

# Solar Power Basics: Essentials You Should Know

## Topics Covered:

What is Solar Energy?

The Cost of Solar Energy

Why Is Solar Power Important?

Why You Should Choose to Use Solar Power

What You Need to Know About Solar Power

Using Solar Power

The Benefits of Solar Power

Why Are Solar Panels Important?

Storing Energy

Passive Solar Power

How Do You Find Renewable Energy?

Kids Can Learn About Solar Power

Make Your Own Solar Power Source

Concentrating Solar Power Systems

# Solar Power Basics: Essentials You Should Know

## What is Solar Energy?

In order to know where to find solar energy you must first know what solar energy is. Solar energy is energy from the sun. When the sun is shining solar energy is being produced as it sends the heat radiating to the earth. You can find solar energy anywhere or anything that the sun can shine on.

There is a way that you can save the sunlight in order to provide heat during the cold, which is what millions of people have done throughout the years. It started thousands of years ago when people were able to use a thick lens or magnifying glass on an object that would attract the sun rays on that particular object and could get so hot it would catch fire. This gave a new perspective on how strong the heat from the sun really was.

The problem with capturing the sun's heat is the fact that when it reaches the earth's surface it does not go to one particular spot. It is spread evenly over the earth where the sunlight is able to reach. When this happens you may find it difficult to heat something using only the sunlight. Although the area or object may be hot if left in the sun too long it will not reach the full heating potential of the sun's light.

In order to use the heat efficiently to heat a room after the sun goes down or when the sun is unable to shine because of clouds you will need to use a source that will attract the heat to one particular area. This source is called a solar collector. The solar collector attracts a lot of sunlight to one particular area allowing the sun to pass through the source and into the space.

The objects in the space absorb and hold the heat from the sunlight and trapping it so it will not get back out with the help of the source. Glass is a great solar collector because it allows the sun to pass through it and into the space but the heat from the sun can rarely escape leaving the space under the glass to become warm or hot from the heat. The objects in the space help to hold the heat as it comes in so that the space will stay warmer longer. This allows the area to be heated using solar power.

Because glass is a natural solar collector it makes it great to put into a greenhouse or a sun room. The glass attracts the sunlight and traps the heat inside so that the temperature in the greenhouse or sun room remain warm even at night when the temperature outside may be cold.

Solar energy can be found anywhere the sun shines but in order to fill the heat you must have direct sunlight for an extended period of time. If you just use the morning sun to heat your home your house may not stay warm through the night.

## **The Cost of Solar Energy**

Solar energy is a natural source of energy that comes directly from the sun. When solar energy hits the earth it spreads over the earth's surface and provides warmth evenly. If you could capture the sun's rays into a particular area for a long period of time it would provide enough warmth for nighttime or on cloudy days.

Learning where to find solar energy can help you to get started today. Solar energy does not cost anything because it comes from the sun. The source that you choose may cost some but in the long run it should be your only expense, unlike gas or oil heaters that you continue to pay for monthly in order to have power or gas heat in your home. Solar power can provide heating, cooling and ventilation.

If you want to make your own solar power to capture the energy for heating its easy to do if you can find a solar collector, which is anything that attracts the heat from the sun in a concentrated amount, such as glass or clear plastic. Getting into your car that has sat out in the hot sun all day long can be extremely hot and you have to roll down your windows to cool it off inside.

That is because the glass has attracted the sun and the objects in your car, including your seats, have trapped the heat not allowing it to escape. When you roll your windows down you are allowing the heat to escape causing your car to cool down. The same thing is true about greenhouses. The glass or clear plastic can attract the sun and not allow it to escape causing the greenhouse to maintain the heat for the plants to grow effectively.

In order to heat your home using solar energy, you need to know the information on a passive and an active home. These two types of solar homes offer the homeowner options to choose from and your cost of heating may be down. Solar energy does not only heat your home but it also heats your water and if you use solar energy lights it can light your home at night.

Passive homes do not use any equipment to heat the home. Passive homes use windows that are made to allow the maximum amount of sunlight into your home. The sunlight is controlled by keeping the doors closed in the hottest part of the day not allowing any heat to escape. At night thick curtains may be used on these windows so that the warmth stays inside during the night. This allows the sun to naturally heat your home without any help.

Active homes do use equipment to help circulate the heat in the home. Some of the equipment that may be used includes pumps, blowers and an alternative heating source in case the sunlight was not enough during the daytime. In order to heat the home with sunlight these homes use special boxes on the outside that attract the sunrays to it.

They are made from a dark colored metal to help attract the sun more. The water or air that is carried in the pipes and ductwork is heated by this glass box that has captured the sunlight. Then the heated water or air is then carried to the rest of the home.

In the long run, solar energy helps to heat the home naturally and without depending on a company to supply it for you. Solar energy can be found anywhere the sun is.

## **Why Is Solar Power Important?**

We have ways to heat our water, our homes and provide us with electricity. We probably take all of this for granted and if we lost them we would probably panic. We take for granted that these conveniences will be there for us from now on.

We expect glitches to happen but we want them to be fixable without going long without all of these. We appreciate the heat in the winter when it snows outside and when the temperatures drop. We need water to live and although it is usually running under the ground we want the convenience of it running through our pipes and into our homes.

Electricity is nice when you can have lights with just a simple flick of the switch. In the summertime we experience some power outages when everyone turns on their air conditioners in order to tolerate the extreme temperatures beating down from the sun. This heat is sometimes so intense it can make someone, who has trouble breathing, struggle for every breath.

The sun is a very intense ball of gas up in the atmosphere. It burns twenty four hours a day, seven days per week. We only see it during our daytime but on the other side of the globe they get the daytime when we get the night. When the sun light beams down on the earth's surface, a small percentage of the solar radiation heading for earth gets reflected. There are larger amounts of the sunlight that is actually absorbed.

When you consider the fact that the sunlight must go through fog, clouds, dust particles and harmful pollutants in order to reach us that reduce the amount of sunlight that we receive even more. When it finally makes it to the earth's surface it is then radiated back up into space. When it reaches the earth, plants and vegetation absorb it and the oceans, winds and other resources absorb the sunlight as well.

Some people use some of the heat generated from the sun in order to heat homes, power electricity and provide water to their families and businesses. When you think about all that you have that runs through a machine it may be possible to reroute that in order to run it all by sunlight. Scientists have only started to make this possible but it is far from being completed.

When you consider all the solar energy that reaches the earth's surface and then radiated back into the atmosphere, you could power electricity, heat and water from now on. This solar energy can be redirected and concentrated using special boxes that attract the light during the day to heat water and homes throughout the night.

Solar power is very important and provides a natural way to heat, obtain electricity and water with just a little more effort. In the future we may have no other choice but to look at natural resources in order to have these necessities and conveniences. Solar power is important now and in the future.

## Why You Should Choose to Use Solar Power

Life on earth is fueled by the light and heat from the sun. Approximately, 3850 Zettajoules (ZJ) per year is the total amount of solar energy available to the earth. The sun's energy travels to the earth by way of electromagnetic radiation like radio waves but the frequency range is different. Some of this energy is absorbed as it comes thru the atmosphere. Heat and light are the primary forms of solar energy.

Solar energy has many advantages over conventional energy. The energy from the sun is free the only expense is from recovering the energy. The cost of recovering the sun's energy is recovered faster than with conventional energy. The recovering units don't have to be connected to natural gas or power grids, they stand alone. The supply of solar energy is limitless. It has no emission gases to harm the earth's atmosphere.

There are several ways to recover solar energy:

**Focusing collectors:** This has a movable mirror, known as heliostats, is pointed to the sun and can provide a temperature around 4000 degrees C. This degree temperature is used for a solar furnace in industries and research. These solar furnaces don't contaminate our environment. The heliostats can focus the energy to a boiler that turns water into steam. To generate solar electricity, focusing collectors can be used.

**Flat plate collectors:** These collectors can be used in schools and homes to provide heat using water that is heated in pipes. They cannot provide as much heat as the focusing collectors because they are smaller.

**Solar distillation:** Solar distillation is about the same as flat plate collectors but provides distilled water instead of heat. Sea water is put in tanks or ditches on the roof of a house and the heat from the sun heats and evaporates the water and turns the water vapor into liquid water that is distilled.

**Solar electricity:** By using focusing collectors and Photovoltaic cells, made of thin pieces of semiconductors, convert radiation from the sun into electricity.

Solar energy would not be affected by the supply and demand of fuel for it is free and it doesn't pollute the atmosphere. It is natural and pure. It would provide us with better health.

There are several ways that we can work together in order to get the best of natural and renewable resources. Using solar power is not only helpful but it is inspiring to others. The expenses to using the solar energy are less than the cost of using other resources for heat, including electricity and gas. When you use electricity and gas you may have a low cost up front but in the end you end up paying for it from now on.

With solar power you may have an initial investment to turning your home into solar power but after that you have no reason to pay for it any further, unless you use electric or gas for a back up heating source. Solar power was available yesterday, it's available today and hopefully it will be available for us in the future.

## **What You Need to Know About Solar Power**

Solar power is everywhere because it comes from the sun. Solar power can be used to power electricity, pump water, to heat your home or office and power vehicles. With all that we can do with solar power you have to wonder why we don't do enough to conserve the solar power. We could use it for almost anything and it would cost a fraction of what we are paying now. You can make a difference by doing your part is making solar power something you can use.

In order to power energy with solar power you need to know the basics of solar power and how it works. It takes a long time for heat from the sunlight to reach the earth. Unless it is concentrated into a particular area the heat from the sun will be distributed evenly over the earth's surface where the sun is shining. When you want to use the natural sun light to power your electricity, heat or water you need to know the process to it.

You need to direct the sunlight to a concentrated area in order to have enough energy to power your source. Some of the biggest solar power towers are set up around the world. Solar power is not something that a few people are trying but solar power is about the future, everyone's future. When you use a light in your home you may not realize the process that brings that energy to that switch so when you flip it on you will have lights.

The energy that it takes to run power to our homes are not a natural way of energy. Conserving the energy that comes from the sun is the most natural way to equip our homes with energy, heat and more. When we use natural resources we save in several ways; by preserving the earth, cutting down on monthly and over all costs, and no inconvenient power outages.

Preserving the earth helps when you use natural resources that don't hurt the earth's atmosphere and everything in it. If we continue to use the power that we use today we may pollute the atmosphere so much that the right amount of sun will not be able to make it down to the earth's surface in the future.

Then we will have no other choice but to rely on our man made abilities to produce something that will cost us more than what it already does now. Pollutants will also harm life on earth as it starts to close in and start to harm us. Cutting down on monthly and over all costs can save you a lot of money in the future.

In the beginning you may pay a minimal amount to be solar power efficient by purchasing a solar source. You can buy indoor and outdoor lighting, solar power windows and insulated doors in order to make your home more solar efficient. After that initial expense you don't have the expense of paying a monthly bill to keep your service on. This also promotes others to use solar power to be more efficient.

When a storm blows through we are sometimes left without power for at least a day but sometimes more. When this happens we are so use to our conveniences that we have a hard time adjusting to going back to the basics when we are use to flipping on a light switch, using the microwave, taking a shower or bath assuming that the water can be pumped and heated the same as it always is.

Loading the dishwasher or washing the dishes, washing and drying clothes. All of these services require the power to be on and when it is off is when you miss the services. When you use solar power you are less likely to experience these down times because your power is generated by natural energy.

## **Using Solar Power**

When you think of solar power you think of heating and light for your home. That is one of the many things that we use solar power for. Solar power is everywhere and it is growing everyday. There are different products that are made using solar power. This article will list these products and their uses and also how solar power affects them. Solar power is using the sun's natural heat to produce electricity, heat, and more. When you use solar power you are using the natural resources found that cannot harm the earth in ways that other methods can.

There are more products that use solar power than what we realize. A lot of the electronics made will use some type of solar power in order to function completely and accurately. For example, calculators are solar power products. These calculators may or may not have on and off switches. Some rely on the solar panel completely in order to stay or turn off. Solar power calculators need a certain amount of light inside the solar panel in order to turn the calculator on and perform what you want it to do; add, subtract, divide, multiply and more.

The solar panel in a calculator is not as big as the one that you would to power your home. The size needed for a calculator is adjusted before installation to provide the right amount of what it needs. Solar power products can be found in travel products, outdoor recreation, safety products, emergency products and more.

Radios have are produced with a solar panel inside that transforms the sunlight into energy allowing you to listen to your radio while you are outside. You may also find solar power in flashlights, battery chargers, mobile phone chargers, watches, lanterns, emergency products such as sirens and lights.

As you see there are several products that are using the solar power technology. Portable chargers are great to use because they charge the product that you have using the sunlight just as easy as turning a calculator on. Camping equipment and supplies work well with solar power because it allows the sunlight during the day to supply their lanterns, flashlights and radios at night.

Cooking outdoors can also be done by using solar power in order to heat the element that will ignite and allow for even cooking. Because more people are turning to solar power for their future energy source there are companies that are marketing products that are produced using solar power.

Appliances are being made for solar power homes. These appliances, refrigerators, stoves, dishwashers, and more will work great in a home that is generated by solar power. They are built to conserve energy even more so than the products available to everyone.

In the future when everything turns to solar power in order to work we will be prepared using the knowledge and the products that are available today. We can't predict the future in solar power but we can all do our best to make it happen.

## **The Benefits of Solar Power**

The sun produces massive amounts of heat that are transmitted down to the earth's surface. When the sun's rays reach the earth's surface the intensity of the heat directly from the sun is not as hot because some of the heat is rerouted before it reaches the earth's atmosphere. When the sun is hot and it is summer time we think that it couldn't get much hotter as the mid day sun makes your run for shade, but it can get hotter if it wasn't rerouted.

Solar power can be hot enough to power machinery and that is exactly what was discovered over one hundred years ago when a man working on machinery wondered if steam from the heat of the day could be used to power machinery. He was right and thus began a new form of production, heat and electricity.

Today solar power is being used all around the world. The solar power is being concentrated into a solar source where the heat is used in a variety of ways. We still rely on our way of heating and powering our homes but in the future it may all be powered by the sun. It is cost effective to use solar power as the only expense you have is in your solar source.

In order to use solar power you will need to have something that can attract the sun and allow the heat to be concentrated where it can stay warm for a long period of time. This is fairly easy when you consider all the knowledge and resources that we already have access to. When you use solar power for heating and power electricity you cannot go wrong.

Solar power is entrusted in space shuttles as they know that this will help produce the most efficient energy with the least amount of complications. The solar panels are faced toward the sun at all times in order to be able to power the shuttle efficiently. There are fewer problems from solar power than with other methods.

Even though there are days that there are clouds in the sky and rain, snow or other weather, it is still possible to produce enough heat in your solar source to create enough energy to last until the sun can come back down. Solar power is in our future we need to be ready for it. Right now solar power is only being used by those who are more aware and worried about our earth's atmosphere when it is a concern that we should all be worried about.

We can learn a lot from the past and the way that solar power was used. Every minute of the sunlight was used doing everything that needed done because after the sun went down there was no more light. I don't think we could do that now. Solar power has so many benefits for us that we don't realize all of them and how it is more efficient to use the solar power than other ways.

## **Why Are Solar Panels Important?**

Solar panels convert the sun's energy into usable forms. Solar panels can be a certain kind of device that attracts the sun to use the sun to power machinery that can transfer the heat from the sun into whatever they need.

We could use solar panels to convert the heat from the sun into the energy we need to power things that run. Solar panels are common and can be seen in a lot of different products, such as calculators, satellites, or even space ships. Solar panels are an effective way to redirect the sunlight and use it for electricity.

It all starts over one hundred years ago when a man got the idea to use the heat from the sun to power his machinery. The main focus was to use the steam from the hot sun light in order to start and maintain their machines. This new revelation peaked the interest of several scientists who did not waste any time traveling to see how this discovery worked. Since then, there have been groundbreaking products that have increased the convenience and the need to use a natural resource such as the sun in order to work machinery.

Solar panels can be different shapes and sizes but their main purpose is to convert the light in order to make electricity. Photovoltaic, or PV, is the process of converting the light into electricity. Photovoltaic cells are self-generating and consist of a very thin film made of silicon. This film is placed on a semiconductor layer that can be found on an iron substrate. The photovoltaic cells are very important in producing enough sunlight and heat in order to successfully produce the energy that is needed in order to heat up water, heat homes and power electricity.

Solar panels can be found in all different shapes and sizes including round, square, and rectangle. You can see them on top of buildings and houses or standing alone in fields. Solar panels are in hand-held devices and they are in energy-efficient appliances. The sun is a wonderful natural resource and can greatly cater to our way of life. The study of natural resources like the sun is ongoing and the improvement that can be made in the future is anyone's guess but you can't go wrong when you use natural resources.

Because this new way of production was in trial and error stage, it was somewhat expensive to turn your home or business into a natural way to heat and power. But since things have changed and newer material has surfaced and since we know more about the solar panels the cost is not as high, although it is still higher than using man-made methods of producing heat and electricity.

In the long run using solar panels for all your electric needs will save you money in the long run because you won't have to worry about paying for your power. As long as the sun shines you will have power. On days that are too cloudy for the sun to break through to the earth, your system should still be adequate enough to carry the electricity through another day.

## **Storing Energy**

We have come to rely completely on energy. We use it in almost everything we do; we live in it, use it for all our modern conveniences and more. Without energy we wouldn't know what to do. In the past, before energy, there were lanterns for light and matches and wood for heat. That was the only options people had.

When power was accessible to everyone by running power lines through cities, towns, residential areas to allow everyone to tap into the new generation, people were skeptical as to how this would affect everyone in the future.

Over the years, appliances became energy friendly, which made for less manual labor and more free time. Wash machines, dryers, dishwashers and the latest in cooking stoves that no longer needed wood. These were all great inventions and although people were skeptical they still took advantage of these appliances. Today we have the worry of saving the energy that we know and love so well.

Our energy is fueled by non-renewable resources which will allow the depletion of these resources slowly and over time where we won't realize it until it is gone. We need to find an alternative to the way we power our energy but we also need to store the energy that we already have.

Solar energy has been tested and experimented with as we learn more and more about how to conserve and store the natural heat from the sunlight. We all know how effective it is and why it is something that we should work very hard at conserving. Storing the solar energy can mean endless usage of water and other necessities by using conservative methods of saving energy.

Thermal mass systems are the process of using natural resources to make material that will store solar energy. This type of storage uses renewable resources from the earth, such as dirt, water and man made resources such as concrete to help store energy if only for a short period of time. Thermal mass can help heat water at night or heat your home long after the sun goes down or on cloudy days when the sun doesn't peak through the clouds at all. These need to be worked on because there is no extensive long storage capability using solar power just yet.

Then you have the thermo-chemically phase which uses types of devices to store heat. Some examples of this type of storage includes

Paraffin wax inside of a storage tank. When the paraffin wax is cold it is solid but when it is heated it is a liquid that can help hold heat for a very long time without cooling it down. As the paraffin wax cools it becomes hard which can hold the heat in longer.

Eutectic Salts are inexpensive and can store heat in a heating system which will distribute the heat evenly and lasting hotter longer.

Molten Salts are an effective way to store solar energy because it allows the heat to remain hot without being non-flammable and cost effective. During the time that the storage tank is heating up, the salt mixture is heated and then used to make steam.

Rechargeable batteries can be a great way to store energy. This type of storage allows the power source connected to the battery maintain its power. Lead acid batteries are the more common battery used for this type of storage.

As you see there are several ways that we can store natural energy we just need to learn how to make these methods more practical and efficient. When we figure it out we will have an unlimited supply of natural heat.

## **Passive Solar Power**

It is a well known fact that the sun is the strongest from the south. People who want to conserve solar power uses this theory in order to get the most sun into their houses with minimal expense. If you are building a home that you want to be solar power, it is best to put the most windows facing the south side. Although it is not always true, depending on where you live, it is a general rule to go by.

Passive technology turns sunlight into heat that can be used for several things, including ventilation and cooling. You can heat homes and businesses with passive solar. Passive solar systems depend on gravity fed and natural resources in order to make passive solar work. If it uses a pump or fan to force the liquid through, than it is an active solar.

Passive solar technology offers direct and indirect gain for heating spaces, water heating systems, use of thermal mass and also phase change materials which helps to regulate the temperature indoors. There is also the solar cooking equipment, the solar chimney which allows for ventilation and earth sheltering.

Passive solar can also be found in a solar furnace and solar forge, although these are a little more complicated. Sun rooms are another example of passive solar power as it lets the sun come into the room without allowing it to escape. There is no mechanism or no engine to power just the clear panes of glass attracting the sun and trapping it within.

Solar gain is referring to the increase in temperature in an area, an object or a structure that is a result of solar radiation. The stronger the sun the more solar gain you have. A solar furnace is any huge object that is created in order to channel the heat directly to one place. The heat can be unbearable but it does produce a lot of electricity from it.

Temperatures can reach up to 3,000 degrees. When you compare the expenses associated with passive solar you realize that the cost of passive solar is minimal when you compare it to active wear.

Because there is no mechanism to power it makes it more affordable. With active solar you must have a device that can power the heat that you take in and used it. Passive solar is the most popular with those who are experimenting with the conception of solar power and may find that they like it enough to stick to it. When you are ready for an upgrade it is easy to move up to active power.

Adding a mechanism that will easily and conveniently pump the water on through the source is an effective way of combining today's technology with conservation and preservation that we have access to.

Passive solar power is something that we will be seeing a lot of in the future as the need for solar power becomes more in demand. There will come a time when even those who depend on active solar may have to switch to passive solar.

## **How Do You Find Renewable Energy?**

We already know that the use of electricity, gas and coal are all resources that we may eventually run out of. These are the non-renewable resources that we rely heavily on today. We use these non-renewable resources to do many things, including supplying us with power, heating our homes, businesses and schools and more. When we use all the non-renewable resources up and there are no more to gather, then what?

How will we go without the convenience that we are so accustomed to? It's nice to flip a switch to get power and it is even better when the latest technology allows us to press a button to do all the things that women and men had to work for hours to accomplish. We are fortunate to live in a world with so many modern gadgets. Unfortunately when we lose it we may be so accustomed to the modern perks that we will not know what to do when we don't have them any longer.

What we have to rely on in the future is renewable resources. These resources are all resources that offer us an abundant supply and will never run out. They recharge and allow us to enjoy them again and again. The renewable resources consist of Solar, Wind, Biomass, Hydrogen, Geothermal, Ocean, and Hydropower We need all of these and right now we have access to each one of them. What do they do and how do they help us with solar power? Let's find out.

Solar refers to the solar energy that we get everyday either directly or indirectly from the sun. Solar energy can be used for several things, such as heating, electricity to home, schools, businesses, or buildings, heating water, cooling and ventilation.

Wind helps the sun's heat down to earth. When the wind combines with the heat of the sun, it causes evaporation. When the water turns into precipitation it produces energy that can then be captured by hydropower.

Hydropower takes energy from flowing water and captures it turning it into electricity. Hydropower is very complicated and requires a great deal of technology in order to successfully accumulate energy from water.

Biomass is an organic matter that can help to make up the plants. It can be used for the production of electricity, transport fuels or chemicals.

Hydrogen is the most abundant element found on earth, usually with other elements. If hydrogen is found alone it can be burned or converted into electricity.

Geothermal looks toward the inner parts of the earth for heat and can be used for power, heating, and cooling.

Ocean produces thermal energy using the heat from the sun. It can also use mechanical energy for the tides and waves.

As you can see the renewable resources are all around us. We know what they do and how we can use them. There are so many benefits to using renewable resources. If we don't use them now we may not have a choice later. The knowledge we learn from today will help us use the energy more wisely.

### **Kids Can Learn About Solar Power**

Kids today can learn about so many different things. We have a way to teach them about solar power. This resource will be their future and will depend on how we take care of it today. Solar power can be anywhere the sun shines and you can feel and see the warmth. Solar power can heat water, heat homes, schools, businesses, and it can produce energy. Teaching kids today how solar power works and how we can use it wisely will ensure that our future and theirs will be protected.

First of all, learning about the harmful affects of our energy usage today is important for them to understand why there should be another way to produce energy. Because the electricity that we use today comes from non-renewable resources we are setting ourselves up for a big fall. When that resource runs out we will rely on an alternative to supply our power. Scientist are working today to ensure that when we do run out of that resource we will be able to switch over to another way without missing a beat.

The problem with that is we shouldn't wait until that resource is gone to switch over. We should be able to switch in the near future and preserve what we have left. Another problem with our energy production today is that it is harmful to the environment. It pollutes the air and will eventually make it impossible for us to use the sun as a natural resource. We can't afford to lose that important alternative. In order to save our environment we need to teach the kids how we can all join together in order to save there solar power.

Solar power can generate energy using natural resources and man made solar sources that will attract the solar power to the source. In order to make this affective we need to be able to find solar sources that are not expensive but can provide the solar power that we need. A standard home can benefit greatly to switching over to solar power.

It is easy to do. Also when you build your home you can build it using solar power as a way to naturally generate electricity into your home, heat your water, and other functions that can be controlled by using solar power. In the long run, we benefit by not paying for a resource that is slowly taking away from a natural resource. Our kids will be rewarded for our careful planning.

All ages can benefit from conserving solar power but it needs to start now in order to benefit the future. Teaching the kids the way to save the energy and how we need to come up with a

way to save the solar power in the future in order to supply heating, water, and other necessities in large quantities rather than by individual houses, which is how we do it today. One day we may not need to run power lines through fields, streets and yards because we will all have solar power boxes in the back yard instead.

## **Make Your Own Solar Power Source**

Solar power can be found in several different places on the earth. You can find solar power in a parked car, in a building with no air circulating, in a home without windows opened or fans circulating the air. When you step into any of these places that have been in the sunlight for a while you soon become overpowered by the amount and the intensity of the heat. This kind of heat can be taken and converted into heat that can heat your home, your water, an outbuilding, or any other building you would like to have heat in.

Heating by solar power is a free way of heating. When you heat using solar power you use a source that will direct the heat from the sunlight during the daytime to your solar source. A solar source is a device that you use to attract and trap the heat from the sun.

Just like a car out in the parking lot gets hot when it faces the midday sun and the windows are rolled up. The seats can become very hot, too hot to sit on. These seats are a solar source because they trapped the heat inside and didn't want to let them go. When this happens the seats will still be warm long after the sun quits shining directly on that car.

Creating a solar source can be easy to do with a little thought put into it. With a solar source you need to think about all the things that attract the sun, such as metal, the color black, glass that is tinted or clear, mirrors and more. There is an endless supply of idea to signal the heat your way and trap it for your use.

To get the heat to benefit your water system or even your heat, you need to come up with a way that you can circulate a liquid that when it passes by your solar source it will heat the water naturally because of the concentrated amount of heat that was trapped inside your solar source that day.

When the liquid carries through the solar source and travels into the home it can go directly to the water source where it can be kept warm, like a hot water tank, but naturally without using gas and electricity to keep it warm. This solar source can be a great challenge to create but you will enjoy the rewards for years to come. You can also find solar sources in stores as well as online. Shopping for solar power items has never been easier and it is not expensive.

Coming up with a solution that will carry the heat into the home is simple and practical. If your idea is successful you will have heat during the winter and warm water all year around. The main goal is not only to preserve the natural resources and the environment but it is cost effective when you can use something that is natural that you need to use.

## **Concentrating Solar Power Systems**

If you have ever seen a field with several mirrors pointing toward the sun you may be looking at a solar power system. These systems work to concentrate the sunlight to one area and use the heat to heat up the liquid that flows along the pipes. This system is called Parabolic-trough system. This type of system heats oil that is flowing through the pipe. The oil is hot and that is why it is used to boil water to power a steam generator which in turns powers electricity.

The reason that this system works so well is because the U-shaped mirrors attracts and collects the suns heat which is then transferred onto the receiver. The receiver absorbs the heat and transfers into fluid which helps to power the engine. The heat causes the fluid to swell up against the piston and that produces mechanical power. This type of power can be used to run things like generators or even an alternator that will produce electricity.

This system works great when because it uses molten salt that flows through the receiver. When the salt heats up it can generate electricity through the steam generator. The salt holds in the heat for several days before it has to be converted into electricity. Because this system uses so many panels it is mainly used for industrial solar power where acres of land can be donated to the Parabolic Trough. There can be enough power in the network that can create energy for several days or more. Because this system is so large that it allows the heat that it saves to be transferred days later.

Through this project and other solar power projects we can understand fully how solar power works. When we see how much solar power is conserved using these U shaped mirrors we can also understand how much energy is lost. Using concentrating solar power systems are beneficial to the businesses that use them because they won't have so much time down when the power fails.

Machinery is their only major concern and as long as their machines are taken care of there should be no problems. Industrial type of solar power can attract and trap a lot of heat from the sun during the day, especially using mirrors that will reflect the sunlight. It also helps to have this type of solar power out in an open field free of trees and vegetation that may grow around and at some point crowd the solar light out.

Scientist are continuously studying this theory as businesses use it to power their machinery. Steam power was what was used from the beginning with solar power and is still what most systems depend on to service their production needs. In the future, fields may eventually be full of mirrors that somewhat point up to the sky in hopes of generating enough sunlight to heat the world. Until then we will use the traditional methods of heating water, heating our homes and powering our electricity.