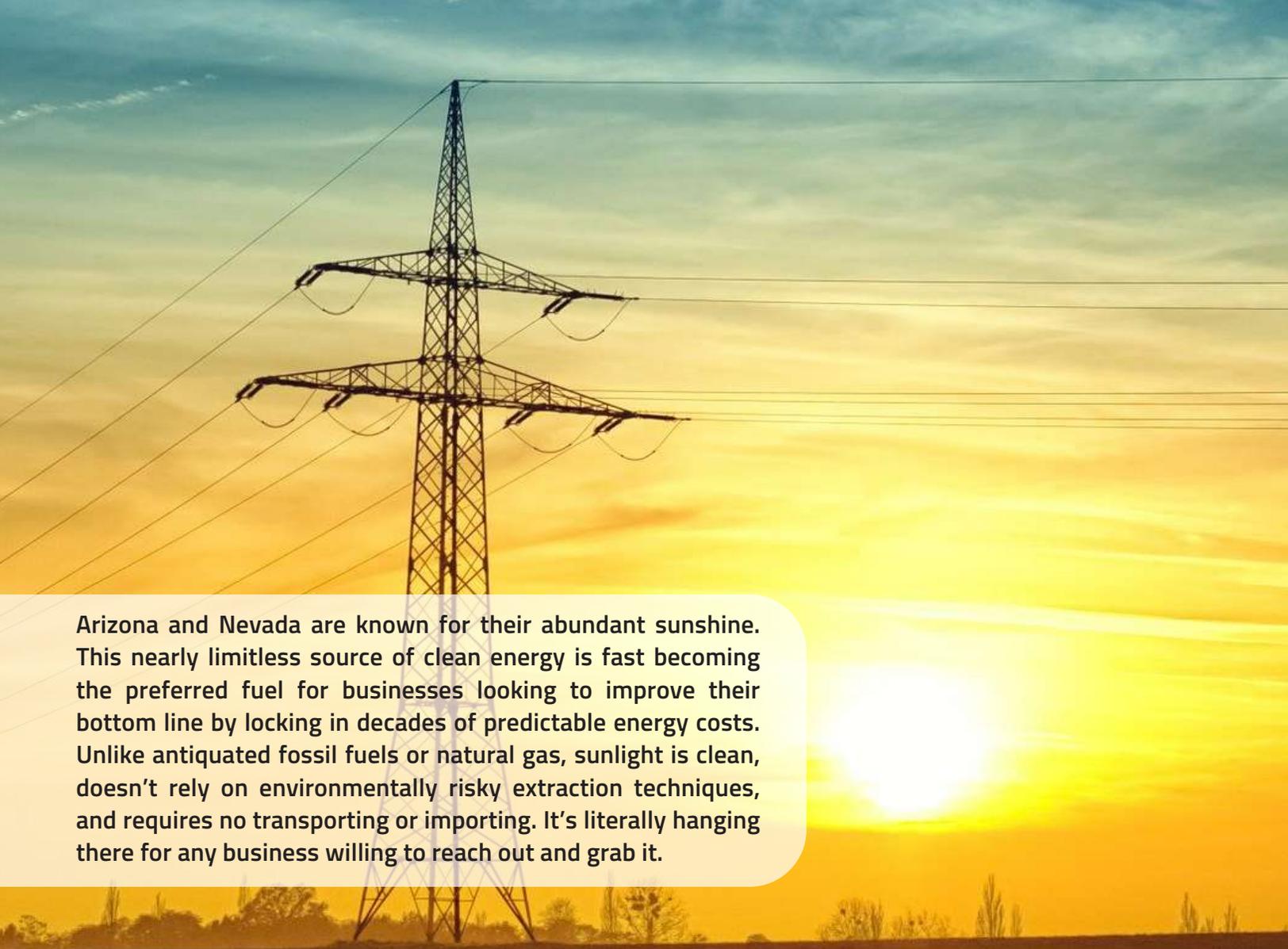


SUN VALLEY SOLAR  
SOLUTIONS®

# Is Solar Right For Your Organization?

AZ ROC: (CR11) #270331  
NV ROC: (C2) #0082022



Arizona and Nevada are known for their abundant sunshine. This nearly limitless source of clean energy is fast becoming the preferred fuel for businesses looking to improve their bottom line by locking in decades of predictable energy costs. Unlike antiquated fossil fuels or natural gas, sunlight is clean, doesn't rely on environmentally risky extraction techniques, and requires no transporting or importing. It's literally hanging there for any business willing to reach out and grab it.

## Introduction

As solar technology continues to become more affordable, making an investment in a commercial solar energy system is becoming less of an option and more of a 'no brainer.' Without continuous fuel costs, the capital costs become the determining factor for a financial justification. Over the last decade, these costs have increased dramatically in favor of the buyer. As a result, a solar energy system purchase not only pays for itself, but it gives you the chance to untether your business from its utility dependency and lock-in decades of predictable energy expenses.

If your company's mission is to find a compelling way to foster strong community relationships while also unburdening your business from unpredictable and volatile operating expenses, read on to find out how solar can light the way.

Saving  
Money

Break Your Utility  
Dependence

Compelling  
Investment  
Returns

# In this Guide, We Cover



Becoming an energy maker and not solely a buyer. Giving your company greater control over your long-term energy costs and freeing your bottom line from the utility monopoly.



Adding battery storage for extra flexibility and energy cost control. You choose when to use it rather than sending it back to the utility for an ever decreasing return.



The proven and positive impact on reputation and environmental image.



Calculating the bottom line impact. You not only lock down more than 30 years of predictable electricity costs, but the more solar energy you generate, the lower your lifetime expenses.



Adding solar adds value to your property.

You may have wondered if solar energy production is right for your organization. How does a commercial solar system pay off for a non-profit or for a factory, office building, hotel, dealership, or healthcare facility? Read on. This guide will walk you through the steps to determine if this type of investment is right for you.

# How Solar Saves

## Integrating Solar Energy into Your Business

On average, Arizona and Nevada enjoy nearly year-round sunshine. That's enough free energy to produce significantly greater levels of electricity than practically any other state and region in North America. The primary challenge to designers is finding the right solution to best leverage incentives and detailed utility rate plans while maintaining the best value.

### **What to know about solar power:**

The energy produced by your solar energy system is the same quality as that provided by your utility, although it's much cleaner due to its sustainable origins. Other than that, your kWh is no different than their kWh. In fact, more and more electricity sold by utilities is produced by their own solar energy systems. Utilities understand the long-term value of low-cost, abundant solar energy.

### **A standard solar energy system changes two main things on your utility bill:**

- It reduces your daily peak energy usage in most cases (the expensive stuff).
- It reduces the net amount of energy you purchase.

A standard system may be sized to generate more than you ordinarily use at the highest generating point of the day – when the sun is overhead and bright. In both Arizona and Nevada, most utilities offer plans to bank excess energy, generally referred to as net metering. If your utility does not offer net metering, then a smaller system, or a system paired with energy storage is the best option.



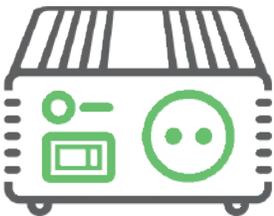


## The Basic Hardware

Beginning at your connection to the utility, when you install solar, the meter is replaced to allow for full accounting of your buying and storage/selling of power. Your new meter runs both forward and backward. Every unit of energy you buy and every unit of energy you feed back into the grid is recorded and reported to both you and the utility.

At the other end of the system, solar panels are the only element that is typically visible. A careful design balances aesthetics with the appropriate module manufacturers to meet your financial goals. Only reputable products with a proven track record that perform at peak efficiency for many decades should be used. 25-year linear warranties show that better manufacturers will back up their commitment to reliable production.

**In between, sophisticated power management components are needed to generate usable power:**

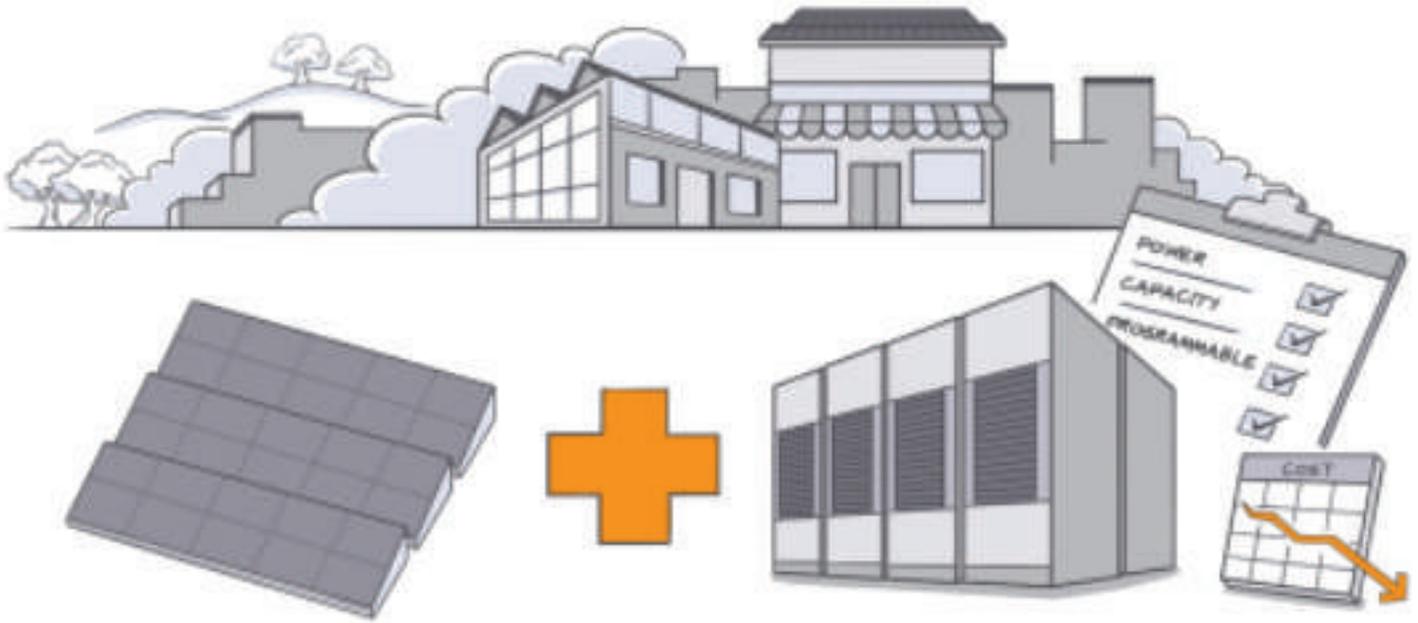


**1) Inverters convert the DC energy from the solar panel photochemical reactions to AC energy used by every business.**



**2) Systems from reputable providers should also include monitoring systems that performance and ensure that all components are functioning to maximum efficiency.**

The integration and interconnection of these components requires a good deal of engineering expertise. Not all panels and power management systems are perfectly suited to work together. They may connect and mate, but they may not offer the most efficient operation over a full range of conditions. The ability to maximize production across full sun, as well as when the sun is blocked by weather or debris, is vital to get the best return on your investment. This is particularly important in extreme desert climates like Arizona and Nevada where local expertise can be the difference between a costly mistake or making informed product combinations and installation decisions for maximum production and longevity.



## Adding Storage

The addition of energy storage gives you the ability to time-shift the use of any extra solar energy you generate. In a way, you become a small utility and rather than sending excess solar power back to the grid, it's stored on-site for use at a later time. Independent of how much power your solar energy system is generating, stored energy is used at any time of the day to replace energy you would otherwise purchase from your utility. Use some of your solar energy now, or some later. It's your choice. Solar with energy storage allows more energy cost control in two areas:



**1) Storage reduces on-peak rates and demand fees:** As utilities increasingly add demand-based rates that increase costs based on peak usage in short windows of time, energy storage gives you more freedom to control these peaks. In every billing cycle, your utility may charge you extra money for your highest 30-minute or 15-minute demand peak. Stored energy helps you flatten those peak periods, reducing your overall energy costs for that cycle.



**2) Storage provides emergency backup power for critical loads:** For businesses that cannot be without electricity, batteries provide a way to ride out short-term power outages, or brownouts, without worry. With proper design, solar plus storage provides uninterrupted power to your predefined critical loads. This can save money as well as inconvenience for restarts and lost up-time. For medical facilities, it can even be a life saver.

# Financing Your Investment

In recent years, options for affordable and low-cost solar financing has expanded. There are four common ways for buyers in Arizona and Nevada to acquire solar energy systems. Two methods provide full ownership benefits, while the other two provide the lowest financial burden without ownership benefits.



**CASH** - As with all cash purchases, you get immediate benefits without long term debt. With solar energy, you begin realizing savings from your first utility bill onward. Tax credits increase your early investment returns.



**LOAN OR LOC** - Loans retain your full ownership benefits while reducing your payback proportional to the interest payments.

## Zero-Out-of-Pocket: Provides Predictable Montly Payments, No Ownership



**LEASE** - You pay a predefined monthly lease payment independent of energy generated. The monthly payment is locked for the full term. At the end of the term, there is an option to purchase the system or renew the lease.



**PPA** - You pay only for the solar energy produced, not the hardware. Essentially you create your own utility by contracting with the third party solar system owner. PPA contracts lock in predictable rates without future surprises and are best suited for non-profits, municipalities, utilities and co-ops.

Financing	Up Front Costs	Cash Flow Positive	Lifetime Costs vs Returns
	↑ ↑ ↑	<b>6 YEARS</b> (DEPENDS ON SYSTEM)	↑ ↑ ↑ ↑
	↑	<b>8 YEARS</b> (DEPENDS ON SYSTEM)	↑ ↑ ↑
	<b>ZERO</b>	<b>IMMEDIATE</b>	↑ ↑
	<b>ZERO</b>	<b>IMMEDIATE</b>	↑



Sub-Zero Group, Inc. - 4MW  
Installed by Sun Valley Solar

# Understanding Associated Solar Business Drivers

A solar energy investment offers many unique benefits when compared to more traditional investment opportunities. The tangible benefits, such as cost savings and/or LEED points, are calculated and compared in different ways depending on company policy. The intangible benefits, or those that meet company objectives outside of financials, differ from company to company. Not all companies have the same financial, community, societal, or public image goals. A reputable solar installer should take all criteria and objectives into consideration when proposing a solar energy solution for your organization.

## The Intangibles

Your solar panels might be easily seen by the casual observer. But even when not, many companies chose to run campaigns to increase awareness of their solar investment and its related environmental impact. These campaigns give your company a competitive edge in the eyes of an increasingly aware public through increased stature in the community and improved environmental reputation.

Studies in the past few years indicate an overwhelming majority of voters of every stripe favor increasing renewable energy commitments. A 2016 Pew Research study indicates that as high as 83% of voters want more wind and solar to be used in their communities.

The market for college level talent is also becoming increasingly more competitive, especially for graduates in math, science, and engineering. A company with a proactive energy policy and good reputation for environmental stewardship will be more appealing to an increasingly savvy workforce. This can be a significant boom for recruiting.

## The Tangibles

When meeting with commercial clients, we generally spend the majority of the time exploring the significant financial benefits of going solar, but there are other benefits as well. For example, if your company is interested in constructing a new LEED building, solar can be a significant source of points to achieve the LEED score you desire.

There are enough differences between how you buy power and how you might produce your own power with solar that a simple comparison can get complicated. Today, numerous analysis paradigms are used to evaluate a solar investment. In our experience, the best approach is to compare the Levelized Cost of Energy (LCOE) between existing sources and a commercial solar option. This method allows for an apples to apples comparison of energy produced by many different types of renewable systems, as well as energy from older carbon based sources. We welcome the opportunity to help you with this type of review for your own business.

In general, a reputable solar partner should work closely with you and use your preferred methods to help compare and contrast the options you are considering. At a minimum, we recommend comparing all anticipated costs over a 30- 40 years, with and without solar energy. This analysis should look closely at the following factors, both with and without solar.

## Without Solar

- Anticipated future annual power cost increases using past history as an indicator. Rate increases are fairly predictable and regular. Rate decreases are extremely rare.
- Changes in anticipated energy use and demand charges at your organization.

## With Solar

- **Total purchase cost for each solar energy system option.**
- **Turn-key solutions, including all engineering, permits, materials, labor, studies, and warranty.**
- **Various incentives – tax credits, depreciation (100% bonus), utility incentives, etc.**
- **Anticipated maintenance costs over the lifecycle.**
- **Predicted power production each year and for each option.**
- **Panel degradation.**
- **Residual value, if any, at the end of the period if financed.**

A valid analysis for a quality commercial solar energy system would compare a full 30 or 40 years of costs side by side. Usually the savings over this term is an eye opener. Alternatively, we can show the cost of your solar energy as a unit figure to compare your self-generated costs with the cost you pay to the monopoly utility. This is an example of using the Levelized Cost of Energy (LCOE) method, intended to compare two different supplies on equal terms. It is possible that a properly sized commercial solar energy system could cut your unit costs up to 90% or more.

You should also consider additional opportunities for further savings. For example, modernizing your lighting and upgrading large energy users, such as air conditioning, can escalate your savings and enhance your solar investment returns. Total facility energy monitoring and control can also increase your returns.

It may be of value for you to also consider the potential property value enhancements that a solar energy system provides. One way to look at this is to consider the positive (or negative) impacts on leasing income.

### **For Arizona and Nevada, consider the following calculation:**

- Assume a threshold equity value for real estate investment to be 6%.
- Consider a commercial building that—through the addition of a solar energy system—reduces annual utility costs by \$25,000.
- To capitalize that savings at 6%, you would need to invest approximately \$420,000, or less.

**This \$420,000 value may be equated to another property cost leading to the same positive cash flow. At sale, this value may be highlighted.**

# The Importance of Your Solar Partner

In this business, experience matters! A solar energy system is a long-term performing asset designed to operate at peak efficiency for decades. Your partner should be there for the full lifespan of your investment. In addition, a good partner should understand the key factors that impact system design and performance—especially in our uniquely harsh climate. Your solar partner should also know how to help align and quantify business needs and priorities, and be appropriately conservative with Arizona and Nevada design criteria.

**When researching a commercial solar partner, look for the following characteristics.**

- 1) Experience with some of the largest Megawatt-scale projects.** While it may not apply for your company, projects at this scale are a true test of planning and execution that can bring less organized companies to their knees. Your solar partners should also have demonstrated experience with projects in your size range.
- 2) Strong supplier support and friendly pricing.** At Sun Valley Solar Solutions, for example, we are recognized by SunPower®, one of the most respected global leaders in solar innovation and sustainability for more than 30 years. Through SunPower, we are:
  - An Authorized Commercial Dealer
  - An Authorized Residential Dealer
- 3) Your solar partner should also have the ability to adjust to your culture and preferences.** Not everybody talks in the same design and financial terms.
- 4) Diverse professional capabilities.** Putting the effort into training and certification shows a dedication to perfection and a recognition from industry experts. Here's why Sun Valley Solar Solutions is one of the most qualified teams in the business:
  - NABCEP Certified PV Technical Sales Professional
  - NABCEP Certified PV Installation Professional
  - RISE CSRP Certified Solar Roofing Professional
  - Certified Envelope Professional with the Building Performance Institute
  - SRP Preferred Solar Installer
  - Arizona Registrar of Contractors - AZ ROC: (CR11) #270331
  - Nevada Registry of Contractors - NV ROC: (C2) #0082022



**Preferred Solar Installer**

Preferred Solar Installers are not affiliates or agents of SRP. SRP assumes no liability for their products or services.

Turbo Resources - 940kW  
Installed by Sun Valley Solar



Coconino County Campus - 1.2MW  
Installed by Sun Valley Solar

- 5) Diverse technical capabilities.** Not all sites are best suited for rooftop solar. You should not be forced to buy such a system when it is not the best option for your organization. Ground mounted systems open up additional design freedoms. Canopies may be another alternative to minimize disruptions to existing real estate while offering shaded parking to your employees and customers. Make sure your installer has experience and can speak to these alternatives.
- 6) Self-performing full-service operations and construction.** When the same team works together, a company can control efficiency and get consistent results. A smooth construction process is achieved with a single point of customer contact. This should be expected. A quality team of professionally trained and certified installers is key to an overall quality solar installation. This too should be demanded. Outsourcing construction allows for finger pointing, lack of accountability and long-term questions about who is responsible should something go wrong.
- 7) Community and Industry recognition.** A company should have the right priorities and focus on how they conduct business. A good sign of this comes from both customer and industry ratings and awards. At Sun Valley Solar Solutions, we are proud of our recognition. Don't take our word for it.
- Five-time Angie's List Super Service Award Winner
  - Rosie on the House Certified Partner
  - Five star customer satisfaction rating on Yelp
  - Accredited and A+ rating with the Better Business Bureau
  - #1 Residential Solar Installer, Ranking Arizona



# Prepare for the Future

In addition to locking in decades of predictable, lower energy costs, investing in a solar energy system also prepares companies and organizations for the future. While no analyst or expert can perfectly predict the future, there is plenty of past and current evidence that helps us visualize trends and patterns that will likely continue.

Solar energy adoption continues to grow. It has reached a point of being more cost competitive and generally below the cost of power from traditional energy generation across the globe. It is not a fad. Local and global companies alike are going solar. See Who Is Going Solar for more details (VI).

Electric vehicles (EV) are growing in number, while new and existing automobile manufacturers are entering the EV marketplace. Having solar powered EV charging stations is a public relations win.

Global climate changes mean Arizona and Nevada residents will increasingly need more cooling and for longer periods throughout the year. At Sun Valley Solar Solutions, we are proud to offer a way to completely “solar power” your cooling and heating system as well.

## See Who is Going Solar

### Top 10 Corporate Solar Users

1. Apple	393.2 MW	6. Google	142.9 MW
2. Amazon	249.8 MW	7. Prologis	126.3 MW
3. Target	229.7 MW	8. Kaiser Permanente	120.3 MW
4. Walmart	208.9 MW	9. Solvay	81.4 MW
5. Switch	179.0 MW	10. Fifth Third Bank	80.0 MW



All data from the SEIA 2018 Solar Means Business Report published July 2019.

Electric District 2 - 1.5MW  
Installed by Sun Valley Solar



**To learn more, or to request a  
consultation, please contact  
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