Penetrated rooftop

If your roof is sloped, a penetrated roof system is your best option. A properly installed penetrated rooftop system will maintain all of your roof's pre-solar integrity while optimizing solar performance.

Ground systems

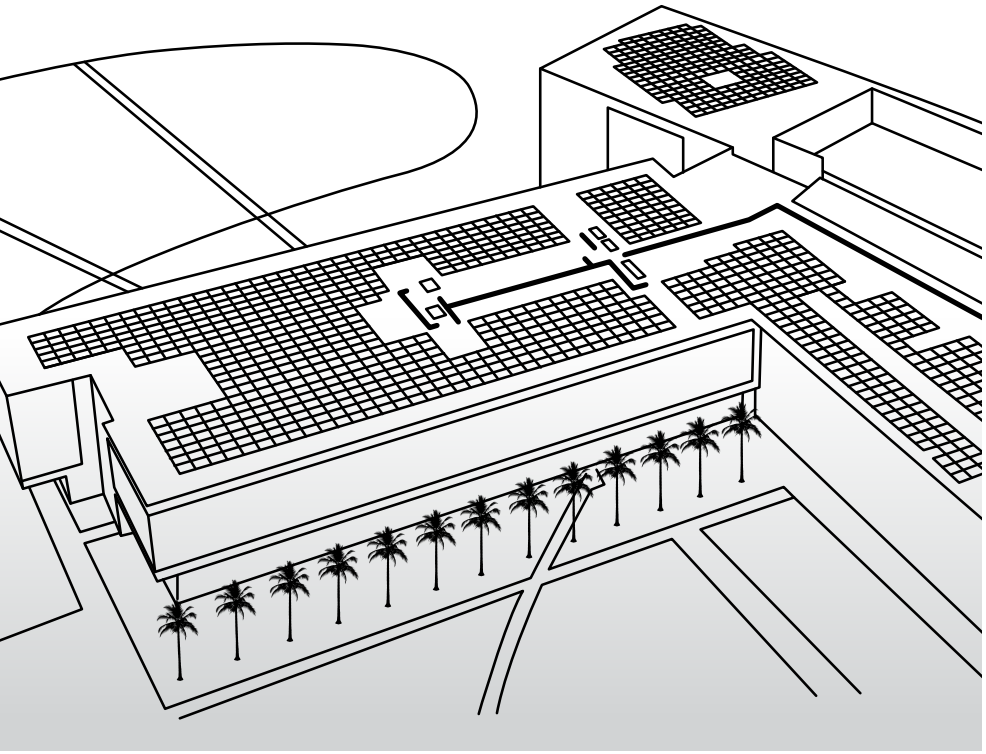
Convert open land and parking lots into power generators with a ground-mounted solar system.

Open land ground mount

Utilize open square footage to generate power for nearby buildings and equipment. A ground mount with battery storage can bring power to areas that were previously "off the grid." Add a tracker that follows the sun throughout the day to increase production.

Carports

A solar shading structure provides a dual benefit of energy generation and vehicle-cooling shade. Add optional charging stations for a fleet of electric vehicles. The solar system will help offset new EV energy loads.



Designing and engineering your system

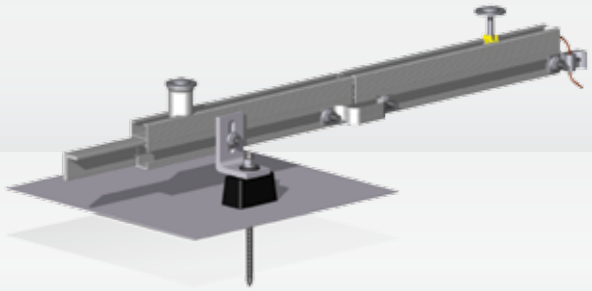
Once you have determined the location of your system, we will create a design that best meets your financial and environmental objectives. The system design analysis will help crystallize your solar vision, including the many benefits your organization will soon enjoy.

High-performance designs

By working closely with SolarWorld's design team, your system is guaranteed to be optimized for maximum performance and financial return. With decades of experience developing installations of all sizes throughout the Americas, you can trust that we will not only create a solution that fits your needs, but your system will be built with compatible high-quality components as well.

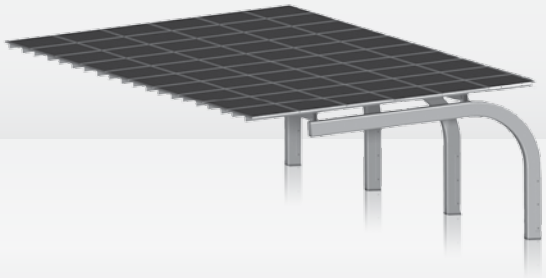
We also have the expert capabilities to handle all of the engineering, procurement and construction phases of a solar system. In fact, we have been succeeding in these areas longer than most solar companies have been in business. Along with our partners, we continue to be trusted by the nation's largest property owners, the nation's largest utilities, and even the headquarters of one of the world's largest institutions.

Low-slope roof mount



Sunfix plus racking

Sunfix ground mount



Carport

Selecting the highest quality components

SolarWorld is more than just a solar panel manufacturer. Our in-house product engineers develop SolarWorld Sunfix mounting solutions to maximize power performance and meet your unique needs. We also partner with other solar-industry leaders – like SMA, Power-One, Enphase and PanelClaw – to provide our customers best-in-class solar components from racking to inverters and monitoring.

PanelClaw low-slope roof mount

SolarWorld Sunmodule solar panels paired with American-made PanelClaw Kodiak Bear® ballasted mounting product create an ideal solution for installing solar on low-slope commercial rooftops. Extensive factory pre-assembly and only three major components lend to faster installation with fewer parts. An innovative ballast block simplifies design and reduces overall system cost.

SolarWorld Sunfix® ground mount

SolarWorld's American-made Sunfix ground mount is the ideal solution for installing Sunmodule panels on almost any landscape, and requires minimal grading and land preparation. Following the contours of the land, the Sunfix ground mount creates a beautiful and productive solar system. Multiple options for securing to the ground are available depending on the specific needs of your location.

SolarWorld Sunfix® plus racking

Designed by SolarWorld for easy installation and maximum solar performance, American-made Sunfix plus ensures your system will remain securely in place during its entire life. Sunfix plus can be used on flat or angled rooftops, and is secured by bolting into structural beams while maintaining the integrity of your roof. A properly installed system is guaranteed to keep your roof as sound as it was prior to installation.

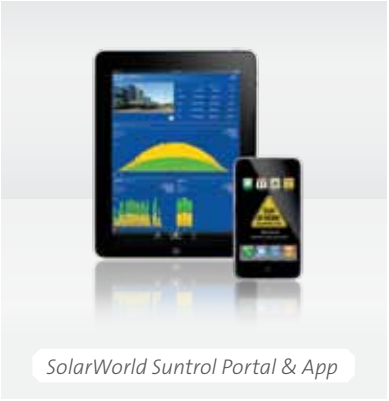
SMA Sunny Tripower TL-US

Power-One Aurora Trio

SMA WebBox

Enphase M250

Enphase M215



SolarWorld Suntrol Portal & App

Enphase Envoy

SMA Sunny Tripower TL-US

Engineered to optimize design, production, and reliability – reducing a project's levelized cost of energy and improving its financial returns.

Power-One Aurora Trio

The TRIO is a powerful, flexible and dependable three-phase string inverter with innovative features to lower the system's levelized cost of energy and improve the return on investment on commercial solar installations.

Enphase M250 & Enphase M215

The Enphase M250 Microinverter delivers increased energy harvest and reduces design and installation complexity with its all-AC approach. With the M250, the DC circuit is isolated and insulated from ground, so no Ground Electrode Conductor (GEC) is required for the microinverter.

The M215 Microinverter is a powerful and efficient grid-tied microinverter. It installs quickly and easily and works with both three-phase 208 V AC or single-phase 240 V AC services in North America.

Suntrol Portal & Suntrol App

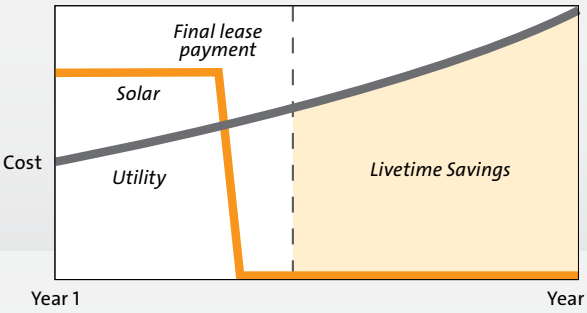
With the Suntrol Internet Portal and App, it's easy to keep an eye on the current output of your solar power system and regularly monitor its performance—whether you are in the office or on-the-go. Easily view up-to-date system information from any smart phone, tablet or computer, then share your latest savings with others.

SMA WebBox

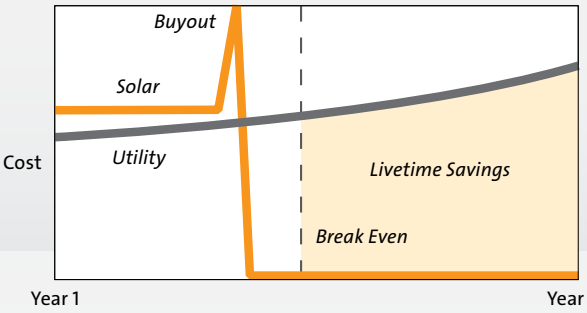
The Sunny WebBox is the ideal monitoring solution for large solar plants. It receives and stores current measurement values and transmits data via Bluetooth® or RS485, keeping you informed of system performance 24 hours per day.

Enphase Envoy

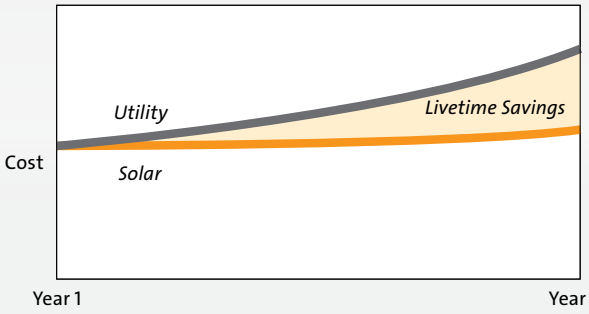
The Enphase Envoy Communications Gateway is the networking hub for the Enphase Microinverter System. System owners can easily check the status of their solar system using the Envoy's LCD display or they can get more detailed information through Enlighten, Enphase's web-based monitoring and analysis software, included with purchase of Envoy.



Municipal Lease



Operational Lease



Power Purchase Agreement

Financing your investment

There are a variety of convenient financing options to make it easy to go solar. Pay cash, secure your own financing or take advantage of our financial solutions.

Capital lease

With a capital lease, you can spread your costs for a solar power system across easy to manage installments, just like a loan or mortgage – but with no money up front!

- No initial investment required
- Lease terms can be up to 10 years, and interest rates are determined by customer credit and project size

Municipal lease

Municipal and government organizations can take advantage of a municiple lease, which offers the LOWEST interest rate of all solar financing options.

- Lease terms of up to 15 years
- Buyout at end of term

Operational lease

An operational lease gives you the option of adding solar with low monthly payments. Much like an auto lease, an operational lease allows you to purchase your solar system at fair market value when your lease ends.

- No initial investment required
- Tax benefits factored into low monthly payments

Power Purchase Agreement (PPA)

A solar PPA can enable you to have a solar system while minimizing cash flow impact and allow for a fair market buy out at the end of the term. The PPA provider installs, maintains, and operates the solar system – you only pay for the power that is generated.

- No upfront investment; 20-year term typcial
- The PPA provider monetizes all tax benefits and incentives, and incorporates them into a lower electricity rate

SolarWorld is not a direct lender or investor, and partners with third party institutions to provide financing. All financing based on approved customer credit. The above graphs are for demonstration purposes only; actual savings may be significantly better or worse than depicted. Contact a SolarWorld representative for current options.

Installing your system

SolarWorld solar systems have an expected lifespan of at least 25 years, which means proper installation is critical. When you choose a SolarWorld-backed installer, you know they've been properly vetted to complete a quality installation.

National Installer Network

SolarWorld partners with the best and most experienced installers to ensure the highest quality installations. Our network spans the Americas to ensure a worry-free install wherever you need it.

Experience

Our installation partners are among the most professional and experienced in the industry. Combined with our extensive history of proven solar success, rest assured your system will be optimally installed to last.

Factory trained & audited

Choosing an installation partner is a job we take seriously. The SolarWorld Authorized Installer program involves a thorough review of each contractor's business and installation practices. Partners are factory-trained in safety and best installation practices, as well as routinely audited, to ensure they meet and exceed our high standards.

Professional business practices

SolarWorld Authorized Installers also exercise professional business practices, and are required to undergo background checks and maintain positive customer reviews.

SOLARWORLD
Authorized Installer

Small commercial

VENTURA COMMERCIAL SQUARE
Ventura, California · **74 kW**

More than 70% of the building's energy usage is offset by this SolarWorld system. With an estimated annual production of approximately 110,000 kWh, the system will reduce emissions by 2,227 tons of CO_2 over 25 years or the equivalent of 7,246,062 miles not driven or planting 3.82 acres of trees.

Large commercial

ORANGE COUNTY CONVENTION CENTER
Orlando, Florida · **1 MW**

This installation features a 1 megawatt rooftop system that is the largest of its type in the southeastern U.S. Energy production during the first 12 months of operation exceeded projections by 18.4%.

SolarWorld Sunmodules used on all case studies. Installations performed by various SolarWorld partners.

Retail

KIMCO WILLOWBROOK PLAZA

Wayne, New Jersey · **347.8 kW**

Kimco, owner and operator of North America's largest portfolio of neighborhood and community shopping centers, has made on-site energy production a corporate priority. This shopping center's system supplies more than 22% of its power needs.

Manufacturing

PLANTRONICS

Santa Cruz, California · **608 kW**

Considered to be one of the most aesthetically pleasing uses of solar in the nation, Plantronics' 488 kW parking lot and 120 kW rooftop installations unite to provide more than 80% of the facility's energy needs. The carports are curved for visual appeal and designed to flow into the building's architecture.

Cold storage

AVIDAN MANAGEMENT

Edison, New Jersey · **4.3 MW**

At the time of completion, the system was the largest rooftop solar installation in the U.S. These SolarWorld solar panels produce enough energy to meet more than half of the electrical power needs of the building's 17 commercial tenants, including a large refrigerated frozen warehouse and a food distributor.

Agriculture

CASS WINERY

Paso Robles, California · **45 kW**

Cass Vineyards and Winery offers quiet serenity for wine lovers and an ideal locale for cultivating wine grapes. The winery and tasting room are 100% solar powered, making this small business a net contributor to the electrical grid.

Municipal

CINCINNATI ZOO
Cincinnati, Ohio · **1.6 MW**

The largest publicly accessible solar system in the U.S., this parking lot canopy structure covers more than 800 vehicles. The solar panels convert sunlight into clean energy, providing approximately 20 percent of the zoo's energy needs. During the sunniest days, the system produces more than the zoo's electrical needs, sending energy back into the grid.

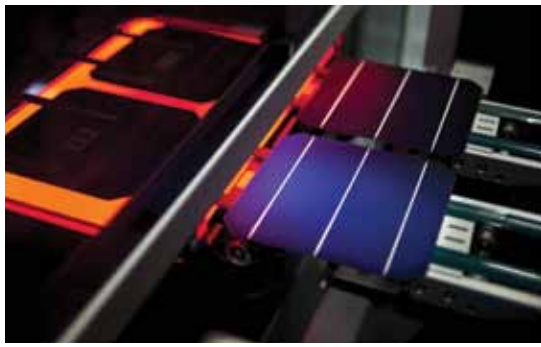
Education

UNIVERSITY OF CENTRAL FLORIDA
Orlando, Florida · **100 kW**

Located in the second most trafficked area of one of the nation's largest universities, this system is seen by thousands each week. It produces enough energy to power the nearby parking structure.

America's Authority on Solar™


SolarWorld factory – Hillsboro, Oregon




Yosemite National Park • 672 kW


Pearl Harbor • 2.4 MW


Cincinnati Zoo • 1.6 MW

SolarWorld Americas
25300 NW Evergreen Road
Hillsboro, OR 97124

805-388-6590 | solarworld.com

SOLARWORLD

SW-02-6073US 02-2014