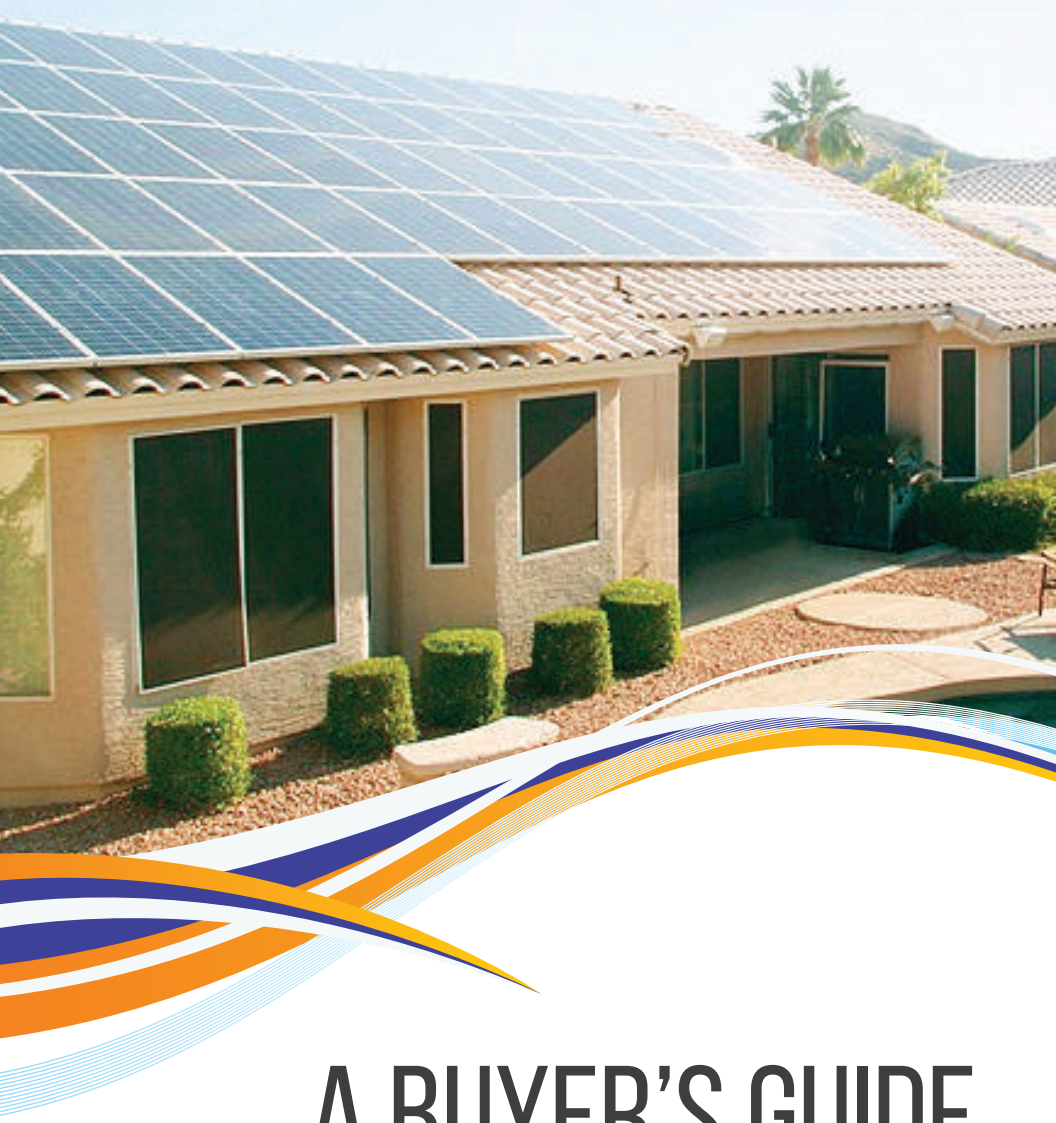

A BUYER'S GUIDE TO GOING SOLAR

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INTRODUCTION

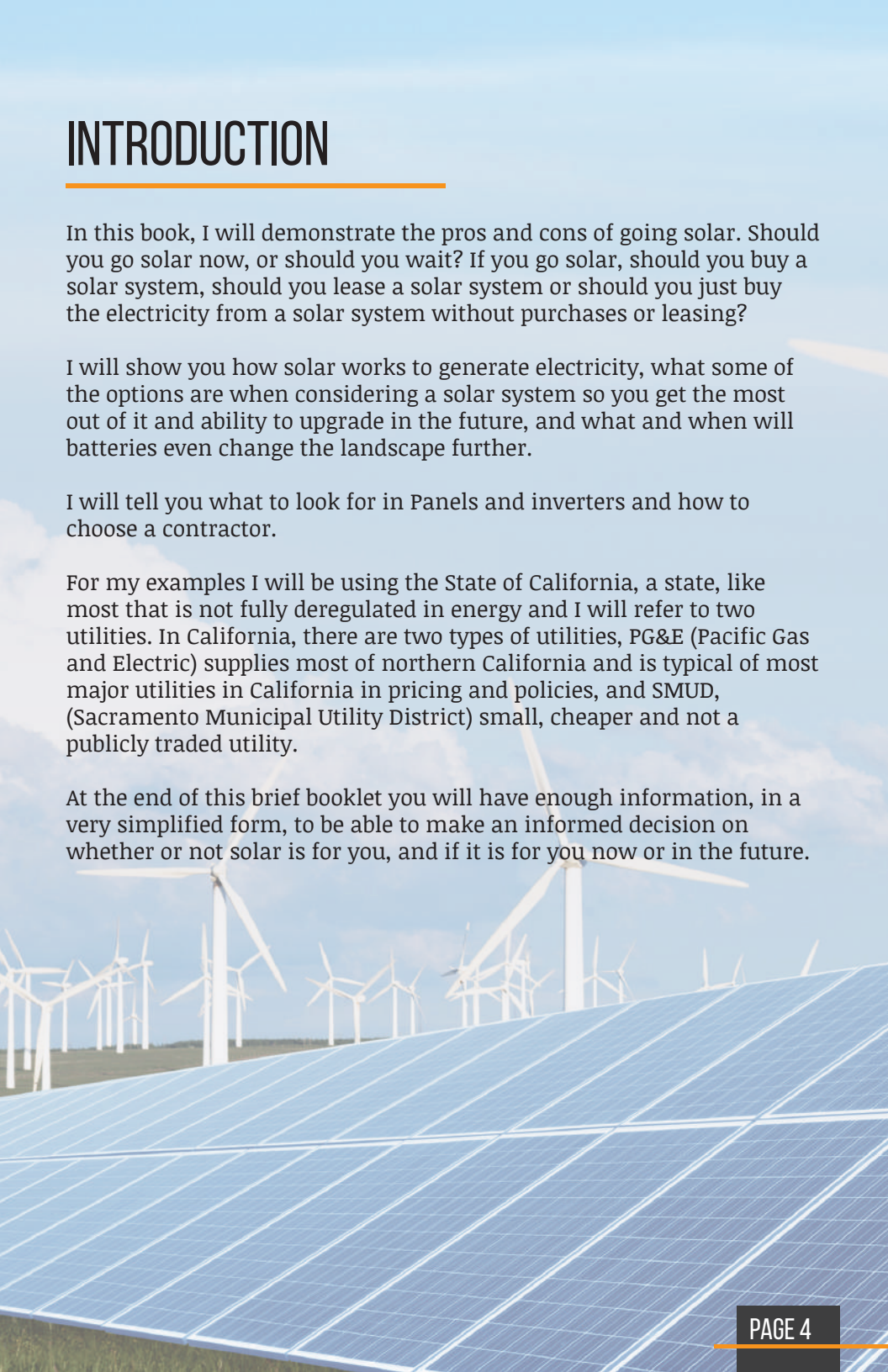
In this book, I will demonstrate the pros and cons of going solar. Should you go solar now, or should you wait? If you go solar, should you buy a solar system, should you lease a solar system or should you just buy the electricity from a solar system without purchases or leasing?

I will show you how solar works to generate electricity, what some of the options are when considering a solar system so you get the most out of it and ability to upgrade in the future, and what and when will batteries even change the landscape further.

I will tell you what to look for in Panels and inverters and how to choose a contractor.

For my examples I will be using the State of California, a state, like most that is not fully deregulated in energy and I will refer to two utilities. In California, there are two types of utilities, PG&E (Pacific Gas and Electric) supplies most of northern California and is typical of most major utilities in California in pricing and policies, and SMUD, (Sacramento Municipal Utility District) small, cheaper and not a publicly traded utility.

At the end of this brief booklet you will have enough information, in a very simplified form, to be able to make an informed decision on whether or not solar is for you, and if it is for you now or in the future.



SHOULD I EVEN CONSIDER GOING SOLAR?

Why even consider going solar? Simple, it's a no brainer? OK, so what is a no brainer. It is simply something that should not take much of a thought process to decide to do.

Let me give you an example. You are driving down the street and need to get some gas. You pull up to an intersection, and on the corner on the left is a Shell station advertising $2.50 for regular unleaded while the corner on the right has a Chevron station, that is advertising $5.00 for a gallon of unleaded. This is a no brainer, you pull into the shell station and save 50% on filling up your tank. Your car will run the same, you will get the same mileage, you simply will pay less money. No brainer.

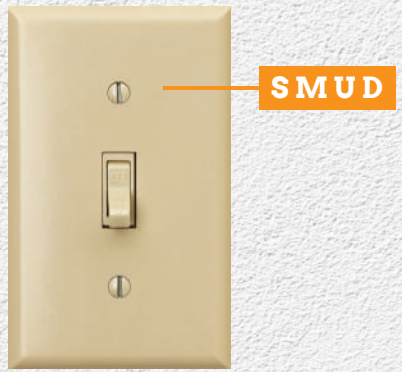
Ok, now let's use a similar example in your home. Let's assume that in every room in your home you have two light switches. One is connected to SMUD and the other is connected to PG&E. SMUD charges $2.50 an hour to send electricity to the lights in that room and PG&E charges $5.00 to send electricity to the lights in that room for one hour.

Which light switch do you turn on in order to have light? It's a no brainer, you will hit the SMUD switch and save. You get the same amount of electricity, you get the same amount of light, you simply will pay less money.

If it is that simple, why was it not done a long time ago? It is because the government gave a monopoly to the utility company that you pay for your electricity, and to a certain extent they can charge whatever they want and you have no choice in the matter. Either pay the higher price of PG&E, and pay $5.00 for electricity or live in the dark, without heat or air conditioning, and without a refrigerator or television, alarm clock or computer, and so on, and so on.

This did not happen with the gas station example because the government did not give a monopoly to Shell or to Chevron, and therefore their prices will vary only by pennies, because they know that everyone would go to the Shell station and no one would go to the Chevron station if this were the case. The government did not protect either one of them with a monopoly, it let the market forces (you) decide.

We have accepted the high price of electricity as just the way it is. We have accepted a 7% annual increase in our electric bill each year, because we figure that is just the way it is. Furthermore, we have accepted the fact that a company like PG&E will charge nearly double for their electricity. While SMUD charges about half as much to the customer that just lives across the street. We have been like sheep led to the slaughter, and we have accepted it. You cannot live in PG&E territory and buy electricity from SMUD. One utility producer only, for each geographical plot of land, if you are on that plot of land, you will buy from that utility.



Until now, with the exception of a few deregulated states, the only way to buy electricity from other than your designated utility, is to buy it from Solar. This can be solar that you own, or solar that another company owns and uses it to supply you with cheaper electricity (more on this later).

You have to realize that these savings can add up significantly. For example, if your electric bill is $200 per month, and you can save half of that, and you are 30 years old, with inflation factored in, your savings by retirement age is over $250,000. This is enough to put some of your children through college, or give you a much more comfortable retirement. How about a vacation home that you pay for in cash? Yet we think nothing of driving a few miles extra to save ten cents on a gallon of gas when it is time to fill up, even though it will not really do much for your lifestyle. Stop stepping over dollars in order to pick up pennies.
And that is just the beginning of it all. Everyone WILL go solar eventually; let me show you why. Almost every utility has been increasing their prices by about 7% per year. This is faster than inflation. The rate of increase in your utility bills is going to increase substantially until you finally say, enough is enough I can't take it anymore. Here is why.

Your utility rate is going up each year because of the increasing cost of producing electricity. Most electricity is produced by burning coal and oil, in a plant with a lot of employees and delivering that electricity over costly powerlines.

Let's say for example, that 5% of the people in your utility district decide to go solar in the next year or two, which is very feasible. Then not only will the remaining utility customers have the customary 7% increase in their bills but the rate will go up faster.
Here is why. Although the utility company will now buy less coal and oil to burn to meet this lower demand; the cost of that plant, and all of the employees and the powerlines, cannot be easily cut back so that fixed cost is now amortized over 95% of the possible customers instead of the former 100% of the customers.

This may mean an increase of not 7%, but maybe 9% or 10%. Well now more and more customers are becoming frustrated over the price of electricity that they have no control over, and they decide to go solar. Maybe another 10% go solar over the next period of time. Now there is only 85% of the former customers buying from the utility and the utility still has its high fixed overhead of plant, employees and powerlines and has to amortize that cost over fewer and fewer customers. I see a day, in the not too distant future, that rates will go up 15% to 20% per year. How many years of that can you fit into your budget? It is like a snowball rolling downhill. It creates its own momentum and the size of the snowball not only gets bigger but the percentage of increase, increases each year. Geometric progression of a monthly bill that you cannot do without will eventually have everyone reach the decision that enough is enough, and it is time to let the sun give you free energy, and energy that is clean and nonpolluting.

HOW DOES SOLAR WORK?

Now that we know that there are many economic reasons as to why we should go solar, let's look at a simplified explanation of how solar works before we decide which method of obtaining solar has the best financial return for us. Quite simply, solar panels on your roof turn ordinary sunlight into DC or direct current electricity, and there are no moving parts and no cost of operation. DC electricity is like the electricity in your car battery. Your home uses AC or alternating current electricity. Therefore, before the electricity from your solar panels enters your home, it goes through an inverter, a small appliance, that converts the DC electricity into AC electricity, ready to run all the electrical features of your home, heat, air conditioning, lights, TV, etc., etc.

There is no difference in your home from getting electricity from the grid (your local utility company) or the solar on your roof. You turn on a switch and the light comes on, it is that simple. It is not different electricity, it is not stronger or weaker electricity, it is simply cheaper and cleaner electricity.... nothing else.

If there is light out, your solar panels create electricity. Even on overcast days, just not as much as sunny and clear days.

What about at Night when there is no sunlight?

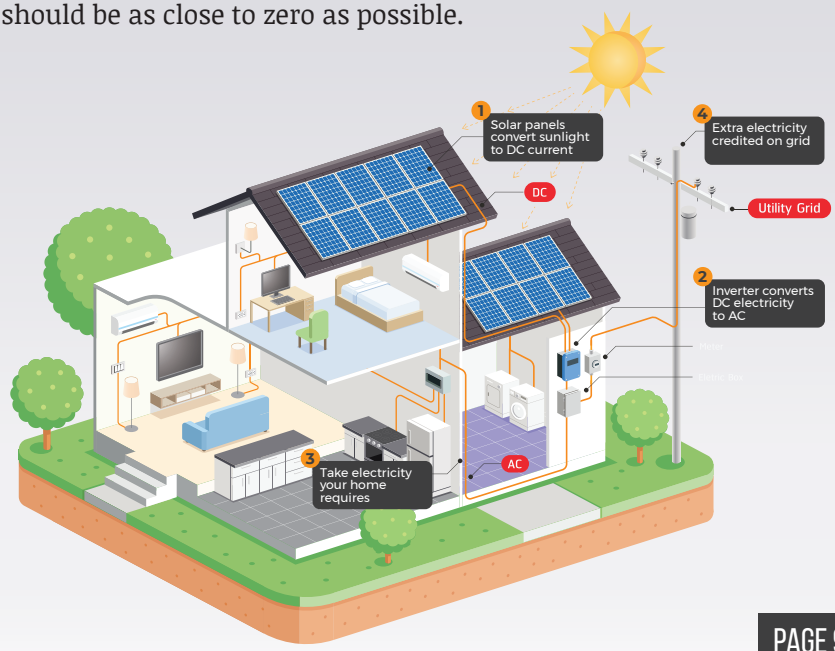
Electricity is like water; it must flow somewhere once it is created. Your Solar System will create more electricity during the day than your household uses during the day. Therefore, that excess electricity flows through your electric meter and back to the utility, for them to use for other customers that need to consume it now. Your meter literally runs backwards, and you get a credit for that electricity from your utility.

At night, your solar system is not creating electricity, yet you need some to run your home. At this point the utility is now supplying your electricity and giving you a credit for the electricity you gave them during the day.

This process is known as NEM or net metering. If you give them $100 worth of electricity and they give you $100 worth of electricity, then it is a wash, and nobody owes anybody any money.

If you give them $105 worth of electricity and they give you $100 worth of electricity, then they owe you $5. The same is true if it were the other way around, you would owe them $5.

In NEM you do not pay or receive the difference until the end of the year. You are then sent what is known as a “True Up” bill, that calculates all the debits and credits that were exchanged all year long and one bill or credit is sent. Either you owe them some money, or they owe you some money. If your system is properly sized to cover all your electricity, this “True Up” bill should be as close to zero as possible.



As you can see, you are still attached to the grid, or the utility company's power supply. This is mutually advantageous to both of you, so you are never without the power you are used to having at your fingertips.

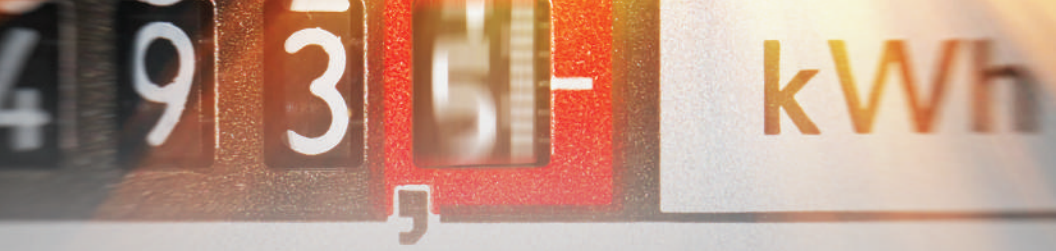
You may be wondering about batteries, and if you could store your own electricity instead of having the utility act as your battery through the net metering process. This will be covered later in this book in "The Future of Solar".

ADVANTAGES OF SOLAR NOW RATHER THAN LATER

To begin our discussion on what to look for when deciding to go solar, a little perspective may be appropriate.

The first commercial rooftop solar installation took place in Delaware over 43 years ago. It was expensive and off to a slow start. Yet, recent years have more than made up for that. You see, over thirty percent of all the solar ever installed in history has been installed over the past couple of years. Now that is a definite spike in solar usage, sometimes approaching 100% per year.

Many people wonder why there was such a spike in the recent past. Why did that not take place several years ago or several years in the future. Well actually there are three reasons for this recent surge in interest in solar and you should take note as these three reasons will affect you.



01

The first reason has to do with net metering. Remember how the utility is acting like a battery for you and giving you free electricity at night because you gave them electricity during the day. Well the utilities do not like this arrangement. They are just trading electricity and not making any money on you.

They would like to change this arrangement. They want to credit you the wholesale price of electricity, such as a nickel a kilowatt, when they take it from you, and then charge you retail, twenty or thirty cents a kilowatt when they give it back to you twelve hours later. PGE came within one vote with the PUC (public utilities commission) recently for getting this change.

When they get this changed, and I believe they will, then people who get solar after the change will be “sunny day” solar owners. This means that they are only saving money during the day when the sun is out. On rainy days and nights, they are basically at the mercy of their utility again.

Notice, I said that this will happen to people who get solar after the change. You see, there is a caveat, and that is, when there has been changes to net metering in the past, people who already had solar were not subject to those changes, they were grandfathered into the way it was when they installed solar. It is widely recognized that when the change does come, that those with solar will be grandfathered under net metering as it is today and will still save day and night, rain and shine.

This is not to be taken lightly, as Turlock, Modesto and Lodi California are not regulated by the Public Utilities Commission, and they stopped net metering, with no real warning, in February of 2017. Those who already had solar are still net metered and enjoying solar savings around the clock in all sorts of weather. Those who had not yet installed solar are SOL, “solar out of luck”. The adage of “you snooze, you lose” certainly applied here.

Another good point about getting grandfathered now before any change is that the grandfathering provision stays with the home. This means that when you sell your home down the road, it has much move value than a competing home with solar that is not grandfathered with the utility.

02

The second reason for the recent surge in solar interest is the ITC or solar investment tax credit. When you purchase solar, you are entitled to a 30% credit on your federal income tax. This is not a deduction, but a dollar for dollar reduction in your tax liability. For example, if your solar is $25,000, then you are entitled to pay $7,500 less in Federal income tax which makes your solar investment $17,500 after the credit.

Some people wonder if this applies to them because they normally get a refund at the end of the year. Remember that you are getting a refund because too much tax was withheld from your weekly paycheck and you did not owe that much tax. With the solar tax credit this means that whatever your refund was supposed to be could be increased by $7,500 if you had that much withheld.

If you did not have that much withheld and do not that much of a tax liability. There is a provision that what you do not use this year can be carried forward to the following year. This is not meant to be tax advice, just some general info taken from IRS form 5695 that is used for the solar credit. Always consult a professional tax advisor for your personal situation.

Now here is the challenge. This Solar Residential Investment Tax Credit was due to expire at the end of 2016. It was extended to 2022. But it was extended by the Obama administration. The Trump administration is pro gas and oil, and not a friend of solar. Many experts believe that he may try to abolish it in his administration. But once you have a credit and filed for it, it cannot be taken away from you.

03

Finally, the third reason for that recent large surge in solar installations is because of the planned rate change by the utilities.

You may notice that you have a new electric meter on your home, it does not have the old dial that used to spin around. What you have is a smart meter. This meter not only allows the utility to measure how much electricity you are using, it tells them what time of day you are using it. They plan to charge you a premium or surcharge on early afternoon and early evening usage, and an even bigger surcharge on late afternoon usage. You know, when the air conditioner is running full blast, you start cooking dinner, and the kids come home from school and turn on the television. That's right, when you use the most, they are going to charge you the most. This rate structure is known as "time of use" pricing.

This could easily add 30% to your bill when it is implemented this year. This is definitely not good news for those without solar. But it may be good news for those with solar. Remember with net metering your utility pays you for your electricity the same amount they charge for their electricity. Well, your solar system will produce the most electricity during the late afternoon during the summer. This is when you will be delivering electricity to the utility and getting credit for it. Then you will be taking electricity from the utility at night when the rates are lower, and you are giving up some of your credits. With solar you could be making an arbitrage on your exchange with the utility, and therefore benefit from "Time of Use" rate schedules.

As you can see, there are three good reasons that people are deciding to switch to free clean energy now rather than later.

1. Get grandfathered into Net Metering
2. Have the government pick up 30% of the tab for your new solar system through a tax credit.
3. Have the utilities new pricing structure benefit you rather than cost you.

PROPERTY TAX EXEMPTION

There is one more point worth mentioning regarding the urgency of going solar sooner rather than later. Normally when you make a capital improvement to your home your home is reassessed by the county and the result is an increase in your property taxes.

Solar is a capital improvement to your home and as such would normally increase your yearly property taxes. Yet Section 73 of the California Revenue and Taxation Code allows a property tax exclusion for certain types of solar energy systems installed now and the Photovoltaic system you are considering falls under this.

Yet, like everything else, there is a time limit to qualify for this exclusion, so take advantage of it now while you can.

HOW TO CHOOSE THE RIGHT PANEL

As with just about every product there are differences between panel makers or brands of panels on the market but not as much as you would think, or others would have you believe.

Panels are in a standard size which is approximately three feet by five feet. So how many panels will fit in a certain space is about the same, regardless of the brand.

There can be a difference in the efficiency or wattage of a panel. The most common wattage of panels is 280 to 300 watts DC (direct current) per panel.

You can get panels that can have 320 watts or maybe even 360 watts per panel. Then it might seem simple, get the panels with the most wattage. Not so fast, that may not be a good decision.

You see what you are looking for in a solar system is enough panels on the roof to cover your electric usage. Whether that is 10 panels at 300 watts each or 20 panels at 150 watts each, does not matter, because both systems will deliver a total of 3000 watts. What matters is the COST per watt.

Let's explain that a little differently. What if you need to light a room in you house with 100 watts of light. You could use two 50-watt bulbs or one 100-watt bulb. Looks like either way will work, and it will. But, what if 50-watt bulbs cost $1.00 each and a 100-watt bulb costs $3.00 because of the technology or cost to get more watts into the 100-watt bulb. Now the cost per watt for using the 100-watt bulb costs more than the two 50-watt bulb option.

This is the point I am trying to make about the solar panels on your roof. You are trying to get a certain amount of electricity generated to take care of your needs and if you want to do it with the quote...more efficient panel...then you will pay more per watt, and therefore more for your system than you needed to because the normal wattage panels, with a few more of them, does the trick.

So why are there more efficient panels made if they are costing not only more for the panel but more for each watt of electricity that they produce.

It is because everyone does not have enough roof space available to handle all the panels needed with the normal wattage panels. Therefore, to get rid of their entire utility bill they may have to utilize the more expensive panel to achieve this goal. But if you have enough roof space, save some money and use a regular 280 to 300-watt panel.

TIER 1 PANELS

There are dozens and dozens of brands of solar panels. Some of these brands you may readily recognize such as LG and Panasonic, and some brand name may be new to you such as Mission, Canadian and Solar World. Regardless of whether you recognize the name or not, and regardless of what one person says about a certain brand or not, what is important to you as a homeowner is that it is a tier 1 panel. Tier one panels will all be manufactured to certain high standards and will carry a 20 or 25-year performance guarantee.

A performance guarantee simply warrants that after the specified number of years the panels will still deliver the amount of electricity they delivered the day they were installed minus a specified degredation factor.

A degradation factor is the amount of electrical capacity that a panel loses each year. This Is normally if the .5% to .8% range.

Other than that, most tier 1 panels are very similar in many other ways. It is not necessary to pay for a name you are familiar with. If you think of it, look at the light bulbs in your home, are they General Electric, Westinghouse, Sylvania or Philips, or does it even matter.

WHAT IS THE RIGHT INVERTER?

The second major component of your Solar System is the type of inverter used. Remember this is the appliance that changes the DC (direct current) electricity generated on your rooftop into AC (alternating current) needed to run everything electrical in your home.

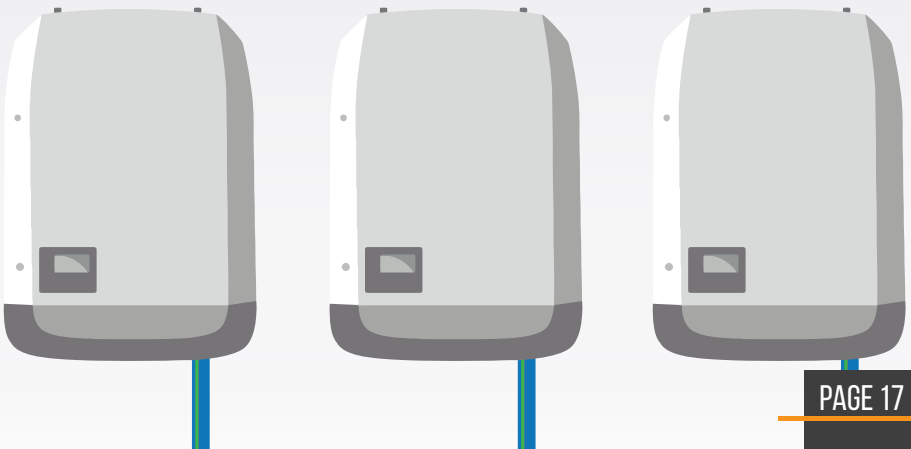
There are three generations of inverters, each improving over the other. They are the string inverter, the micro inverter and the solar inverter with optimizers.

THE STRING INVERTER

The string inverter was the first generation of inverters. This is a single inverter, about the size of a large suitcase, that sits next to your electrical panel. The panels on the roof are hooked in a series, and the electricity comes off the roof and goes through this single inverter which converts all the electricity to AC or alternating current.

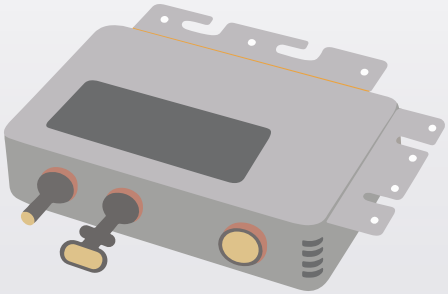
The challenge with this technology is that what happens to one panel could affect all the other panels. Remember the old Christmas tree lights, when one bulb went out, the entire string turned off. You had to find that one burned out bulb and replace it and then the entire string would light up again.

With a string inverter, if one panel is shaded, let's say 50%, by the sun passing the chimney for an hour, that panel would only produce about half of the electricity that it normally would. But, since the panels are hooked in a series with that string inverter, all the panels connected to that one would lose 50% of their capacity while that shadow is cast on just one panel.



THE MICRO INVERTER

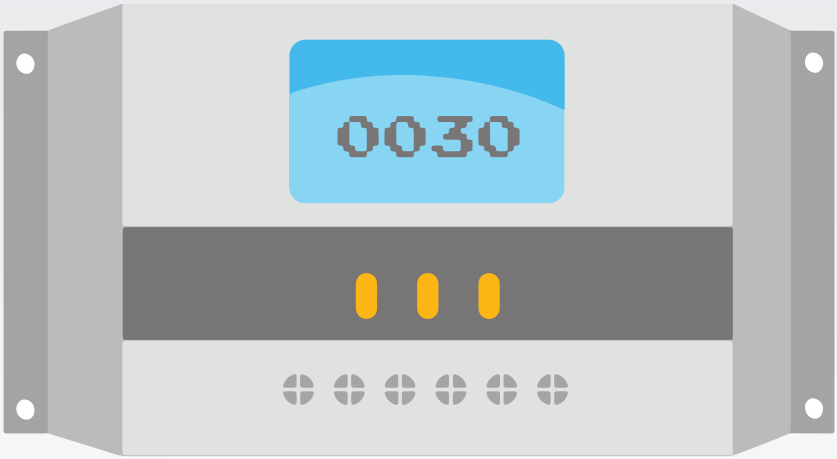
The solution to this was to utilize the second generation of inverters known as the micro inverter. This is a small inverter, about the size of two decks of cards, that is attached to the back of each panel on the roof. This separates the production of electricity and therefore shadows cast on one panel will not affect the electrical producing capacity of the other panels.



The challenge here is that with, say a 20-panel system, you are purchasing 20 inverters, instead of one.

INVERTER WITH OPTIMIZERS

Along comes the third generation with the solution, SolarEdge or similar inverter with optimizers. This is a single inverter, yet it is connected to a computer component, or optimizer on each of the solar panels. This gives the independence or separation of one panel from another as in the micro inverters and gives the economy of the single inverter.



WHAT TO LOOK FOR IN A SOLAR CONTRACTOR

Now once we know that we want solar, that it makes sense and we know we want tier 1 panels, who should we hire to engineer and install the system.

Remember earlier we mentioned that over 30% of all the solar installed in history was installed over the past few years. Well, this also means that just about 30% of the solar installers or contractors who install in California, started in the past few years also. When you are getting a system that you hope will last over a quarter of a century, it makes sense to trust that project to a firm with similar history to back up their work.

In California, it is legal for several types of contractors to install solar. A "B" License or general contractor's license can take on projects in solar, yet they normally are overseeing many sub-contractors in building homes and the such. A "C-10" Electrical licensed contractor can install solar, but they are trained in many facets of electricity and may only have a small portion of their expertise in solar. Yet a "C-46" licensed contractor is specifically trained and licensed for Solar engineering and installation. Look for someone who is specifically trained for the project you are about to undertake.

How long a contractor has been licensed is also important in that this give you an indication of their commitment to stay in business.

There are many ways to check out the reputation of the contractor you are looking at. The first way is to check their license number with the California Contractor's State License Board. Simply go to www.cslb.ca.gov and under license search put their license number, it will be on their business card or order forms and brochures. This will tell you their history, their specialties, and if there have been any problems with their license currently or in the past.

The next way is to look them up on the Better Business Bureau or www.bbb.org. See what rating they carry here. A rating of A+ is the best, it doesn't get any better than that.

Another thing to consider is whether they have any experience in roofing. You see when they install solar on your roof they will be penetrating your roofing structure. If you have a leak down the road because of the installation, the warranty on the panels will be of no use to you. You need to have a workmanship warranty on that roof and it should be at least five to ten years.

Finally, how do you know if your system is working up to par years later. There are monitoring systems that are available for a price. These systems allow you to monitor the output of your system as a whole and panel by panel. You monitor it on your iPad, Smartphone, or home computer. If you contractor has confidence in his or her work and want you to be able to know immediately if there is something wrong with the system, they should include this monitoring package with your system at no additional charge.

With the right panels and right engineering and installation, you should enjoy many decades of clean and free power for your home.

DOES SOLAR INCREASE THE VALUE OF MY HOME?

The answer is simple, every home improvement increases the value of a home. The real question is by how much. Solar is the only home improvement that pays for itself. It does this in two ways, first by mitigating or eliminating one of the most expensive monthly expenses of the home, and the second is by the increase in market value of the home.

But rather than make educated guesses to this question, let's turn to the experts who have done studies. Following is an article by the Forbes Magazine staff:

HOW MUCH DO SOLAR PANELS BOOST HOME SALE PRICES?

Ashlea Ebeling, *FORBES STAFF*
"I write about how to build, manage and enjoy your family's wealth."

Add a new steel front door to your house and you'll likely recoup the investment if you must sell. But what about a solar power system?

A group of California economists looked at that question in a recent study and found that on average, homeowners in California who install photovoltaic solar panels to power their homes can recover nearly all the investment costs if they move--and that's on top of the annual energy savings.

And if they live in a liberal community (with more registered Green Party members and Toyota Priuses) there's an even greater payback.

The economists looked at utility data, sales records of single family homes and building permit data in San Diego County and Sacramento County from 2003 through year-end 2010. The study, published by"Understanding the Solar Home Price Premium: Electricity Generation and 'Green' Social Status," is **available here**.

For the average installation, the authors found that solar panels added a $20,194 premium to the sales price of the house based on repeat sales data (houses were in the mid-$500,000 range). Solar is expensive to install—the average total system cost is $35,967, but the effective price to homeowners with subsidies including the federal tax credit is $20,892. Thus, homeowners appear to recover approximately 97% of their investment costs – in addition to the savings associated with reduced energy bills.

Own a Solar System or Lease a Solar System?

There are two ways you can have solar power to your home.

1. You can purchase a solar system for your roof from a local licensed contractor and have them install it.
2. You can lease a solar system, from a third party, who pays to have it put on your roof. You then pay a monthly lease payment for the system or just pay for the electricity it produces at a little lower rate than your utility charges you for the electricity they provide you from the grid. Sort of like leasing a car.

LEASING

Let's explore the lease, also known as a Power Purchase Agreement. You do not put any money down, but you do make monthly payments, either a set amount for the equipment each month, or a variable amount for electricity you use each month.

Regardless of which one of the above, it ends up being about the same amount of money each month and you can get a quote on that from a local, licensed solar contractor.

In a lease you sign up for a certain period, term of the lease, that is normally 20 years. At the end of the lease you may have the option of buying the system

Escalator Clause - In most leases there is an escalator clause which states that your monthly payment will increase by 2.9% per year for the life of the lease. So, if you are paying $200 per month this year, next year you will pay $205.80 per month and the following year you will pay $211.77 and so on. Towards the end of the lease you are paying over $340 per month, for the same system, or for the same electricity. This can add up.

You also must have a credit score over 650 or 680 to qualify for a lease.

THE PURCHASE

What if you wanted to purchase a Solar System for your home outright? Could you do that and just pay cash, or are there loan programs available for that very purpose? The answer to both questions is yes.

There are several advantages of purchasing a solar system.

1. You own all the electricity generated by the system
2. Once the system is paid off you have free electricity
3. Your electric bill NEVER goes up, not even a penny
4. This is an asset to your home, like a pool, or room addition etc., and it immediately adds value to the home, normally well more than $15,000 day one.
5. You receive the investment tax credit of 30%. That is a dollar for dollar reduction in your taxes due. It is not an itemized deduction; it is much better. The government is, in effect, paying for nearly one third of your system.

You purchase a system from a licensed, bonded, insured and experienced contractor. They inspect the property to make sure there is enough sunlight on the roof and the roof is strong enough to support a system. They design the system, specific to your home and your needs and present a written proposal that outlines:

1. The exact cost
2. The amount of expected electricity it will produce each year
3. The amount of savings you should expect from switching to solar, by month, by year and over a 20-year period
4. The warranty, which is normally 25 years
5. The loan programs that are available, both government and private sector loans

THE AVAILABLE LOAN PROGRAMS

Although there are many commercial loans available for this purchase, as any other home improvement, solar occupies a very special place in the economy. The Government would like you to go solar. So, in California, almost every county has adopted a special loan program under such names as HERO and PACE. PACE is an acronym for “Property Assessed Clean Energy”.

The advantages of these programs are many, to include:

1. Unlike a normal home improvement loan, you do not make monthly payments to the bank. Instead the monthly payments are accumulated onto your property tax bill. If you pay your property tax once a year, you would make twelve payments at one time when you pay those taxes. If you pay your property taxes as escrow with your mortgage, your mortgage company can just add a one-month payment each time they send you your mortgage statement. In either case you are paying a monthly payment on the loan. There may be significant tax advantages to paying off the loan through an assessment on property taxes. Many tax advisors advise their clients to write off some or all the interest payments in the itemized deductions the same way they write off property taxes. You need to check with your tax advisor for your specific situation.

   This can be significant. For example, if you are in a one third tax bracket, you not only receive 30% of the purchase price up front as a tax credit, but also up to one third of each payment, (i.e. the interest portion) becomes a tax deduction, as you pay off the loan. Once again check with your tax advisor.

2. Your credit score or debt load does not enter the decision to loan you the money. The loan is on the property and not on you. They normally just want to confirm that you are not in a current bankruptcy proceeding and are current on your mortgage and your property taxes.

3. Since your credit score does not come into play, then your score is not affected for the future. In other words, if you want to make a major purchase in the future, such as vacation home etc. where they take your income into consideration against your outstanding debts, this debt, as part of property taxes, is normally not taken into consideration. This makes it much more likely that you could get that other loan.

Should I Purchase or Lease?

The simple answer to this question is that if you can purchase you should. If it is completely impossible to purchase, then leasing is still better than continuing to pay the exorbitant rates the utility charges.

THE ADVANTAGES OF THE PURCHASE OVER THE LEASE

Purchase: The Federal Government gives you a 30% federal tax credit on the purchase price. This is dollar for dollar credit from the IRS off your taxes. In effect the government is paying for almost one third of your system.

Lease: The leasing company gets this credit, not you.

Purchase: You own all of the electricity the system produces, even if it is more that it was designed to produce.

Lease: Under some you pay more for the electricity if it produces more and you use more.

Purchase: With each payment on the loan, you own more and more equity in the system. Just like your house payment.

Lease: With each payment you own nothing. You are renting your electricity from the leasing company, just like you were renting your electricity from the utility before.

Purchase: Your price or cost each month NEVER goes up and eventually becomes ZERO when the loan is paid off.

Lease: You are guaranteed that your monthly cost will go up by 2.9% per year.

Purchase: This is an asset to your home, and like a room addition or similar home improvement, the value of your home goes up immediately. Most experts agree that even a small system increases the value of a home by over $15,000 day one.

Leasing: No increase in value of the home, it is not an asset, it is a liability. If you want to sell your home, the buyer must agree to assume the lease, and they must quality by credit score. If they do not want to, or cannot qualify, they you must pay off the term of the lease before you can sell. If you are five years into the lease, this would mean you take the monthly payment, times 12 months, times the 15 years remaining, and fork it over to the leasing company. This can be very expensive.

Purchase: You own the system and can add on to it if your needs increase, such as more people in the home, or the addition of a pool etc.

Lease: You are at the mercy of the leasing company as to whether they will expand the system for you.

THE FUTURE OF SOLAR

The handwriting is on the wall. The future of electricity generation in this country and around the world is free, clean, solar generation. The time is coming that you will not see very many houses on the market that do not have solar. It will be like buying a house without central heating and air is today. It will become a necessary item to attract buyers.

As a matter of fact, the State of California has mandated that by 2050, 50% of the power generated in the state will have to be from renewable sources, such as wind and solar. Not only will this mean over 50% of the homes with solar, but even the major utilities are going to have to abandon coal and oil burning plants and invest in solar farms to supply cities with power.

California has just changed the law requiring that all new homes constructed after January 1, 2020, must be solar homes. You have probably noticed that most new construction builders are voluntarily making their residential projects 100% solar.

The Tesla electric automobile is just the beginning of the electric car paradigm shift. In the not too distant future, when you drive your electric car into your garage you will be parking it over a metal plate in the floor, that uses a blue tooth type technology to charge your battery from the solar on your roof. Imagine that, not only is the electricity in your home going to be free and clean from the sun, but your weekly fill up at the local gas station and the associated cost will become history.

Even though we know net metering will soon come to an end, the solution is in the works, the whole house battery. This will store your energy instead of the local utility. It's not there yet, it is still too expensive compared to the utility performing this function for free, but it is coming. Tesla is building what is known as the "Gigafactory" outside of Reno Nevada. When completed it will be the largest building in the world and will produce more batteries than all the battery factories in the world combined.

Thin film technology is in it's infancy now. It is a very thin film that looks like the tinted film we used to put on our windows to cut some of the sunlight out, yet it is solar and produces electricity. Imagine the tall building in almost every town that do not have enough roof space to fit enough solar panels to provide electricity for the entire building. Imagine, all the outer walls covered with a transparent solar film that makes the building one large electrical generation plant. The uses are endless.

The future is here now. There is no better time to go solar, get the tax credit, get grandfathered in net metering, make "time of use" pricing benefit you, and increase the value of your home immediately. In most utility districts you will pay more in electrical bills in ten years than what ownership of a solar system will cost you. If you are going to pay for it one way or another, you might as well own it.

FREQUENTLY ASKED QUESTIONS

Should I go Solar Now?

Q. Technology is always changing, should I wait and get a more advanced system later?

A. No. Computers are always changing, and yet you probably have one now. The same is true of wide screen TV's and Cell phones. There simply are too many advantages of going solar now, and too much too much to lose by waiting

Q. But prices are always coming down, doesn't it make sense to wait and buy the same system at a cheaper price later?

A. No, you see prices are not dropping as much as your utility bill is costing you each month. In other words, let's say you are going to save $100 per month on your utility. With the yearly increase in utility prices, over three years, you would spend over $3,600 plus annual increases ($100 X 36 months) by waiting. Yet the average price per system has not dropped by $3600 over the last three years. You lose money by waiting, because you will be saving so much.

Q. Are there any other reasons why not to wait?

A. Yes, probably the most important one. Remember NEM, net metering, where the utility buys your electricity from you during the day and gives it back to you at night. They want to change that, so that they pay you wholesale for the electricity that they take from you, and charge you retail for the electricity they give back to you. This is a big difference and will cost you dearly when it happens. But until it happens, everyone that enters the NEM or net metering program before it changes, should be grandfathered into the old system. In other words, "you snooze, you lose".

The Purchase

Q. If I purchase the solar system, how do I use the 30% investment tax credit.

A. The investment tax credit is a dollar for dollar credit on your taxes. If you owe $10,000 in taxes at the end of the year and have a $9,000 tax credit (assuming 30% of $30,000 solar system purchase), then your taxes now are reduced to only $1,000.

Q. What if I owe less taxes than my tax credit? What if my taxes are $5,000 and I have a $9,000 tax credit?
A. You can use $5,000 of your credit in one year and carry the other $4,000 forward to another year.

Q. What if I have a loan for the system and did not pay the full amount out of pocket. Do I still get the full 30% investment tax credit right away?
A. Yes, plus possible annual tax deductions on the interest on the loan.

Q. Can I miss out on the 30% tax credit if I wait to purchase solar?
A. Quite possibly. The 30% tax credit was due to expire at the end of 2016. It was extended to 2022, but it was extended by the Obama administration. The Trump Administration is pro coal and oil and not a friend of solar. Many believe he will abolish the federal tax credit sometime in his administration. Although if you get solar before it is ended, you will have till 2022 to utilize it

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bro·ker/ˈbrōkər/

noun

- a person who buys and sells goods or assets for others.

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