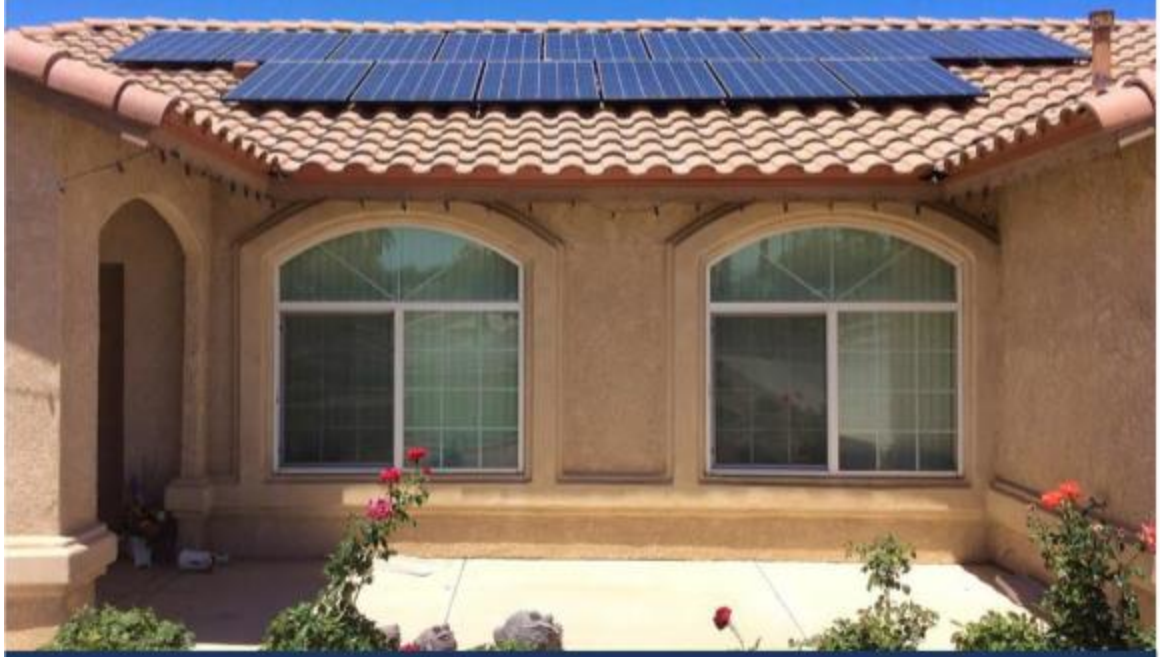
SOLAR 101

A Basic Guide to Saving Money with Solar for Your Home



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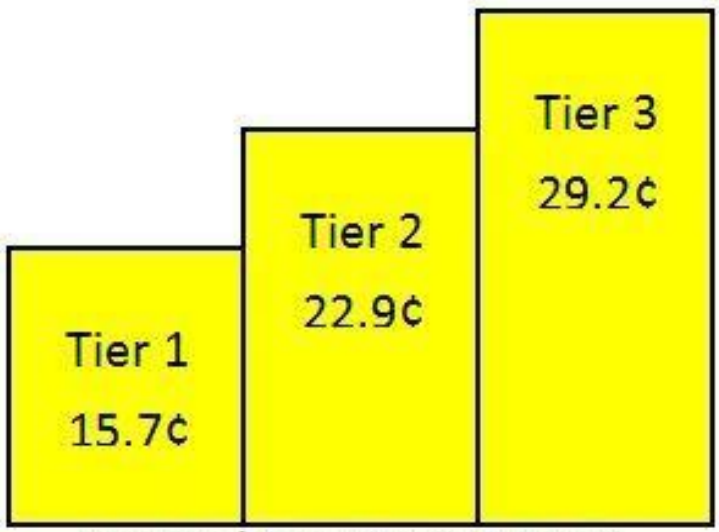
Introduction

I want to thank you and congratulate you for downloading the book, "Solar 101: A Basic Guide to Saving Money with Solar for Your Home."

This book contains proven steps and strategies on how to save money with solar for your home. The buzz is out! People all over America are adding solar to their homes. Maybe some of your family, coworkers, friends or neighbors have added solar or they are waiting for it to be installed. They seem excited about it but you wonder…is it worth it? Why should I do it? How much does it cost? Are all those ads on the radio, billboards and TV about $0 down or free solar for real?

This book will give you a brief "solar 101" so you can learn for yourself if solar is a good alternative. Consider this; the utilities keep raising their rates and customers have no control over that. When it comes right down to it, utilities are monopolies. A monopoly is a company who has no competition, so you have no other choice for your electric provider. Your home is in their territory so they are your provider. They give you a rate, and you have no choice except to pay the rate or not receive their power. People are learning that they don't have to simply accept that anymore. Solar gives the homeowner an alternative that is cheaper. Solar gives you an opportunity to be in control of your power needs.



Typical Tier Rate System

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The utilities seem to penalize you for using more electricity than a baseline amount. Have you noticed on your bill that the amount of kilowatt hours (kwh) you use each month are grouped into tiers – each tier with their own rate? The first number of kwh you use is charged at Tier 1 rates. But, once you exceed that number of kwh for the month, you start being charged in the next tier. Notice how the more power you use; the more it costs you.

There are no quantity discounts with utility companies, unlike all other forms of business that have competition for your business. In other markets, the more you buy, the cheaper per unit it costs. This is not true with utilities. Instead, the more you use, the more it costs you per kilowatt hour. Solar gives you an alternative to the price fixing by the utility.

Maybe you're tired of all the telemarketers calling you or the canvassers showing up at your door. Maybe you wish you could tell them you already have solar, or you've checked it out and decided it wasn't the right time for you, just so they would stop bugging you. But, for most people, there's something really inviting about making your own power instead of buying it from the utility.

I really hope you read this book. It is written to give you a truthful look at the value of solar, and some basic understanding of what to ask when you shop for your own solar power system.

Before we begin, answering the question about why you should go solar comes down to this. The rate utility companies charge today is high and expected to continue to rise in the future, while the cost for solar has fallen and companies have found great ways to help most homeowners go solar for cheaper electricity rates than they are presently paying. Maybe it's time you should investigate what the financial benefits might be for you.

Thanks again for downloading this book, I hope you enjoy it!

Chapter 1
How Does Solar Work?

This book is not a technical explanation about how solar works. However, for the homeowner who is curious about replacing the utility with a solar power system, a basic understanding is helpful. The bottom line is this; solar power is a cheaper alternative than power from the utility. Energy from the sun is free, does not produce carbons, and provides the same benefits as the electricity we are used to. In fact, you won't notice any difference in your home. If you didn't know you had solar, you would never know the difference.

Presently, you receive your power from the utility. It passes through a smart meter, which records how much you are receiving, and feeds your main service panel, which supplies your home through the circuit breakers.

A solar panel converts light to DC power. DC power must be converted to AC power in order to work in your home. This happens with an inverter, part of the solar system installed. The conduit which carries the power being produced, and converted to AC, runs to the main service panel which supplies electricity to your home through the same circuit breakers. When you add solar to your home, a two-way circuit breaker is added to the main service panel which allows power to flow both ways.

When it is daylight and your solar panel is producing power, the electricity from solar flows directly to power your home with whatever is needed at that moment. Quite often, your solar is producing more power than is needed in the home, and this is the best part. The excess power being generated is not lost! It flows through the two-way circuit breaker back to the utility. You can watch this happen at the meter. It goes backwards! And the best part is that the utility buys this excess power from you. They give you a credit on your bill.

When it is dark, and you need power in your home, you receive your power from the utility the same as you always have. Only now, if you have credits, you receive from your credits first before buying any power from the utility. For solar users, the utility acts as a storage bank for any power you have generated above your needs. The utility calls this net metering.

This arrangement with the utility for solar customers continues over a 12-month cycle. At the end of 12 months, you have a true-up day where you settle your account balance with the utility. If you have produced more power from your solar than you have consumed in your home, your credit is converted to cash and you receive the money. You see, they buy that power from you.

However, if your solar did not produce as much as you consumed over the 12 months, they will send you a bill for the difference. You should never be surprised for this true up day settlement, as each month on the statement you receive from the utility they declare the status of this ongoing balance. After your true up day, you start over on another 12-month cycle.

The process of converting light to electricity is not based on heat, but on daylight. One thing seems certain; the sun comes up every day. Even on cloudy days, or rainy days, or shaded locations, solar produces power. The amount of power however, depends on the intensity of the light. The more direct the sunlight, the more power is produced. That's why solar designers like myself look for the best possible location when placing panels at your home. The ideal place is a southern exposure with no shade.

One of the major reasons people go solar is because solar is always producing power for you when there is daylight. When you are away from the home and not using much electricity, your solar is still producing power the same as any other day. This means when you are away on vacation, your solar is over producing what you need, so you are building up credits with the utility. You never lose the power your solar system makes.

Another major benefit is the low cost to maintain this conversion of light to power. Your solar expense is really paying for equipment, not operation costs. There are no moving parts to oil or maintain on a schedule. Just keep the panels free of dirt and debris for top producing efficiency. It is recommended that you wash the panels a couple times a year. Accumulated dirt acts as a filter which reduces efficiency and lowers your production.

Solar panels do degrade over time. They do not break, but they do produce less power each year. It is not a lot, but light causes the solar cell to degrade over time. A typical degradation factor is .08% per year. Most solar panel manufactures offer a 25-year production warranty, and use this degradation factor to determine how much power the panel is warranted for. A typical warranty would say that on the 25th year in service, the panel will be producing at 80% output of what it was rated to produce on day 1. Panels will continue to produce power beyond their warranty, but the amount of power reduces each year.

Chapter 2
How Much Solar Do I Need?

Whenever you consider going solar you will want to know how much you should get. What is the right amount of solar? Is there an ideal system size? Let's review a few things you need to ask yourself.

How much of the power you use presently from the utility do you want to replace with solar? Are you planning to use more in the future or less? Is your family young with more children on the way? Or are you approaching empty nest and facing later seasons of life? Maybe you intend to add a room, or a pool, or Jacuzzi. Or perhaps you expect someone to move in with you, or someone to move out. Maybe you intend to buy an electric vehicle which needs charging. Any of these things can influence how much solar is the right amount for you.

The starting place for determining how much to get is by understanding how much you used over the past 12 months. Remember, when you add solar, the utility puts you on a 12-month cycle for determining how to settle your account. The best predictor of your future usage is your usage habits in the past. For example, let's say you used 12,000 kwh over the past 12 months. Unless, you expect changes in your habits, it's likely you will use a similar amount of power over the next 12 months. So, if you get a solar system that produces 12,000 kwh over 12 months, you should end the 12-month cycle with the utility at dead even. There is no excess production of power for the utility to buy from you, and no extra consumption of power you have to buy from them.

When I am asked what is the average amount of solar to get, there really isn't an average. Every person, their habits and future needs are different. One person living in a home uses a different amount of power than another person would use in the same home. So it's hard to predict how much power is needed per square foot. I have seen large homes in excess of 2,000 square feet use less power than a home of 900 square feet. The best way to size your system is by knowing how much electricity you use. Find out how many kwh of usage you had over the past 12 months, then consider if you will need more or less than this amount in the future. This will tell you what the right amount of solar is for you.

The final consideration, once you have an answer to how much you need, is how much of this kwh number do you want to replace with solar? 100%? 80%? 50%? Some people like the idea of replacing the utility by 100%. Next to off grid living, the idea of producing all your own power and not buying any power from the utility at all, is very exciting.

They see the utility as a monopoly who seems to set their own rates and policies. After all, they have no competition. They have a territory in which they are the only utility. You have no choice but to receive your power from them at their price. You don't even have the option of switching to another company if you don't like their price or service. Unlike other industries with competition, they aren't pressured to lower prices, or give quantity discounts or offer better service. That is why replacing them by 100% with solar is so attractive to many people.

Others aren't really influenced by the monopoly attitude, but are simply looking for the most savings in their electric bill. For those, you need to understand how your utility charges you for power. A common practice is called Tier Shaving. By adding a solar power system that replaces a portion of your historical usage, you shave off the highest priced tiers from the utility first. This works best when you have a limited budget to put towards solar. Even doing this is better than doing nothing at all with solar.

In every scenario I can think off, there is one thing in common. The more power you use, the more the utility charges you per kwh. The first kwh you buy costs you say 15.7¢. The last kwh you buy costs you 29.2¢. There are no quantity discounts. However, when you add solar to your home, for every kwh your solar produces, that's one less kwh you must buy from the utility.

To learn the final answer to how much you need begins with understanding how much you have used in the past, adjust that amount by a prediction of how that might change in the next 12 months and beyond, and finally by deciding how much of your bill from the utility you want to replace.

Chapter 3 How Much Does Solar Cost?

The electricity solar produces are free; it's the equipment which determines the cost. The sun shines rather you capture the energy or not. Once the equipment is paid for, there is very little maintenance costs to capture the energy from the sun. It's not unusual for a solar system owner to say that once the equipment is paid for, the power is free.

The actual cost of a solar system has come down in the past few years as technology has improved the efficiency of solar. A person could buy all the components themselves, and install them for the lowest out of pocket cost possible. There are even books on how to do this for the do-it-yourselfer. Unless you know what, you're doing, I do not recommend this. Most cities and counties require you to obtain a permit to add solar on your home. This requires a licensed engineer or electrician to draw up plans, have them stamped, then presented to the city or county building department for approval and obtaining a permit.

A better way is to choose a licensed and bonded company who specializes in solar design and installation. They should be experienced, offer multiple types of equipment options, and sensitive to your wishes. It is also best if they have great reviews from previous customers, and can provide you with timely help if there are service issues. Try Yelp.com or SolarReviews.com to get reviews on different companies in your area.

Many solar company installers will also assist you in financing options, either to purchase or lease. I will give you my thoughts about buying or leasing in the next chapter. One of the greatest challenges people face is what are my real costs with solar, and how do I know which company is giving me the best value for my payment.

There is one common thread all companies and all estimates or proposals will have. That is, what is the cost per kw of system size they are charging? Every sales representative should know the answer to this question if you ask them. They may try to avoid or justify the answer but this is the true cost you can use in making comparisons.

There are three main things to ask so that you can make the best decision.

1. What is the cost per kw of system size?
2. What amount of power will it produce?
3. What equipment are they using?

If you get to the bottom of these three questions, you will be able to compare apples to apples.

No matter which way you choose to pay for your solar system, rather a cash purchase, financing, leasing, power purchase agreement (PPA), or solar service agreement (SSA), the cost per kw of system size will give you the most reliable true cost for comparison purposes.

As of May 2016, the average price in the marketplace is $3,850 per kw system size. Some companies will offer incentives for your business such as a signing bonus or gift. Leasing companies will often reduce their cost per kw system size in exchange for your business. When in competition, companies may reduce the cost per kw system size to earn your business. After all, it is a competitive business.

The bottom line is, who offers the best price per kw of system size, for the best equipment with warranty, and the highest output of power? It is these three areas I see the most confusion for customers. That's why it is important to ask questions which will allow accurate comparisons. Let's review some basic understanding of equipment issues and output issues.

Equipment components that matter is the solar panel and the inverter. Solar panels fall in two groups depending on how they are manufactured: Monocrystalline and Polycrystalline. Monocrystalline solar panels cost more than polycrystalline for the same size. Monocrystalline panels have a higher efficiency than polycrystalline panels. In addition to having an overall better efficiency, monocrystalline panels can perform up to 10% better than polycrystalline panels in high ambient temperatures. Monocrystalline panels cost more to make, but produce more power per panel because of their higher efficiency. You should expect to pay more for a system using monocrystalline panels, just make sure you know which panel for the cost you are comparing.

Inverters fall into 2 main types: String inverter and Micro inverter. With a String inverter design, the panels are wired in a string to the inverter where the DC power is converted to AC power. The benefit is that it is a cheaper technology. The drawback is that if one panel has problems, it affects all the other panels in the string. This is like Christmas tree lights where if one bulb goes out, they all go out. Warranties on string inverters are typically 10 years.

The other type of inverter is the Micro inverter. In this design, a Micro inverter is placed with each solar panel and converts the DC power to AC power at the panel.

The benefit is that if one panel has a problem, that is the only panel affected; the others continue to function normally. The disadvantage is that they cost more. Warranties on Micro inverters are generally 25 years.

Finally, when comparing output numbers, it helps if all your comparisons are using the same formulas in determining the amount of kwh you can expect to receive from the equipment you are choosing. There are two websites you can use to make comparisons that are unbiased and fair. PV Watts, which is from the National Renewable Energy Laboratory & CSI, a part of the 'Go Solar California' initiative. PV Watts & CSI. Both will give you reliable information about how many kwh you can expect to receive from the equipment and system size you input.

All of the above is intended to help you compare 'apples to apples' when checking out the various offers companies will make to you. The truth is, solar systems will save you money over the cost of utilities providing you power. Doing some diligence in understanding the three areas above will give you the most peace of mind with your decision.

Chapter 4
How Should I Pay for It? Purchase or Lease?

I read recently that in California, 70% of the residential solar installations were funded by a third party, through a Lease, PPA, or Solar Service Agreement. The remaining 30% are purchases with cash or financing. Why are the majority of the solar projects funded with a lease? Is this the best way to get solar on my house? What are the advantages and disadvantages of leasing or purchasing solar energy? Just because 70% of my neighbors are going solar with a lease, is that best for me and my situation?

A lease means you are leasing the equipment for a set price and the power it produces is yours according to the terms of the lease. A Power Purchase Agreement (PPA) means you are buying the power the solar produces at a set price according to the terms of the PPA. A Solar Service Agreement (SSA) means you are buying the power at a set price according to the terms of the SSA. They are all very similar but called different names according to company preferences and/or locality requirements. For our purposes, I will simply use the term lease to describe all three because they all have one thing in common; you don't own the equipment but rather buy the power the equipment produces. It is like replacing your present utility company with another provider of electricity.

It is my opinion that most people lease because they don't know of a better way, or can't afford the cost of the equipment. Most solar companies only offer a lease program, so you are not likely to hear about purchasing options if they don't offer any.

I would like to give you some advantages and disadvantages for each, so that you can make a more informed choice about leasing vs. buying.

Advantages to leasing

- Immediate out of pocket monthly savings from what you are paying your utility now. Generally, you can expect to save about 15 – 40% depending of the size of your bill. The higher your bill, the more you will save.
- Often, you are not required to put any money down. The lease company pays for everything (engineering, permits, inspections, equipment & installation). You simply make a monthly lease payment once the system is turned on, instead of making a payment to the utility company. (NOTE: This assumes the system produces 100% of your electricity needs. If it does not, you will have two bills; one to the lease company and one to the utility.)

- Peace of mind knowing that if anything goes wrong with the system, it's not your worry to fix it. The lease company owns the system; therefore, it is their responsibility to repair it.
- The system is insured by the lease company. You do not have to add this to your homeowners' insurance.
- The system is guaranteed by the lease company to produce a minimum level of power each year of the lease. If the system produces more, it is free to you. If it produces less, the leasing company must pay you for that difference. You have a guaranteed production for the length of the lease.
- Your monthly payment amount is locked in for the term of the lease. Even if the lease has a cost of living increase (they call it an escalator), you know from the very first day what you will pay for your electricity for many years.
- Free monitoring of the system. Your leasing company will monitor your system's production and address issues often before you know there is a problem.

Disadvantages to leasing

- Lease companies have qualifiers such as your bill must be over a certain amount each month, your FICO credit score must exceed certain minimums, you must have enough roof space, and you cannot be on any special rate with the utility. These qualifiers are different with each company that offers a lease so you may or may not meet their qualifications.
- Having a leased solar system may hinder the future sale of your home. Should you choose or need to sell your home, the lease must be part of the transaction. You can transfer the lease to the new home buyers if they want to continue the lease agreement and if they meet the credit requirements. Or, you can pay off the lease in a lump sum amount so the solar system can be made part of the sale with no future lease payments the buyer assumes. You may or may not have the ability to do that.
- Although a lease payment may be less than the utility bill, your savings may not be as much as you would realize if you bought the system and even financed the purchase. Check out the example given below.
- You will not benefit from any of the federal tax incentives offered to homeowners who purchase their solar system. Instead, the lease company receives those incentives. The lease company may also own and receive value from the REC's (Renewable Energy Credits).
- Options at the end of the lease (often 20 years) may or may not be to your advantage at that time. The solar system has a value, but what will that value be

at the end of the lease? Do the options the lease company offer adequately cover all the possibilities you could face at that time?

- You do not own the system. Ownership if affordable is generally more desirable.

Advantages to Purchasing

- Cash is always king. There are no financial qualifiers to meet when purchasing with cash. Cash purchases give the highest return on your investment and offer the lowest cost per kwh over the 25 years your system is under warranty. See the example below.
- When you purchase, you own the equipment and all the power it produces with little to no operation costs.
- Your return on investment is immediate and substantial. For example, let's say your cost to purchase is $33,000. You avoid buying 12,000 kwh of power from the utility at an annual cost of $2,679. If you put $33,000 in the bank and received $2,679 in interest after one year, what would be your rate of return? 8.1%. Not too bad in our economy today. Where else can you net 8.1% return year after year?
- If there are any incentives available such as tax credits or rebates, you can apply for them which reduces your net cost for the equipment. Right now, there is a 30% tax credit from the IRS if you purchase a solar system for your home. You must owe a dollar in federal tax to get a dollar in credit, but it is available if you have a tax appetite.
- Purchasing a solar system adds value to your home and increases the value of any future sale of your home. A study was made by the Berkeley National Laboratory that gives credibility to this claim. You can read the report here. Berkeley Report Your home becomes more attractive to buyers when there will be little or no electric bill every month.

Disadvantages to Purchasing

- Requires a substantial cash outlay up front. You may not have the funds available for a purchase.
- If you finance a loan, it will require certain credit and/or debt to income ratio minimums which you may not be able to meet. Or perhaps you have had a foreclosure, short sale or bankruptcy in your past which would hinder your chance for a solar loan.
- You need to inform your homeowners insurer and add the solar system to your policy. This may increase your premium.

Example

Let's look at a real-life situation and compare purchasing vs. leasing options. The following example is a real-life example from my client list. Their annual usage was 9,049 kwh. Their annual cost prior to solar was $1,752, for an average cost of 19¢ per kwh. Over the next 25 years without going solar they will pay their utility $57,932 if they continue historical rate increases of 5.0%. Can you imagine paying that much just for electricity over the next several years? If they continue with the utility and never go solar, 20 years from now they will be paying 49¢ per kwh. A very good incentive to go solar.

The system size chosen was 4.94 kw, rated to produce 9,259 kwh (PV Watts) in the first year, leaving a balance of kwh to purchase from the utility of 0.0 kwh. This client wanted to have their solar system over-produce the amount of power they had historically used in the past. The equipment chosen was polycrystalline panels with micro inverters.

To highlight, here are the three most important factors they chose:

System Size…4.94 kw

Power produced in first year…9,259 kwh

Equipment chosen…260 watt polycrystalline panels with micro inverters

Let's review their choices:

They can continue with their utility. It will cost them $57,932 over the next 20 years if the utility continues to raise rates at 5% per year. This equals a 35¢ per kwh rate over 20 years.

They can purchase the above solar system for the cash purchase price of $19,019. When they file their income tax next year, they can claim the $19,019 as a Residential Energy Credit. They will use IRS Form 5695 https://www.irs.gov/pub/irs-pdf/f5695.pdf to claim the credit. If they qualify, it has a value of 30% or $5,706. After claiming this credit, they have a net cost for solar of $13,313. This equals an 8¢ per kwh rate over 20 years.

They can purchase the above solar system by financing the net cost of $13,313 after claiming the tax credit. Financing terms of 20 years at 5.5% interest means they will have paid a total of $21,840 for their solar system. This equals a 13¢ per kwh rate over 20 years.

They can lease the above system for 20 years with a fixed flat rate of $109 per month with no increases in rate. They cannot file for the Residential Energy Credit, and their total paid over the next 20 years is $26,160. This equals a 16¢ per kwh rate over 20 years.

Before Solar		After Solar		
Annual Cost with Utility and 5% increases		Cash Net After Tax Credit	Financed $0 down 20 yrs 5.5% interest	Lease 20 yrs flat rate
1	$1,752	$13,313	$1,092	$1,308
2	$1,840	$0	$1,092	$1,308
3	$1,932	$0	$1,092	$1,308
4	$2,028	$0	$1,092	$1,308
5	$2,130	$0	$1,092	$1,308
6	$2,236	$0	$1,092	$1,308
7	$2,348	$0	$1,092	$1,308
8	$2,465	$0	$1,092	$1,308
9	$2,589	$0	$1,092	$1,308
10	$2,718	$0	$1,092	$1,308
11	$2,854	$0	$1,092	$1,308
12	$2,997	$0	$1,092	$1,308
13	$3,146	$0	$1,092	$1,308
14	$3,304	$0	$1,092	$1,308
15	$3,469	$0	$1,092	$1,308
16	$3,642	$0	$1,092	$1,308
17	$3,824	$0	$1,092	$1,308
18	$4,016	$0	$1,092	$1,308
19	$4,216	$0	$1,092	$1,308
20	$4,427	$0	$1,092	$1,308
Totals	$57,932	$13,313	$21,840	$26,160
Cost per kwh	35¢	8¢	13¢	16¢

Figure 1

As you can see in Figure 1, I'm not sure how anyone could argue staying with the utility is a better choice financially. Therefore so many people are excited about going solar! Imagine what you can do with these thousands of dollars saved from your independent solar system.

So, which is better? Is it wise to lease or better to purchase? Each homeowner needs to evaluate that based on their situation. Can you pay cash? That option gives the best return. Is your credit good and you could finance a loan for the equipment? Then financing may be best? Is no money down but changing who you buy power from at a lower price than the utility attractive? Then a lease option may be your best choice.

It does not matter which choice you make when going solar: cash, financed, or lease. All will give you the same power for a lot less money. That's why people are excited about replacing the utility with solar. The added benefit of getting your power from the sun verses using the carbon rich forms of fossilized fuel is even greater for our planet. In fact, using the carbon fuels to make electricity is often called making "dirty air." I'm proud to be in an industry that does not contribute to dirty air while saving my clients thousands of dollars!

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Chapter 5
Top Ten Reasons People Are Going Solar

1. **It's Exciting to go Green.** People love the fact that they gain independence from the utility. While their neighbors continue to receive rate increases, owners of solar do not. When the utility raises their rates, you just save even more! It's a great feeling to know you are not contributing to the dirty air problem, and that you are using the latest technology to produce your own power.
2. **Tax Credits.** The Federal Government offers a 30% tax credit for any residential or commercial solar installed. This program has recently been extended until December 31, 2020. If you pay taxes, you qualify for this program and your net cost for solar is 30% less by purchasing solar. If you lease, the leasing company receives this credit and often uses it to reduce your monthly lease payment. Either way you benefit.
3. **Net Metering.** After solar is installed and turned on, any power you generate that you do not use in your home or business flows into the grid and you receive a credit from the utility for that power. This is called net metering. Without solar, if you are on vacation, your electric bill would be lower because you were not home using things requiring power. With solar, even when you are on vacation, you generate power and build credits. You never lose the value of the power your solar system generates.
4. **Little or No Maintenance.** Repairs are covered under manufacturer's warranties, unless it is proven that the equipment was altered or damaged by the homeowner or other unauthorized person. Maintenance is minimal consisting of keeping the panels free of dirt and debris. This is done by rinsing the panels with water as needed, usually about two times a year.
5. **Does Not Increase Property Taxes.** In July 2014, California Governor Brown signed SB 871 which extends the existing solar property tax exclusion until January 1, 2025. In California, the continuation of this policy will allow homeowners to install solar energy without a reassessment of their property taxes.
6. **Adds Value to Your Home.** Research by the U.S Department of Energy's (DOE) Lawrence Berkeley National Laboratory finds strong evidence that homes with solar photovoltaic (PV) systems sell for a premium over homes without solar systems. Research showed the average home sold for $17,000 more for every 3,100 watts of PV installed.

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7. **Lower Emissions.** Over the next 25 years, an average home system will save the equivalent of 120 tons of greenhouse emissions, driving a car 218,182 miles less, and absorbing CO2 by planting 4,800 trees.
8. **Quality Improvements**. Manufacturer's warranties are a standard 25 years for production levels and 10 years on workmanship. Efficiency for both panels and inverters are also improving. Five years ago, a common panel was rated at 185 watts of DC power. There are panels rated at 400 watts today although more common is in the 250 – 300-watt range. More power from the same space is possible because of quality improvements.
9. **Cheaper Cost.** The average cost for solar from all installers in California in 2010 was just under $10.00 per watt. By the end of 2013, the average cost per watt was $5.05, and today you will find the cost at $3.85 per watt very common. It is cheaper to go solar today than it has ever been.
10. **Cost of Not Going Solar.** Our need for electricity is not diminishing. The cost of traditional fossil fuel generation of power, and the maintenance of the grid is always increasing. Where I live, the largest utility in the area has increased their rates by 50% – 88% over the last 10 years, depending on the tier rate you are buying power. Power from the sun is not costly, is abundant, and other than the initial investment for equipment, is free. Take a pencil and total how much you spent last year on electricity. Now, multiply amount by 25 years. Do you like what you see? And that doesn't even include how much the real total would be if you added in rate increases. Most solar systems save home and business owners a minimum of 50% of that amount. It's not uncommon to save more than 80% over 25 years. Doing nothing costs you money.

Conclusion

Thank you again for downloading this book!

We hope the book could help you save money with solar for your home. What I've written are from my experiences as a Renewable Energy Consultant in residential and commercial installations of solar over several years. I represent a company who is a leader in the solar industry, and licensed in the State of California.

If you are interested in switch to solar today and save money, you can visit our website https://www.sunlux-energy.com/contactus or contact us at sales@sunlux-energy.com for more information or to receive a free quote. All quotes are free and you are under no obligation to sign anything.

Thank you and congratulations on considering solar!

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