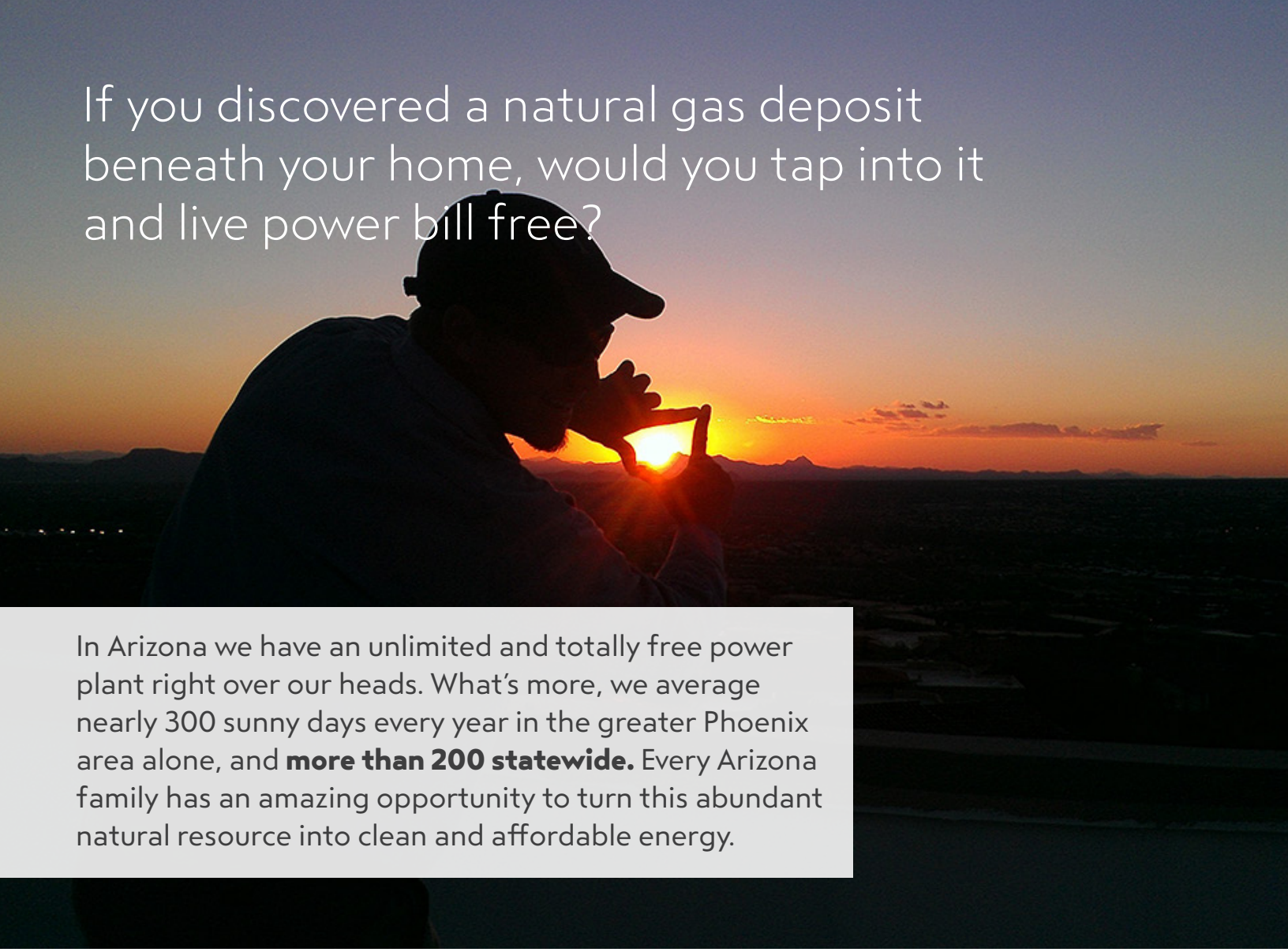
SUN VALLEY SOLAR
SOLUTIONS

Are Solar & Batteries Right for You?



If you discovered a natural gas deposit beneath your home, would you tap into it and live power bill free?

In Arizona we have an unlimited and totally free power plant right over our heads. What's more, we average nearly 300 sunny days every year in the greater Phoenix area alone, and **more than 200 statewide.** Every Arizona family has an amazing opportunity to turn this abundant natural resource into clean and affordable energy.

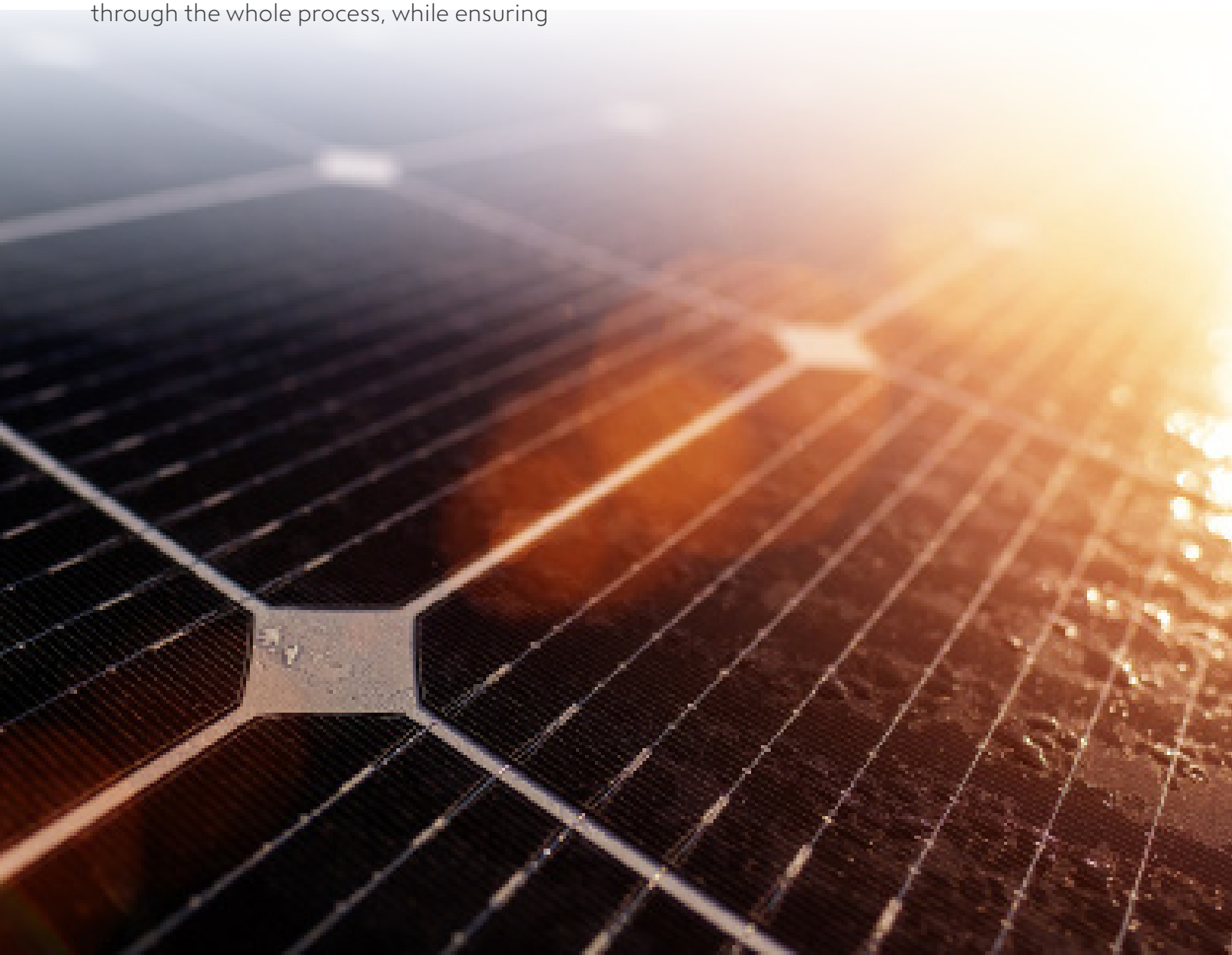
- Dramatically reduce or even eliminate your utility bill.
- Hedge against rising energy costs.
- Increase your home's value and marketability.
- Reduce your carbon footprint and be part of a cleaner tomorrow.

In Arizona the sun shines a lot, and those of us who choose to call the desert our home have a unique opportunity to cash in on this abundant natural resource.

This paper is a guide to help you better understand the many factors that make up a solar and battery purchase decision. After all, no two homes are the same, and no two families utilize electricity in exactly the same way. Plus, every utility offers different rate plans with unique variables that impact how a solar energy system is designed. It's important to carefully explore all the criteria in order to optimize a system that best addresses your unique energy profile. So please read on and enjoy these first steps toward true energy independence.

Choosing Wisely

There are many common and powerful motivations for those who choose to go solar. Long gone are the days of pure altruism. Today there are additional strong financial arguments for investing in your own electricity plant. But investors need to understand that there's much more to being satisfied with your final choice than simply finding the lowest price. Whether leasing, financing, or purchasing, it's critical to choose a trusted partner who will guide you through the whole process, while ensuring you're well supported for the entire life of your solar energy system. After all, when designed and installed properly, a solar investment will serve you well for decades. As such, your happy solar experience begins when you select a reputable partner who will be there at every step—from exploring purchase options to system design, installation, and ongoing support. Choose wisely because your first decision may just be the most important.

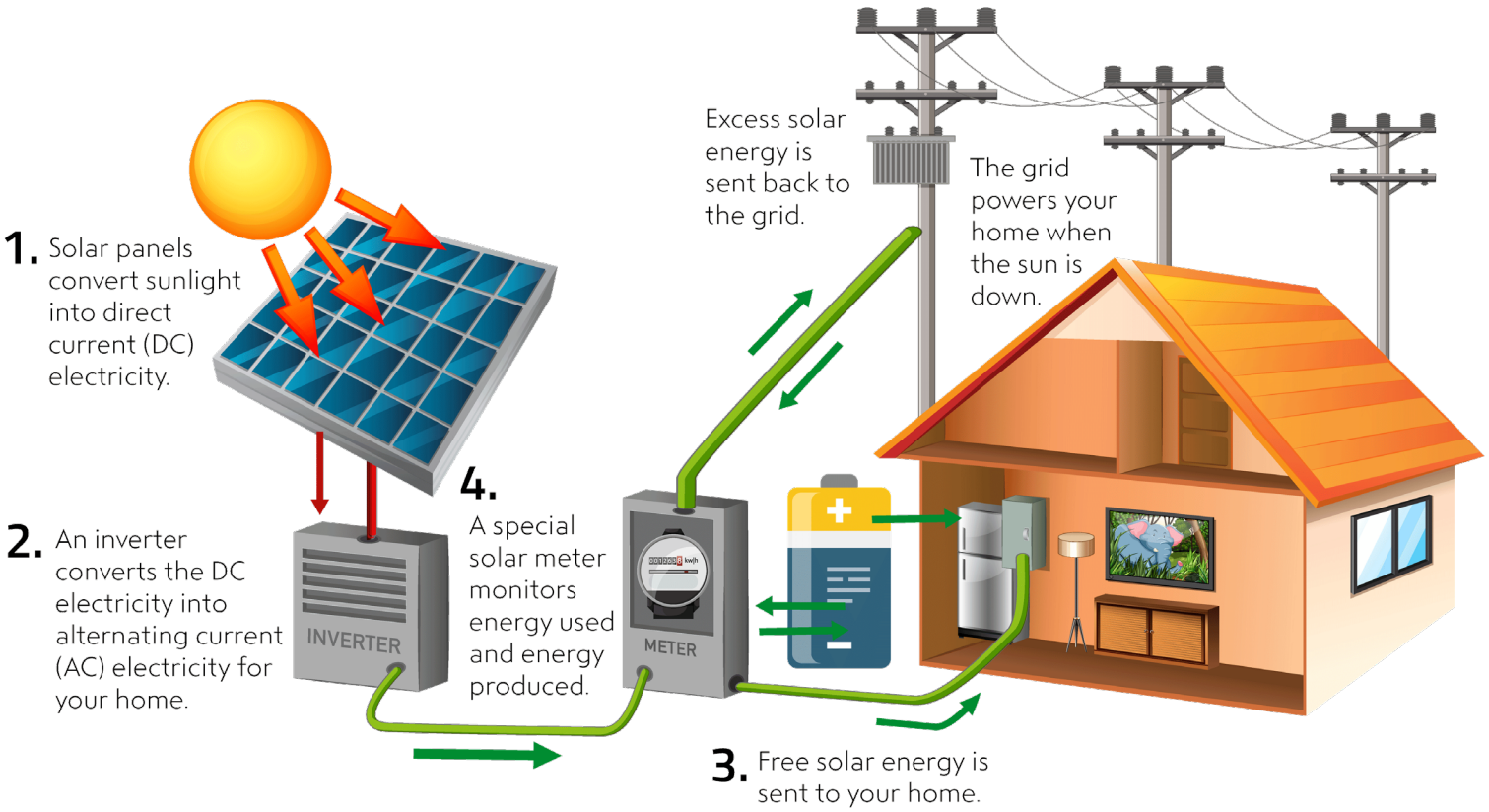


How Solar Works

To best understand the many variables that make up a solar and battery purchase decision, it's helpful to understand how the technology actually works. And while there are many different types of solar systems, the illustration below represents a common configuration that works best with most solar rate plans offered by Arizona power utilities.

When it comes to solar, understanding the solar rates offered by your local electric utility is a critical first step. In the vast majority of cases, solar and batteries work in partnership with the utility grid, which is essential to ensuring that the home is never without electricity—even at night. While there are more elaborate designs that can further reduce or even eliminate reliance on the grid entirely, those systems are generally more costly and complex.

Typical Solar + Energy Storage Configuration



3b. Optional Battery Addition

If your solar energy system includes a battery, step 3 will differ in that any excess solar energy is first sent to the battery. It is only sent to the grid once the battery is full. Excess energy stored in your battery can be used to further offset purchased utility power during evening hours or used to power critical loads during a blackout.

Find Your Motivation

Not only is each homeowner unique in their personal and lifestyle goals, practically every home and neighborhood is different in ways particular to construction and geographical location. From experience, we know there are common priorities and choices, as well as limitations that impact a homeowner's decision to go solar. While it is not possible to cover what may be important to everyone, it is reasonable to highlight some popular motivators.

Saving Money

Increasing Home Value

Return on Your Investment

While people often make purchases for comfort and a sense of well-being, certain expenditures are more likely viewed as investments. Investments need to deliver value, and often that value is measured in monetary terms. This is especially true when investing in any home improvement. A solar PV system is a uniquely rewarding type of home improvement. And the economic value is measured differently from other home investments.

Solar Financial Facts

- **Solar tax credits can offset more than 30%, but they won't last forever.** When you purchase and install a solar electric system for your home or business, you are eligible to receive the solar Investment Tax Credit (ITC), which offsets 30% of the solar system cost through a federal tax credit. The 30% ITC is available through the year 2032. In 2033 it drops to 26%. In 2032 it decreases again to 22% before ending permanently for homeowners in 2035. In addition to the federal ITC, the state of Arizona also offers a flat $1,000 tax credit for going solar.
- **Utility energy credits are like money in the bank.** Many power companies will credit customers for any excess electricity generated by their solar array. Both electricity purchased from the utility, and electricity generated by installed solar panels is measured by the same meter. The meter runs forward when being supplied by the grid, and backward when the solar PV system is generating more electricity than the homeowner is using. In utility districts that support these programs, the homeowner has an opportunity to earn energy credits for their excess power. Many Arizona utilities are slowly ramping these programs down however. Fortunately, solar customers have the option to lock-in their credit return rates for up to 10 years at the time of signing. In short, there's no better time than now to go solar.
- **From the first day you are connected and running, you will see an immediate reduction in what you need to purchase from your local utility.** You can design a system to offset some of your bill, or even generate more power than you typically need in a year.
- **To get an idea of your savings, simply look at your bill.** Any good solar consultant will begin by reviewing one year's worth of utility bills to better understand how and when your family uses electricity. From there, a solar consultant can tailor a system specific to your usage patterns. In Arizona, with all our sun, it's easy to dramatically reduce a monthly electric bill with a fully-optimized system.
- **Some Sun Valley Solar Solutions' customers see an annual savings as high as 100%!** Obviously, achieving 100% offset requires a greater up-front investment and a much more elaborate solar energy system. During initial discussions, your solar partner will help you explore all options and price points. In the end you will set your own goals and have a clear picture of the costs and ROI that best suits your objectives.

Efficiency Measures Yield Additional Savings

For those looking for maximum savings, going solar is just one piece of the efficiency puzzle. If your utility supports an energy buyback program, it's worth remembering that there are always additional opportunities for savings, and even income, by making energy conscious choices. Savings through efficiency behaviors can be significant. Whenever a solar energy system produces less power over the course of a year than the home's annual demand, every fraction of that extra energy must be purchased from the utility. Likewise, when a system generates more power than what is used in a year, the owner will earn energy credits, so long as an energy buyback is supported by the electric utility in that area. Even with solar, efficiency is always key to maximizing energy savings.

Thermal efficiency. Any time heating or cooling is required, there is a chance to save on electricity. Whether air conditioning or water heating, being conscious of your usage and keeping systems in good working order can offer significant savings.

Large demand appliances. Any chance the homeowner has to upgrade or buy energy efficient appliances, such as Energy Star rated units, there is a benefit. Refrigerators and clothes dryers offer the greatest chance to save energy.

Beyond purchases and improvements, a review of home habits helps, too. Keeping awareness high is a good idea. Open doors and excessive dryer use are just a few examples of opportunities to save. Also, being aware of your utility's on-peak and off-peak hours can help you shift your highest energy uses into more affordable timeframes.

To learn more about energy buyback programs in your area, contact your local energy utility. You can also contact Sun Valley Solar Solutions directly for the latest guidelines.

Beyond Savings → Return on Investment

For residential systems, most owners need to know the return on investment (ROI) in addition to potential savings. Many factors influence this number, but in many parts of Arizona it is common to realize an 8 to 10 year payback. After that, any electricity generated by your solar system is essentially free. Sun Valley Solar Solutions welcomes the opportunity to work with each homeowner individually to define options and evaluate returns.

The most important factors that impact your payback:

- Your total capital costs after incentives and rebates.
- The impact of any financing choices under consideration.
- Production forecasts based on system sizes considered and historical data.

We will explain in simple terms the best way to calculate your options for payback. Every contract with Sun Valley Solar Solutions includes a detailed financial analysis based on your final selections.

Solar can also add resale value to your home. Because the system's value can be quantified through billing history, and since Arizona homeowners have made solar ever more popular, it is now more simple than ever to appraise an enhanced home price. Prospective buyers are motivated by primary concerns like size, location, and amenities they may have predetermined. But once those needs are satisfied, having a reliable means to keep energy costs low gives the seller leverage. As far back as 2011, a Lawrence Berkeley National Laboratory study found that in markets with reasonable solar installation activity, home values were improved by an average of $17,000. Given that the typical installation in that study was smaller in capacity, and that solar installations have only increased since then, it's a fair assumption that solar powered home values will only continue getting better.

Good Citizenship → A Drive for Sustainability

Outside of the money matters, there are other factors a homeowner should consider for personal satisfaction:

- Be a positive neighborhood and community example.
- Leverage the freely available and unlimited energy resource and lessen the impact of national energy policies and global "fuel politics."
- Eliminate your utility's need to expand power generation.

Evaluating Your Suitability

Once a homeowner has considered the range of potential savings and their position on investment value, they should investigate the best paths to set and achieve their financial goals. There are choices and unavoidable limitations that impact the options.

The Home

The architecture of a home has a significant impact on how and where solar panels might be located. The structure must be able to handle the weight of the system through all probable weather conditions. In addition, panels have an optimum orientation for each location on earth in order to be most effective at capturing maximum sunlight. Roof configurations, whether flat or gabled, have a predictable effect on the system design choices. Here are some general rules of thumb.

- Only for purposes of making initial estimates, it is fair to assume that for every 100 square feet of surface that can readily accept panels, approximately **1 kW of capacity can be placed.** So, for the typical 5 kW installation, approximately 500 suitable square feet of space is needed.
- Generally, panels are most effective in Arizona when facing south, but east and west can be good too, depending on the home and the customer's individual energy goals. Less than ideal roofs can add to racking and installation costs or can result in lower production.
- Any feature that creates shading must be considered. Whether adjacent trees or other structures such as chimneys or roof knee-walls, there are a number of things that can impact the path between the sun and the panels as the sun moves throughout the day.
- The roof surface should be relatively new and in good condition. Removing and replacing solar panels to facilitate a roof replacement can a costly expense for homeowners. As such, Sun Valley Solar Solutions conducts a thorough roofing assessment, and makes recomendations and referrals for any necessary repairs prior to solar installation.

100 sq. ft.
of panel surface

1kW
of capacity

For the typical **5kW** installation, approximately
500 suitable **square feet** of space is needed.

Purchase or Finance

When reviewing options by size and cost, the homeowner can consider alternatives to a full cash purchase. Sun Valley Solar Solutions recommends cash purchase whenever it suits the owner, as it ensures the most favorable returns, simplifies ownership, and maximizes federal and local incentives. However, because of the recent explosion in residential solar, there are also attractive lease and loan options available.

- **Loans.** Today it is possible to finance part or all of a solar system purchase. There are a variety of secured and unsecured options available with terms of 12 to 20 years. Sun Valley Solar Solutions recommends financing only the necessary portion of the net cost after incentives in order to get the best payback. In addition to a loan, a buyer can also acquire short term financing of the credits and incentives to keep initial out of pocket expense low without long term financing.
- **Home equity financing.** Standard and special mortgages are available to homeowners who want to finance portions of their solar system costs. In one case an energy efficiency mortgage credits a home's energy efficiency in the mortgage itself. Some options are targeted to new home construction, while others may apply to existing home improvements. Your installation and financing partner can explain options that apply to each specific situation.
- **Leasing.** Many alternatives exist for leasing at a fixed rate or a rate with predefined increases. Common to most capital leases, there are options for no money down or options with down payments that help reduce monthly fees. The goal is to start saving from the first month by negotiating lease payments that are lower than current utility payments. Depending on the system output relative to usage, the leasor will gain a pretty clear picture of their future energy cost throughout the lease term. Leasing does require good credit, but it's a viable option to those who cannot afford the initial investment or cannot take full advantage of incentives. Unlike full cash purchases, loans or mortgages, leasing does not equate to ownership and usually does not give the homeowner full control over system design and operation. Leases can also add complications during the sale of a home, where separate qualifications are required for the potential home buyer to assume the

More Than Panels and Power

Saving on energy costs and deriving some personal satisfaction are usually the primary goals for homeowners in going solar. There are other minor factors that Sun Valley Solar Solutions believes a homeowner should recognize in order to boost those motivations.

Panels can provide shading to the home. Roofing surfaces are given partial relief and possible minor life-extensions. But depending on the system size relative to the total roof area, it is possible cooling demands can be measurably reduced. While it is difficult to predict up front, it can be witnessed at the meter over time.

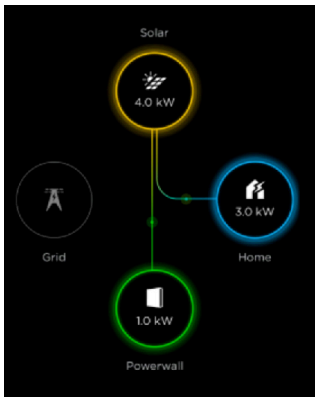
System monitoring helps in many ways. System monitoring gives homeowner and installation service partners a lot of tools to access a system remotely to ensure that it's operating correctly and at maximum efficiency. System monitoring also makes it easier for homeowners to track their energy use over time and alter their behavior to be more efficient.

Community leadership and pride is important to many. Beyond the measurable increase in property value that a solar system provides, homeowners find that being a positive example in their community helps to stimulate others into going solar and joining the modern way to power their lives. In fact, Sun Valley Solar Solutions is proud that the vast majority of our new customers come to us via referral.

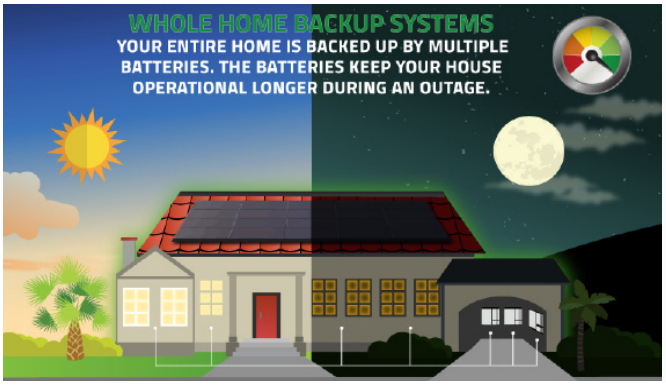
Enjoy a Self-Powered Home

By adding batteries, more of your home's electricity use is fulfilled by your solar array, further reducing your utility bill and carbon footprint.

Most residential battery systems fall into one of two categories: critical load backup or whole home backup. The first category requires dramatically less capacity and generally costs less. Let's take a closer look at both system types.



Typical Battery Systems for Arizona Homes

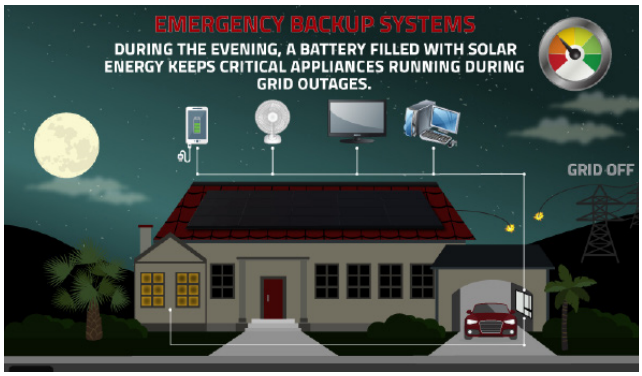


Whole Home Backup - Squashing On-Peak Utility Fees

With a whole home backup system, your battery helps to further offset your energy consumption during the most expensive on-peak utility hours. These types of systems are set to discharge their stored energy when daily electricity prices are at their highest.

Backup Loads - Security in Times of Crisis

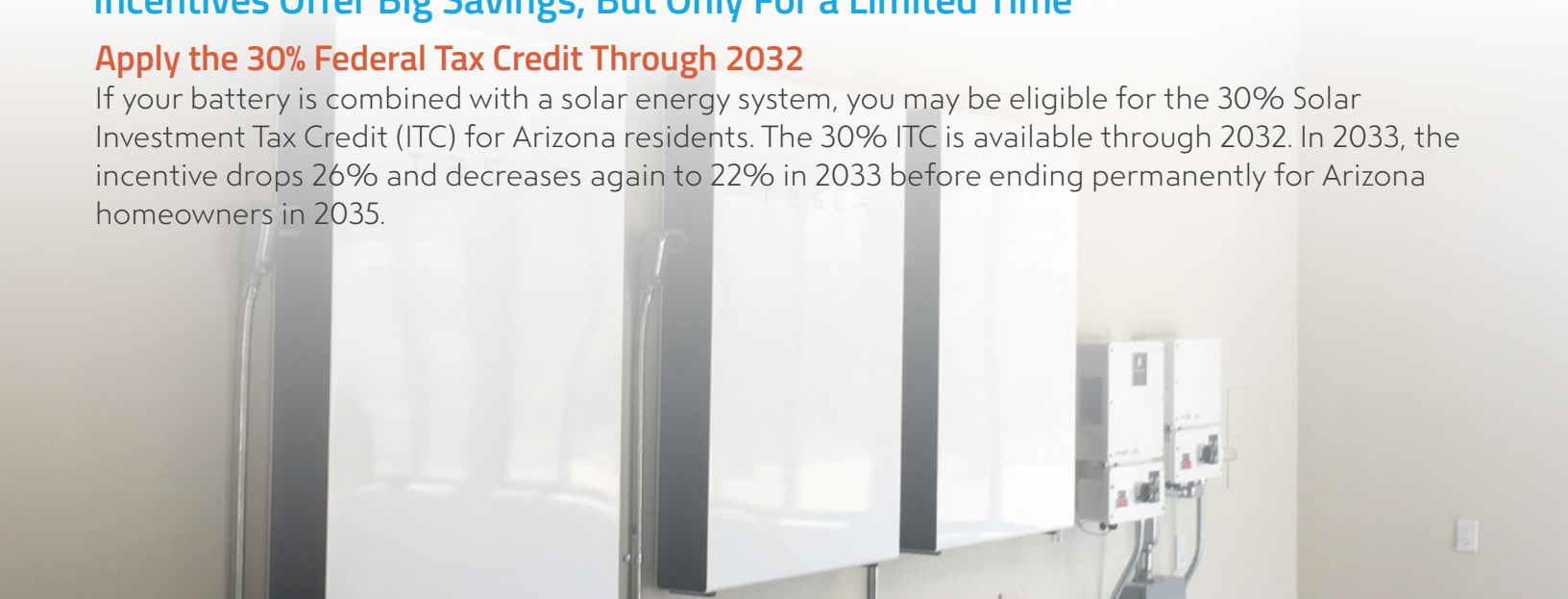
Power outages occur with greater frequency as our national grid continues to age. A battery backup system will run your most critical loads during a grid failure when your solar panels aren't producing energy, such as at night. Your panels refill the batteries during the day for discharge overnight. The cycle repeats until grid power is restored.



Incentives Offer Big Savings, But Only For a Limited Time

Apply the 30% Federal Tax Credit Through 2032

If your battery is combined with a solar energy system, you may be eligible for the 30% Solar Investment Tax Credit (ITC) for Arizona residents. The 30% ITC is available through 2032. In 2033, the incentive drops 26% and decreases again to 22% in 2033 before ending permanently for Arizona homeowners in 2035.



No Better Time Than Now

Making your own electricity is the best way to hedge against rising energy costs. And we have an unlimited, clean, and totally free energy source right over our heads. As a result, there has been an explosive increase in residential solar installations as Arizona homeowners seek to free themselves from the iron grip of public utilities. This growth has spurred aggressive competition among solar manufacturers, and the deployment of both state and federal incentive programs to help offset cost and encourage innovation. When it comes to maximizing a solar ROI, timing is everything.

Don't wait, consider this:

- Existing state and federal tax incentives can help offset more than 30% of a solar investment. These incentives are set to decrease to 26% in 2033, and again to 22% in 2034 before ending completely for homeowners in 2035.
- Panel and hardware prices have never been more competitive.
- Utilities are slowly ramping down programs that provide solar customers with energy credits for any excess electricity they send back to the grid. Fortunately, solar customers can lock-in their buyback terms for up to 10 years at the time of signing. In short, waiting too long may result in a less attractive ROI.
- The market is mature. In most cases, solar energy costs are equal to or better than utility fossil fuel generating costs—while being dramatically cleaner.
- We have streamlined the design and installation process. From home survey and permitting to utility agreements, Sun Valley Solar Solutions is well practiced at getting customers up and running as quickly as possible. State regulations are fine-tuned as well.
- Panel technology is better than ever. Material development and manufacturing improvements have reduced costs while improving efficiency well beyond where we were just a few years ago.
- There have never been as many financing options nor such favorable terms for the buyer.
- Sun Valley Solar invites you to explore your options further by contacting us for a free, no-obligation quote.

Available tax incentives can offset more than 30% of a solar purchase, but will decrease in 2033!

Sun Valley Solar Solutions

No two homes are exactly alike and no two solor buyers have the same goals. The company you choose to design and install your solar energy system should be a partner for the life of that system. From the first contact, you should feel empowered by the interest shown in making sure that you are sufficiently informed long before you are ready to sign. We take each customer's success seriously and are only satisfied when the customer is happy with the process and the results.

Anything that impacts savings needs to be explained to the level of detail that satisfies the individual. Not everyone is an accountant. But every homeowner has a right to understand all the options and factors influencing their potential costs and savings.

For every home, Sun Valley Solar Solutions conducts a thorough survey to make sure every factor that may impact design and performance is known. Although there are many common practices and systems may be similar from one home to another, there are too many pitfalls in a pre-packaged approach that many of our competitors use. The best solar energy system for you is the one designed specifically to your home and lifestyle. We take the time to explore every detail.

- Features of the building structure determine things such as maximum size, racking, wiring layout, roof penetrations, and more. The goal is to orient your panels as efficiently as possible to minimize costs and maximize performance throughout the year.
- Any physical obstacles need to be recognized and addressed prior to installation.
- In certain cases, a precise review of power quality and grid connection requirements may be needed as well.

Beyond these preliminary steps, optimum performance is achieved only when top tier hardware manufacturers are selected and best practices are used in design and installation.

Sun Valley Solar Solutions is proud that most of our new business comes via referral. We hold an A+ rating with the Better Business Bureau and have received the Angie's List Super Service award five times. We offer the industry's best panels and have been a SunPower Authorized dealer since 2011.

To learn more, or to request a quote, please contact us directly.

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