A GUIDE TO

SOLAR ENERGY

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“The Secrets of Building Your Own Solar Energy...  
...for Less than $200.”

[Click here](www.wi-kan-iko.co.uk/DIY_Energy.html) to learn the secrets of building your own solar energy for less than you think.
What is Solar Power?

More and more homes, offices and devices are now relying on solar power as people are becoming more aware of the potential dangers of other unnatural sources of power. It is important that you know more about the idea to determine if it is the best option for you. Solar power can render several benefits for the long term. You can take advantage of the features by choosing the right type and maximizing the effect right in your own home.

About Solar

Solar power is described as the creation of electricity straight from the sun. The generation can be direct with the use of PV or photovoltaics or indirect via CSP or concentrating solar power. CSP is done by using the energy of the sun to focus and boil water which will eventually create solar power. Solar power has the capacity to give more than 1000 times the total world energy consumption back in 2008. However, solar power only comprised 0.02% of the total in 2008.

If solar power will be used double every 2 to 3 years, it can become the dominate source of energy for the century. The biggest solar power plants, are concentrating solar thermal plants, although new multi-megawatt photovoltaic plants have also been created. More and more countries are investing in the bigger photovoltaic power stations, like Germany and Portugal.

More Solar Power

Terrestrial solar power is a predictable and intermittent source of energy, which means even though solar power is not readily available all the time, people can still predict it using a certain degree of accuracy when the energy source will or will not be available. A number of technologies, like the solar thermal concentrators, include an element of thermal storage, such as molten salts.

These come in the form of heat and are considered as store spare solar energy that can readily be made available overnight or at times when solar power is not available to create electricity. Orbital solar power collection also avoids the intermittent use, although satellite launching and beaming of the gathered power are required to get antennas on Earth. The enhanced intensity of the sunlight over the atmosphere also tends to boost the generation efficiency.

About Solar Energy

Solar energy, heat and radiant light that emanates from the sun have been controlled by humans beginning the ancient periods using a wide range of evolving technologies. Solar radiation, together with secondary solar-powered resources like biomass, wind, wave and hydroelectricity are accountable for majority of the available renewable energy on Earth. Only a small fraction of the available solar energy is utilized.

Solar powered electrical generation depends on photovoltaics and heat engines. The uses of solar energy are only limited by human ingenuity. Some of the other uses of solar energy include space cooling and heating via solar architecture, solar hot water, solar cooking, potable water via distillation and disinfection, daylighting and high temperature process heat for industrial functions. Solar panels are one of the most effective and basic ways to gather solar energy.
History Of Solar Energy

When people talk about solar energy, a lot of people think of certain solar energy sources that are pretty common to them, such as wood, and even dried animal droppings. Aside from these possible sources of solar energy, people also associate the concept of solar energy as one of the possible causes for global warming.

However, there are still a lot of things that people do not know or fully understand about solar energy just yet, like what it is exactly, and how to use it to its utmost potential. In order for you to fully understand more about solar and sustainable energy, and what the future holds for it, you need to learn more about the history of solar energy. This article will give you a chance to delve in deeper into solar energy’s fascinating history.

Historical Role Of Solar Energy

One of the more common and more popular roles that the sun, or solar energy, played during those ancient times is that of a force that is able to sustain life based on its ability to give off renewable energy. This is probably the main reason as to why the people during those times, especially in native South and North America, as well as in other parts of the world, worshipped the Sun.

Ancient Greece built temples devoted to worshipping their sun deities, namely, Helio and Apollo. Also, the Greek’s use of solar energy were not limited to religious purposes, as they even used the solar energy system to incorporate passive solar design in the construction of their houses.

The Romans simply improved the Greek’s design and also incorporated windows into their structures, allowing them to be able to trap more solar heat. This actually played a role in their ability to produce a good growing condition for plants.

Solar Hot Water Heater Prototype

Unknown to a lot of people, but the original prototype for solar hot water heaters is actually a result of do-it-yourself projects of people in their hopes to be able to boil water, and keeping the water hot for a longer period of time. Scientists during the 18th century were able to discover that covering a box with a glass top while heating it would actually get the water to reach boiling temperature. But it wasn’t until someone tried to separate the solar heat collector with the water tank that the first prototype for solar hot water heaters was created.

Discovery Of Solar Energy Cells

Solar energy cells, also known as PV cells, are actually created when three Americans discovered that building transistors with silicon. This was during the 1950’s. PV cells weren’t actually an affordable solar energy source back then, however, due to its practical use in the satellite industry, the solar energy cell industry became sustainable. PV cells serve as the main fuel source for satellites out in space.

Solar Energy Today

Nowadays, in our more technologically advanced times, solar energy has now garnered a lot of renewed interest and focus, especially since solar energy has now become more affordable, and offers more use and application in our modern day needs. Solar energy cells are actually being used in a lot of businesses and homes today, and are even responsible for powering most household appliances, office equipments, and are even used to power cars.
Heat and Solar Energy

Solar heating systems incorporate several principles on the conversion of solar energy into solar thermal energy, as well as the physical behavior of heat. The primary principle that people need to know more about include solar home heating, which involves getting solar energy and transforming it into heat. You will better appreciate solar heating systems and solar energy as a whole by knowing how the process works. Here is some more info.

About the Collectors
A solar energy collector gets the radiant energy from the sun to be converted into heat. A solar collector transforms solar energy into heat by taking advantage of the greenhouse effect. The solar energy will go through a layer of glazed glass, and then be absorbed by the material underneath. The solar energy will excite the molecules in the material beneath, leading to heat. The glass glazing will keep the heat from escaping, and will capture the heat effectively. As soon as the heat is captured, people can put the energy into good use.

Basic Heat Principles
Heat is described as a form of energy that is related to the movement of molecules. Once the electromagnetic waves that emanate from the sun hit an object, these will excite the molecules of the object, triggering movement. The movement of the molecules is then referred to as heat. Heat is constantly moving from high to low temperatures until the temperature becomes even. The process is known as heat transfer.

If a person puts two objects next to each other, the warmer object will start to cool down as the heat is moved to the cooler object. The cooler object will warm up afterwards. The transfer of heat is triggered by the difference in the temperature of the objects. The rate of heat transfer is proportional to the difference in temperature. The bigger the difference in temperature between the items, the heat movement will be faster.

Heat Movement Assessment
It is important that people know more about the movement of heat to fully appreciate solar thermal energy. Passive solar energy applications use a lot of heat movement. The 3 common physical ways that heat moves include convection, conduction and radiation. Conduction is the transfer of heat via a solid material, or from a single material to another where the surfaces are in contact with each other. Heat is conducted quickly via a solid material compared to layers. Convection is the heat transfer by a moving fluid such as water or air. Radiation is the direct transfer of heat through space via electromagnetic waves coming from a warmer object to a cooler object.

Choosing the Application
Knowing the various types of heat transfer will help you choose the ideal application that will ultimately become beneficial for your home or office. Make sure that you also get all the materials needed for your solar heating system. You can stay comfortable even on long cold months by choosing the right type and knowing the devices and positioning that will guarantee you safe and effective results.
Solar Panels

The solar panel is the most basic element of a solar power system. It primarily functions to gather sunlight during certain periods of the day to power different devices and structures. Depending on the size, solar panels can power anything from RVs to huge plants. It is also important that you understand how the panels work and where you can apply these so that you can get the most benefits. Here are some more details and info about the material.

What are Solar Panels?
Solar energy starts with the sun. Solar panels are also known as photovoltaics and are primarily used to convert light from the sun. These are made of energy particles called photons that are changed into electricity to power various electrical loads. Light from the sun is considered as a renewable energy resource that gives clean energy. Solar panels can be used for different applications like remote power systems for cabins, remote sensing, telecommunications equipment and to produce electricity for commercial and residential panel systems.

The History
The development of the solar energy began more than a century ago. During the early days, solar power was used mainly to produce steam for drive machinery. Henri Becquerel discovered the photovoltaic effect that allowed the conversion of solar electric energy. Becquerel's discovery triggered the invention of the first true solar cell by Charles Fritts in 1893, which was created by coating selenium sheets with a thin gold layer. The solar panel was then created afterwards.

Russel Ohl is an American inventor who used to work for Bell Laboratories. He patented the first silicon solar cell in the world in 1941. The first solar panel was produced by the same company in 1954 because of Ohl's creation. The new solar panels were used first in space satellites. During the 1970s, more people saw the use of solar panels through the newly designed calculators that can run easily under light.

At present solar panels and full solar panel systems are used to power different applications and structures. Aside from calculators, solar panels are now used to give power to homes, commercial buildings and other huge structures.

Letting the Solar Panels Work
Solar panels can gather clean renewable energy in sunlight form that will be converted into electricity. The average home has adequate roof area to let solar panels gather enough sun to be converted into DC current or AC current. Solar panel arrays can be sized to meet big requirements. The AC current can power loads in the house and other commercial buildings. It is important to consider the part of the house, as well as the right angle of the sun so that the solar panels can gather the most light over more hours of the day for optimum results.

You can choose to build your own solar panels or just order a pre-made one online. There are also a number of stores that offer solar panels, depending on the use you need. You can hire some experts to help you determine the right part of the house or structure where you need it installed. You should also talk to other solar panel owners to help you maximize the benefits.
All About Solar Panels

Solar panels are now widely available all over the globe. You will find several homes, commercial buildings and vehicles relying mainly on solar panels to generate the electricity they need. Solar panels can also be made independently by the user. You can save more in costs by building your own system. You can also invest in a ready-made design for added ease and convenience. Here are some more tips and tricks on how to begin.

The Benefits
If you choose to use solar panels, you can produce electricity that can power various applications. Off-grid living means residing in a location where the main electric utility grid does not service your home or office. There are remote cabins and homes that can benefit from solar power systems. It is no longer needed to pay huge bills to install electric utility posts and cabling from the nearest grid access main point. A solar electric system is less expensive and can give you power for up to 30 years if you maintain it well.

Solar power is also a renewable source of energy, which means that it is very clean. Today, it is more important to invest in devices that do not damage the environment and atmosphere. Solar panels do not have any moving parts and will need only minimal maintenance. As soon as the system has paid for its initial installation costs, you can get the benefits for several decades more for free.

Buying Solar Panels
There are plenty of places where you can buy the best solar panel models. You can choose between brands such as Sharp, BP Solar and General Electric. You should visit some of the manufacturer web sites to determine the process and the ways how their solar panels are built. You should also read about the background of the company and what their objectives are in making these pieces. You should read more about installation to check if you want to install or build the panels yourself or hire a professional.

There are several web sites, online forums and internet stores where you can learn more about the available models and how these can best suit your location. Some panels are intended for individuals living in places that have minimal sun, while other designs are specifically made to gather the most sun over the shortest span of time.

About Price
Learn how to compare between types to know how much you need to pay for. The prices of the solar panels will vary depending on the brand and the size. There are also other factors to consider such as maintenance and if the package includes free installation. Some companies will ask for fees to install the panels, while other buyers may opt to install these themselves to save more. Talk to other people who have already tried certain makes and brands and let them give you the pros and cons of each. Ask for referrals and recommendations to ensure that you are only investing in the best places.
The Types of Solar Energy

Solar energy is present in different kinds. This is categorized according to the manner of conversion, as well as the type of energy that it gets converted into. It is important that you learn more about the types so that you can see how much energy you will need for your setup. The levels and features will also differ based on the type. Knowing the categories will help you determine if it is wise to pick a certain system or not. Here is some more info.

The First Category

The first way to view solar energy will depend on how the energy is transformed into useful energy. There are a couple of types in this category - passive solar energy and active solar energy. Passive solar energy describes the harnessing of the energy of the sun without the need for mechanical devices. You can use windows that face south to give you natural light and additional heat for the home. There are many solar applications that a homeowner can rely on to get the most benefits out of passive solar energy like passive cooling, passive solar heating and daylighting.

Active solar energy involves the use of mechanical devices in collecting, storing and distributing solar energy inside the home. Pumps, for example, are used in active solar energy water heating systems to circulate the water through the system. There are plenty of solar applications that a homeowner can use to get the most out of active solar energy. Included are active solar space heating, active solar pool heating and active solar water heating.

According to Energy Type

The second means of viewing solar energy relies on the kind of energy that it converts into. There are 3 kinds that belong in this category namely photovoltaic solar power, solar thermal energy and concentrating solar power.

Active solar space heating is done to heat the air within the house. It uses mechanical tools and equipment like fans, pumps and blowers to help people gather, store and distribute the heat all over the home. The systems can be air-based or liquid-based. Liquid-based systems involve the use of large water tanks or thermal mass for the storage of heat. Distribution is managed through radiant slab systems, hot-water baseboards and central forced air systems. Air-based systems involve rock bins or thermal mass that hold the heated air for storing. The hot air is circulated within the home using blowers and ducts.

About the Energies

Solar thermal energy is the energy made by transforming solar energy into heat. There are plenty of solar applications that a homeowner can use to get the many benefits of solar thermal energy, such as solar space heating, solar pool heating, solar water heating and solar thermal cooling. Photovoltaic solar power is described as the energy made by converting solar power into electricity via photovoltaic solar cells. There are many solar applications that homeowners can take advantage of using photovoltaic power like solar electricity, photovoltaic solar lighting and photovoltaic cooling. Concentrating solar power or CSP is used to create solar power electricity.
The Types of Solar Electric Systems

Electric systems have been created because of the rise of solar power as a reliable and cheap source of energy. There are now different techniques, methods and systems that depend on solar power to run plants, houses and offices effectively. You should learn more about these systems to determine the best types that will provide you with the most benefits. You can choose to make your own or just purchase one from top manufacturers.

The Stand Alone System
There are small stand-alone electric systems that are very good at giving economical electricity. These systems are mainly used to power RV, lighting, backup power systems, portable power systems and cabins. The size of the array of photovoltaics or the number of solar panels, as well as the battery will rely on the individual power requirements.

The solar panels charge the battery during daylight periods and the battery will provide power to the inverter whenever required. The inverter transforms the 12 volt batteries DC power into 120 volt AC power. This is the most useful kind of current for majority of applications. The charge controller will terminate the charging once the battery reaches the full charge. The batteries will not gas out this way and battery longevity is enhanced.

Grid-Tie Solar System
The grid-tie solar system is very useful for homes that are already linked to the utility grid. The primary advantage of this kind of system is the cheap price of utility. The system needs to be wired with an inverter that creates pure-sine-wave AC electricity, which is needed for linking to the utility grid. Another benefit of this electric system type is the tax incentives. There are also rebates provided depending on the local agency and the state.

If you own a grid-tied system in California, you can make use of some programs that will minimize the total cost of the system. Majority of the system usually do not include the battery storage that lets power in once the utility does not work. Grid-tie systems are installed using battery backup power to maintain critical loads even in the presence of a power failure.

The Full Stand-Alone
The complete or full stand-alone system is very useful for complete independence from electric utility companies and fossil fuels. The benefit of the system is the capacity to provide power away from the utility, as well as creating a measure of self independence. The complete stand-alone home solar system will usually have a couple of inverters to supply the AC house current needed to power very big loads like air conditioners.

An available second inverter will help make sure that power is present if one of the inverters will need servicing. Self-contained systems like these require an adequate battery keeping capacity to give electricity when solar power is not available because of prolonged adverse weather conditions. The complete stand-alone system usually needs 20 solar panels for safe battery keeping and adequate charging. You may ask an expert to help you decide between systems to that you get the most out of your investment.
The Use of Passive Solar Energy

There are two kinds of solar energy according to how the energy is converted. Active solar energy is defined as creating energy with the help of mechanical devices. Passive solar energy does not require the use of mechanical devices and provides you the advantage of getting energy nonstop and in a more cost-effective manner. Passive solar energy is further divided into different categories. Here are some more tips and guidelines on the kind.

On Orientation
There are a number of principles that you have to keep in mind to take advantage of passive solar energy fully. The applications will rely on the specific location and climate you belong to. Orientation refers to the positioning of the home so that you get most of the sun's rays to heat and minimize the impact for cooling. Shading is vital in managing the natural light and temperature of the home.

Shade can be given by other structural elements. Insulation refers to keeping a warm home during the winter and a cool house during the summer. Thermal mass refers to heat storage during daytime and its release after the sun is gone. The windows will make sure that the home stays comfortable any day of the year. Ventilation refers to maintaining the cool inside the home during extra hot days.

Passive Solar Heating
Passive solar heating belongs to the category of solar space heating. The heating process can be done by orienting the home well so that most of the windows face to the south. The windows should be sized properly too, so that optimal heat gain will be attained. The home has to be insulated to reduce loss of heat. Passive cooling is a kind of solar cooling. The main idea behind passive cooling is to reduce the impact of the sun by orienting the landscape and the house so that you get the most benefits out of cool breezes.

The home also has to be designed to reduce barriers to air paths through the home to let natural ventilation in. You need to use the right type and size of windows to reduce the heat during extra hot days. Landscaping and structural features can be used to make shade. The home also has to be insulated well to keep the right temperature.

On Daylighting
Daylighting is a kind of solar energy lighting. It is described as the use of natural light to illuminate the house. Good daylighting provides the right light to all your rooms, while minimizing costs in utilities and electricity. You can daylight the house well by sizing and positioning the windows so that natural light freely enters the home. You should also use exterior shading that will diffuse the light.

Passive solar energy is considered as a natural and very cost-effective way to maintain your home. You can save so much in the long run and expect to have the right light and temperature inside your home for years to come. Talk to experts on how you can install the right elements.
Introduction to Active Solar Energy

Active solar energy is used by several homes, offices and other structures today because of its many benefits. Generally, active solar energy is described as the use of mechanical devices to gather, store and distribute solar energy inside the home. Active solar energy water heating systems use pumps so that water is circulated well within the system. There are several applications that you can try depending on your setup. Here are some tips.

The Advantages
Active solar energy can provide people with many benefits. It can be used on your present home regardless of the current design or orientation. Active solar energy can produce a lot more solar thermal energy compared to passive solar energy. The heat energy created can be used easily all throughout the house. Electricity requirements are also reduced thereby boosting your savings.

The Components
There are three main components in active solar energy. First is solar energy collection which involves the use of solar collectors. The most basic collector is the flat-plate collector. This is an insulated box covered with glass. Inside the box, you will see black absorber plates that absorb solar energy and transform it into heat. The heat energy is moved to a fluid, air or water that will flow through the collector. This will ensure if the system is air-based or liquid-based. Solar energy storage can be done using thermal mass or water tanks for liquid based systems. Air-based systems will have to rely on rock bins to contain the heated air. Solar energy distribution is the third component which is based on the kind of system.

The Types
There are 3 types of active solar applications that you can readily use in the home namely active solar pool heating, active solar space heating and active solar water heating. Active solar space heating can heat air inside the house by using pumps, blowers and fans that will distribute and gather heat. The systems can be either air-based or liquid-based. Air-based systems use rock bins or thermal mass, while liquid-based systems use thermal mass or water tanks.

Active solar water heating can heat water in the home with the use of pumps. There are two kinds of solar water heating systems namely direct and indirect systems. Direct systems heat the current household water in solar collectors. Water is pumped to a tank after heating. Indirect systems use heat transfer fluid. The fluid is heated in solar collectors, then pumped to a storage tank. This is also known as a closed-loop system.

The Third Type
Active solar pool heating involves the use of pumps to properly circulate the water in the pool via solar collectors to heat and then return to the pool. The pool becomes a storage medium for heated water so you do not need any more water storage tanks. If you use active solar pool heating, you can extend the swim periods of the family and reduce the heating costs of maintaining the pool. Active solar energy is a smart option for individuals who want to save more in heating costs.


**Pros and Cons of Solar Power**

The advantages of solar energy continue to grow with more pros and experts learning more about the process and features. Of course, there are also a number of consequences especially for the person who does not study much about the devices. It is important that you weigh the potential of having your own setup. You should consider the things you need to power, your location, budget, etc. Here are some more details about the energy.

**On Availability**

The good thing about solar energy is that it can be used anytime or as long as the sun exists. You can get the power you need day in and day out. Solar power is a renewable resource which means that you do not have to pay any bill or keep replacing parts to get the results that you need. The disadvantage in terms of availability is that you cannot access the energy if there is no sunlight. You cannot rely on solar power at night or in places that tend to be very cloudy for several months. People living in tropical areas or desert regions can rely on solar panels. However, those who experience very long winter months may not get the best effects.

**Things to Power**

Nowadays, solar energy can power a variety of objects such as homes, offices, cars, small light fixtures, toys and calculators. You can now rely on the sun to help you minimize utility and electric bills. You can even see a number of vehicles now solely powered by the sun. The disadvantage to the approach is that the power may tend to fluctuate depending on the sunlight available. Some devices may not work as well if the acquired energy from the sun is insufficient. In some cases, power may totally fail if solar energy is limited or unavailable.

**On Installation**

Even though solar cell panels are readily available in most hardware stores and the internet, not everyone is still capable of installing the devices properly. The initial setup costs may be very expensive for some individuals. Women may especially find that tasks hard to do unless they rely on a professional to do all the work. Installation will depend on several factors and will need careful study, such as the angle of the sun, the position and area where you need to place the solar panels and the number of hours to complete the project.

**On Purchasing**

Purchasing solar power systems may be more expensive for first-time buyers. Those who have been used to the old system may have to spend more initially. Overall, the cost for maintenance begins to taper down because the sun is readily available and free. Some people, especially those coming from the third world countries may not have available solar cell panels ready for purchase. They may have to order online. The professionals needed to install and maintain the system may not also be available in some areas. The fees, if ever, might be more expensive. You have to compare the options first.
The Advantages of Solar Energy

Thousands of people are beginning to invest in solar powered devices and panels because of its several known benefits. You can start helping the environment and maximize the potential of your energy source by using solar power instead. You have to know more about the available types and the features of each. You should know your source better so that you can get the best deals. Here are some more tips and tricks on how to begin.

It’s a Renewable Resource
Solar energy is considered a renewable resource. This means that reliability can be acquired day by day. You can expect to continue getting power and energy from the sun for several decades without having to recharge batteries or keep purchasing new parts. Even though the energy may not always be readily available during cloudy days or at night, the availability is still there everyday. The solar energy supply will be available as long as the sun is existing.

On the other side, oil is not considered as a renewable source of energy. Oil can take millions of years to form. At present, oil reserves are being depleted at a very fast rate compared to its time of development. People will have to prepare for the consequences of running out of this resource.

Helping the Environment
Solar energy is non-polluting. This means that you can save the ecosystem and keep greenhouse gases from forming. You can expect a cooler and cleaner surrounding by investing in solar powered devices. Compared to oil, oil burning will release carbon dioxide plus other greenhouse gases into the air. The process of getting oil can also lead to damaged or compromised ecosystems because of spills and dredging.

Cheap and Easy
People do not have to keep maintaining solar cells, because a panel can last about 30 years or more if well kept. Solar cells can also be made from very cheap materials. You can even construct the panels yourself. You can purchase ready-to-build solar cell panels over the internet. The materials will be delivered right to your doorstep in just a matter of days.

Even though solar panels and the relative accessories like solar lights are expensive to purchase at the beginning, the total sum you save in the years to come will be bigger, thereby boosting your savings instead of investing in a non-renewable energy source. The energy provided by the sun is readily available and free. Oil prices continue to increase every week. The materials and tools needed to acquire oil are also becoming expensive.

Easy Installation
You can expect to have your own solar panels in just a matter of hours or days. Allocate one day to construct and install your solar cell panels. There are so many books and online resources where you can learn more about solar energy and how to harness the power yielded to the maximum. Talk to other experts and find out about other benefits by adjusting your setup. The good thing about solar energy today is that more and more people are becoming experts in the field, thereby widening your options in getting information.
The Risks Of Solar Energy

When people talk about solar energy, all they really talk about is how much this alternative form of energy source is a great source for power and electricity, and how this source of energy can help you save a lot on your utility bills. However, there are certain things and aspects about solar energy that should be discussed with people, especially since solar energy is now being integrated in constructing modern day houses and structures, and are even now becoming a viable source for power and electricity.

One of those things that should be discussed involves the risk of using solar energy. This article will try to present to you some facts and information about the risks involved in using solar energy. Before we can discuss more about the different risks, let us first discuss what solar energy is, and how it is produced in order to understand its different risks.

Known Dangers of Solar Energy
For those of you who don’t know, solar energy is actually produced from a process that occurs within the sun known as nuclear fusion. Nuclear fusion is actually the very same process that is involved in nuclear power plants, and actually employs the same basic nuclear physics laws that applies to atomic bombs. This is definitely a major cause for alarm for most people.

Aside from that, add the fact that the main energy source for solar energy is actually hydrogen, which is a form of gas that is highly explosive, and that is definitely something that you should be aware of. Hydrogen is a tremendously destructive component that can be found in H-bombs, and also produces dangerous fallout for those exposed. These known dangers of solar energy may sound very threatening, but these are not the only things that you should be worried about, for solar energy could also have other not so well-known dangers that could pose a risk to your health.

Solar Energy Radiation
Right now, we are all actually being subjected to the sun’s background radiation, which could be dangerous if exposure to it exceeded a certain level. There is really nothing we can do to prevent being exposed to such background radiation other than to simply avoid sun exposure. However, if your home uses solar energy to power up your house, you might find it more difficult to do. Since solar energy technology harnesses the power of the sun by concentrating the sunlight, and using its energy to light up your home’s light bulb, you could very well be irradiating your entire home, something which could cause skin cancer later on.

Solar Energy Fire Hazards
Since most solar collectors basically concentrate the sunlight that they are able to collect from the sun, it can be a fire hazard, especially since fire can very easily start if there were very high concentrations and levels of solar energy. These high and dangerous levels of solar concentrations could easily ignite combustible materials, making it a possible fire hazard on any home.

These are just some of the risks that solar energy could pose on you, so make sure that you do some researching first before deciding on whether you want to get and use solar energy technology for your home or not.
Solar Power Generation

Solar power can be generated in different ways. It is important that you learn more about the available types and the devices that can generate energy efficiently. There are already solar power generators available. You may order these online or via your local store. You can also choose to build your own generator. Find out more about solar generation by talking to the experts as well as asking others who have already tried building their own.

The Basics

Solar energy is very promising because it is renewable, which means that you can continue getting the power you need nonstop. The sun provides a large amount of energy that artificial units cannot sufficiently give. The small part of the power stems through to the earth in the form of sunlight. The rays that deliver the energy of the sun give both heat and power that can effectively be gathered and changed to other types of energy, such as electricity. Solar steam generators use solar power generation use the power of the sun to heat water and create steam to let electrical turbines work.

Another popular method of solar power generation is through the use of photovoltaic devices. The devices are made to use photovoltaic cells or solar cells to transform solar energy into DC electricity. There are plenty of ways to collect solar energy such as through parabolic troughs, solar panels, solar dishes and solar power towers that have reflecting mirrors. A number of solar collectors are categorized as either concentrating or non-concentrating.

Concentrating and Non-Concentrating

The concentrating gatherers use panels that are angled the right way to absorb the prime point of the direct rays of the sun. Non-concentrating gatherers are ideal for regions that have lower amounts of direct sunlight and absorb the energy rays of the sun from direct and various reflecting angles. Solar power generation is under heavy research for ideal materials and processes of collecting the sun’s energy and utilizing solar generators to create both heat and electricity.

The Applications

Solar power can give several applications for businesses, homeowners and companies. Present solar power plants are not yet very rampant, but experts see a growing population as the technology and supply for energy supply that is both clean and safe becomes more available. Energy systems are now widely available to help utility companies provide power to offices and homes. The solar power delivered to utility companies and used by people for various electrical applications is used all over the globe. Solar panels can be used to heat and power different electrical appliances in the house. Solar panels can also be used to convert sunlight into electricity to power heating systems, lights and air conditioning systems.

The Cost

The cost of a solar power generator will vary depending on the size, materials and applications where it will be used for. Big power plants will have to spend millions to get the desired effect. Small households can only pay a few hundred dollars for the right setup.
Solar Energy and Photovoltaics

Photovoltaics are considered an integral part of solar energy technology. PVs are now used in a wide array of settings, depending on the current needs of the user. More and more people around the globe are also starting to invest in these devices for a variety of reasons. You can get constant and renewable energy at a much cheaper cost, thereby power different devices and tools for your benefit. Here are some more tips and details.

The PV
The PV or photovoltaic cell is also known as the solar cell. It is a device that readily converts light into electric current via the photoelectric effect. The device is based on the discovery of Alexandre-Edmond Becquerel who realized that a number of materials let go of electrons when these hit rays of photos straight from light, causing an electrical current. The first solar cells were made by Charles Fritts during the 1880s. Even though the prototype selenium cells converted below 1% of incident light into electricity, James Clerk Maxwell and Ernst Werner von Siemens realized the importance of the finding. After the work of Russell Ohl during the 1940s, Calvin Fuller, Gerald Pearson and Daryl Chapin made the silicon solar cell in 1954.

These were the early solar cells that were very expensive and can reach efficiencies of around 4.5% to 6%. The highest efficiency PV cells produced were by Boeing and SpectroLab in 2009, with efficiencies of around 35% to 41%. There are also other multi-layer cells that closely resembled the device. These were very expensive too, and were only used in the most unique applications. Thin film PV cells were also created and made in bulk. These were more cost-effective and less fragile, with about 20% efficiency.

More Technologies
There are several technologies now, including a minimum of 14 photovoltaic cell types, like polycrystalline silicon, thin film, monocrystalline silicon and amorphous cells. Concentrating solar power also appeared in several types. The earliest application of solar cells considered to be very significant was being a back-up power source to the Vanguard satellite back in 1958. The solar cells continued transmission for more than a year after the chemical battery exhaustion. The operation of solar cells during the mission was considered to be very successful and was duplicated in several American and Soviet satellites. PV has become the established power source by the late 1960s.

At Present
Today, Germany has become the primary PV market worldwide after they revised the feed-in tariffs for the Renewable Energy Sources Act. Spain has become the biggest PV market after 2007 after it adopted the same feed-in tariff structure. Spain installed half of the PVs all over the globe, accounting for about 45%. Concentrating photovoltaics are very new, which employ sunlight concentrated onto photovoltaic surfaces for electrical power production. Solar concentrators of different varieties can be used. These are usually mounted on a solar tracker to keep the focal point on the cell as the sun travels over the sky. Tracking can boost the output of flat panel photovoltaic by 20% during the winter and as much as 50% during summer.
Solar Energy Figures And Statistics

Solar energy is fast becoming one of the more promising alternative forms of energy sources that is out in the energy industry today. The main reason for this is probably due to the fact that its main source of energy, which is the sun, is able to provide over 10,000 times more than the energy that our planet is able to produce. This helps show people that solar energy is one of the best alternative energy sources for the future. However, don't simply take my word for it. Instead, check these different solar energy figures and statistics and see for yourself if whether solar energy is indeed everything that people are claiming it to be.

Is Solar Energy Systems Financially Viable?
One of the main things that people look at when it comes to alternative sources of energy is whether it is financially viable or not. Getting a solar energy system for your home or work place these days would actually help you save some money on the total cost of your utility bills annually. However, this particular benefit is not necessarily immediate, as there are some other costs that you need to consider. Nonetheless, using solar thermal systems would allow you to get back the total cost within 5 years of installation, and 15 years for photovoltaic panels, after which, you can then enjoy the benefits of cutting down the total cost for your energy consumption.

Does Solar Energy Reduce Cost Of Energy Consumption?
Studies have shown that using certain solar energy systems do reduce the total cost of energy consumption that your home or work place might incur. If done right, you can actually lower your annual utility bill by as much as 80%, which is very significant, especially if you are trying to find ways to save some money.

Also, there are certain programs that allow solar energy systems user to sell back energy or electricity that they were not able to consume to the utility provider, giving you more ways to save money.

Do Sunny Areas Have More Solar Energy Systems?
Although the ideal location to place these solar energy power plants to harness sunlight would be in locations that have an ideally hot climate, some places which does not have that hot of a climate are known to have more solar panels than those which have hot climates. Denmark and Holland, and most of the northern European country, claims that they have more solar panels than the United Kingdom, indicating that you don't necessarily have to have a hot climate in order to enjoy the benefits of solar energy.

How Much Area Does Solar Power Plants Need?
Most, if not all, solar power plants require a certain stretch of land area in order to house all the solar panels that these power plants need to have in order to properly harness and collect sunlight and solar energy. Depending on the size of the power plant and the solar energy output needed, each solar power plant land area would vary, from 250,000 square meters of solar panels in the United Kingdom, to the 93 million square meters of solar panel in China.
Concentrating Solar Power

Solar power is described as the conversion of sunlight into electricity. Sunlight could be changed straight into electricity with the use of PV or photovoltaics. It can also be indirectly converted using CSPs. There are now several devices and structures created which focus and concentrate solar power in various ways depending on the needed use. There are several new several uses of solar power because of the rise of these devices.

On Concentration

Solar power is concentrated in various ways. Solar troughs are the most common and visible. CSPs or concentrating solar power systems make use of mirrors, lenses and track systems to focus on a wide area of sunlight into a small beam. The concentrated heat is used as a source of heat for a conventional power plant. The wide range of concentrating technologies is now available. The parabolic trough is the most developed. Other structures made include the Stirling dish, the linear Fresnel reflector and the solar power tower. Several techniques are used to locate the sun and concentrate light. Working fluid is also heated in all the systems using concentrated sunlight, which is then applied for storing or generating power and energy.

The Parabolic Trough

A parabolic trough is created from of linear reflector that concentrates light right onto a receiver, placed along the focal line of the reflector. The receiver is described as a tube positioned right over the middle of the parabolic mirror and filled with a working fluid. The reflector is created to follow the sun during the daylight hours by tracking right along a lone axis. Parabolic trough systems give the best land-use factor among all solar technologies.

CSP plants use several thin strips of mirror instead of the usual parabolic mirrors to focus sunlight onto a couple of tubes using working fluid. This application provides the advantage that flat mirrors can be used. Flat mirrors are great because these are cheaper and can contain more reflectors within the same amount of space. More available sunlight can then be used. Focusing linear Fresnel reflectors can be used well in compact or large plants.

The Stirling Solar Dish

The Stirling solar dish is also called a dish engine system, which is made of an independent parabolic reflector that tends to concentrate light right onto a receiver placed at the focal point of the reflector. The reflector will track the sun along an axis or two. Parabolic dish systems provide the best efficiency over other technologies. The 50kW Big Dish in Canberra, Australia is a great example. The Stirling solar dish mixes a parabolic focusing dish that includes a Stirling heat engine that regularly drives an electric generator. The benefits of Stirling solar over PV cells are the higher conversion efficiency from sunlight into electricity, plus a longer lifetime.

Power Tower

A solar power tower includes a wide array of heliostats or tracking reflectors that focus light on a central receiver over a tower. Power towers are considered to be the most cost effective and provide better energy storage and higher efficiency compared to other CSP technologies. The solar bowl is described as a dish mirror that is affixed to a certain spot or structure. The receiver will follow the line focus made by the dish.

Learn the secrets of building your own solar energy – www.wi-kan-iko.co.uk/DIY_Energy.html
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How to Choose the Best Solar Energy System

With the recent advances in technology in recent years, being able to produce viable and clean energy to be used to power your home is now a reality. Alternative sources of power and energy will not only help you avoid burning fossil fuel to help provide electricity for your home, but will also help you save a considerable amount of money on the cost of your utility. One of those alternative energy sources is solar energy.

There are actually a number of different solar energy systems that are available in the market today. Since solar energy has become more common and more viable in the recent years, developers have begun to develop different solar energy systems that you can choose from, depending on your needs and limitations. Choosing a solar energy system that would fit best for your home is not necessarily an easy thing to do, which is why it is important that you learn how to choose the best one in order to get the right type of solar energy system for your home. Here are a couple of hints.

Know Your Solar Energy System
Before anything else, the very first thing that you must do is you must make sure that you know what different solar energy systems there are that you can choose from. Basically, there are two different types of solar energy systems, and those are the photovoltaic (PV) panels and solar thermal systems.

Photovoltaic Panels
Photovoltaic panels are solar energy panels that convert solar energy and turn them into electricity that you can use to power up most of your appliances and household lighting, and should only be used for those particular uses. Unfortunately, among the solar energy systems that are in the market, photovoltaic panels are considered to be one of the more expensive ones, if not the most expensive in the solar energy market today.

Solar Thermal Systems
Solar thermal systems, on the other hand, simply generate heat, and are well-suited for boilers, furnaces and water heaters, as this type of system allows you to make heat using direct solar energy at a much lower cost as compared to using conventional energy and electricity. However, if you want to retrofit your home with one of these solar thermal systems, you need to sacrifice a little bit of space in your home. The good thing about using this type of solar energy system though is that you will save up to 80% of your total energy cost per year.

Calculate Your Energy Cost
Once you have a much better understanding and grasp of what solar energy systems are out there, and how they work, you simply need to learn how to calculate the cost of your energy consumption. This will actually help you determine which type of solar energy system you should choose from the two. When calculating the cost of your energy consumption, you need to create a list of all the things that might need energy and electricity. Include appliances, lighting, water heating, space heating, space cooling and air conditioning. If you can, try and figure out first if there are ways that you can reduce your electricity and energy consumption without having to resort to retrofitting your home with solar energy system.
Should You Invest in Solar Power?

Solar power is quickly gaining popularity all over the globe. It is growing at a rate of 2% per year, and if the figures continue to grow, solar energy will be the preferred source of energy worldwide. Most modern nations are encouraging people to rely on this renewable resource so that they can save more and help conserve the environment. The trend can continue to provide benefits for decades to come if well-maintained. Here are some more tips and tricks.

About Location
First, you have to consider your current location. Are there a lot of clouds or does it rain or snow frequently? How much sunlight do you get per day? Some locations are very ideal for installing solar cell panels, while other people may do better with an electrical or battery source. Places that get around 4 to 6 hours of sunlight per day at least can do well with a solar energy system. Preferably, tropical and desert areas should start investing in a solar energy system to get the most benefits. Determine the angle of the sun to know which spots are most ideal for installation.

About Resource
Are there any available hardware stores that offer the needed parts for your solar energy system setup? Will ordering online be easy and convenient? Are there agencies or professionals who can offer reliable and quality services to install and maintain the solar cell panels. Are the materials affordable and of good quality? These are some questions you need to consider to get the best deals. Ordering online will depend on your location and the mode of transportation. If you think that setting up and maintaining the system will be difficult, it might be better to wait until the technology is more rampant in your area.

About Budget
Solar cell systems are generally costly in the beginning. Later on, you will realize that the costs will start to go down, since the energy stemming from the sun is free and available all the time. You should consider your budget by determining the area that needs to be covered with solar panels. Budget is vital so that you do not go overboard and overspend on things that you do not truly need. You should also consider the gadgets and devices that will be powered via solar means.

Longevity
A well-maintained solar energy system will last for 30 years if you keep it properly. Other setups may only last for a number of months or weeks at most if external conditions are very harsh or can damage the material easily. You can choose to create your own solar cells or just purchase from a source. The longevity of the setup will depend on the quality of the material, the use and applications. Price does not immediately equate to quality or longevity. You should know more about the available brands and check if there are any differences with regards to feature that will ultimately enhance the lifespan. Ask for recommendations from friends and others who have tried the setup.
Solar Energy in the Home and at Work

Solar energy actually has a lot of different uses and applications to your home and your work place, and it also offers a lot of different advantages. Since solar energy is now becoming more and more affordable, as compared before, it is now more sustainable to have it in your home and at your work place. Here are just some of the possible advantages of using solar energy.

**Solar Hot Water Heater**

One of the more common uses of solar energy is for solar hot water heaters. Most homes in America actually have a hot water heater, which is probably why it accounts for about a quarter of the total energy consumption of a typical American home. Unfortunately, the U.S. government actually spends a lot of money on paying off the energy consumed by these hot water heaters, about $13 billion every year, possibly making it the single biggest energy consumer in your home or work place.

Solar energy systems used on hot water heaters can actually help you save a considerable percentage on your utility bills, over 85% of the total electric water heating cost of your home. This is probably why a majority of the people who decided to invest in the solar hot water heating systems think that this is a wise decision indeed.

**Solar Energy Power**

Solar energy or electricity is actually derived from certain solar energy technology and photovoltaic solar technology that allows you to convert solar heat into reusable energy, allowing you to get power and electricity in your home and work place. At this day and age, there are actually over 200,000 homes that use solar energy technology, 10,000 of which are powered solely by solar energy. And with the introduction of different photovoltaic integrated products, and incorporating them into the construction of your home, or your work place, you can actually save a lot just from the initial cost of construction as compared to building a conventional custom house.

**Solar Pool Heater**

If your home, or work place, has a pool, then a solar pool heater is needed to keep that pool heated at a certain temperature. Solar energy is actually being used by over 300,000 pools in the U.S., and could dramatically lower your utility bill by a considerable amount.

**Solar Energy Net Metering**

Net metering is actually a means for people who use solar energy to power up their homes or work place to be able to sell back to the utility company whatever excess electricity that their home or work place is able to produce using solar energy technology, but is not able to use up. This means that you will be able to lower down the cost of your power and energy consumption, especially since you have another alternative source for getting your electricity.

Also, people will soon be able to choose where they want to get their electricity from. They could either get it from their conventional utility, or get their clean power from a source that is non-polluting, but is just a bit more expensive than your conventional utility.
Solar Energy in the House

Solar energy is described as power coming from sunlight. It is a very economical way of getting energy needed for different household tools and devices such as lighting, power tools, appliances and other gadgets. You can save more in the next few decades by investing in solar power. You have to know the different types of setups and the things you need to consider before you choose to purchase and install. Here are some proven tips.

Getting Electricity

Solar panels are primarily installed on a flat surface such as the roof of the house. This ensures that the panels get and absorb enough sunlight to power the different items inside the home. As soon as the solar panels are activated, these will absorb the rays of the sun. The panels are made of semi-conductors like silicone.

Electrons are then released from the atoms to produce electricity. The photovoltaic effect is achieved when light is converted into electricity. You can then have direct current electricity. When the power enters an inverter, you can get 120 volt AC conversion, the same electricity required to power the house. The connection will be to the utility panel so that appliances and lights will work the same way when the switch is turned on.

On Storage

If the house is not using a lot of electricity from the solar energy created, the excess energy can be stored in a battery. When the sun is out, during night time or in the case of a power shortage or outage, the battery can be used to power different items in the home. If the battery becomes full, the extra electricity will be exported to the utility grid if the system is linked to it. Once the solar energy runs out, electricity coming from the utility will take over. The flow of solar energy electricity is measured via a utility meter that spins forward and backward.

The meter will move backward if more energy is produced than needed and the meter will move forward when extra power is required from the utility company. The two are only even when additional energy is paid for from the utility company. The surplus will go straight back to net metering. The smaller version can power a water heater in the house. Homeowners can also get the same effect by simply converting sunlight into heat.

Environmental Friendliness

The good thing about solar energy installed for homes is that the system is very efficient and environmentally friendly. You can let your kids go to different areas of the house without having to worry about pollution and poisoning. Getting a system also means that you are saving the surroundings from stress and other pollutants in the years to come. You can get a cooler and cleaner environment by investing in a solar power system. You may choose to get a DIY kit or just have a professional install the system. Make sure that you properly position the panels to get the most sunlight and get maximum conversion.
DIY Solar Power

Before, solar power or solar cell panels are only available in commercial areas and hardware stores. Nowadays, more and more people are trying DIY or do it yourself kits. You can expect to have your own setup in just one day, provided that you have an easy kit to start with. Solar power can be achieved right in your very own home, without the help of a professional. Make sure you follow the instructional guide carefully for the best results.

Building Your Own Solar Power Generator

You can use parts that are available on the internet or your local store. You can create a tiny solar power generator with a budget of only $200 to $300. This is ideal for power failures and life outside the power grid. The setup can also effectively power the modem, television, DC appliances, computer, cameras and lights. You can use this in cabins, archaeological digs, tents and camping trips. This is the ideal setup for people who travel to undeveloped regions and countries.

Initial Steps

First of all, you need to make or buy yourself a tiny solar panel. You can get a device rated at 12 volts or higher for only $100 at a marine supply store or RV store. Next, purchase a battery. Experts recommend that you get rechargeable batteries from available green companies. Get any size of deep cycle 12 volt lead/acid or gel battery. You will need the deep cycle battery for nonstop use. The type in the car is a cranking battery, which is good for starting engines. You may also want to look for bargains and other good deals that will cost only around $50 to $60.

Next Steps

Take a battery box where you will put the generator in. The box may only cost around $10. It is ideal for covering the exposed terminals just in case you have kids inside the house. If you want to install the system in a cabin, pump shed or boat, you can skip this step. Purchase a 12 volt DC meter. This will cost you around $25. Purchase a DC input. The triple inlet model is recommended. You can purchase this for only $10 at a car parts store. The device will be good for powering DC appliances like lights, hair dryers and vacuum cleaners.

If you intend to power AC appliances, you will need an inverter. The inverter converts the stored DC power in the battery right into AC power for majority of household appliances. Measure the watts that you will need. Cheap inverters of various sizes can be purchased online too. Use a drill to attach the meter and DC input to the top region of the box.

Charging

Next, use insulated wire to connect the meter to the wingnut terminals found on the battery. Link the negative pole initially. Only handle a single wire at a time. Link the DC inlet straight to the battery in a similar fashion. Link the solar panel to the battery the same way. Shut the lid using a bungee cord to keep everything tight. Position the solar panel under the sun. It will take 5 to 8 hours to charge dead batteries. You can power different devices like fans, lights and radios.
How to Build Your Own Solar Cell

Solar panels are already considered very cost effective because these provide renewable source of energy. You can actually save more by making your own solar panels, instead of having to buy from a store or hiring a pro to do the installation. You can get a lot of financial benefits by maintaining the material properly. Expect solar panels to last for up to 3 decades if well-maintained. Here are some tips on how to begin your project.

Starting Out

Begin with the sandpaper and use it to scour the different regions of the copper of one of the available sheets. There should be no corrosion whatsoever on the copper for the process. Wash the copper sheeting using water, soap and either a sponge or a towel. You should allow oil from your hands to get on the copper. Tower the copper until dry. Make sure that you do not touch it directly. Use tongs to position the copper on the hot plate. Switch the hotplate on as warm and hot as possible.

Cook the copper using red hot heats for about 30 minutes. Use a thick black layer of oxides and allow to form at the surface of the copper. Be sure that you do not leave the copper unattended while you are cooking. The oxide layer and the copper below it will cool at various speeds, leading the two to separate. The process can be violent and can lead to accidents if not properly done. Be sure that you do not get too close or leave flammable items near. It will take around 20 minutes to cool everything to room temperature.

More on the Process

Wash the copper in plain water carefully. This will ensure that you get majority of the black pieces off. The red layer of cuprous oxide should remain on the metal. This will form right under the layer of cupric oxide. Get the cooked copper sheet plus the uncooked sheet then fit these into the plastic bottle. Bend each sheet outward so that no part of the two sheets will stay in contact with each other.

It is important that you clip one of the available alligator leads to the top of each sheet to connect these to the meter. The positive terminal of the meter must link to the uncooked sheet. The negative terminal must link to the cooked sheet. Dissolve two tablespoons of salt into a few cups of water. Pour right into the plastic bottle, allowing the water level to rise about 1 inch from the top of the sheet. Put the bottle out in the sun and observe the meter. The meter should rise consistently to about 50 micro-amps. Place the bottle in the shade and allow the meter to go down below ten. Finally, you have created your own solar cell.

More on Building

You can expect to finish the entire process in just 3 to 4 hours. It is important that you check out the different available resources first at your local hardware store and online so that you can get the most out of your budget. You should also consult a pro and other people who have tried building their own solar cell panels so that you can maximize the effect and get the energy you need to power your various devices.
How to Make Your Own Solar Panels

As the cost of professional fees is quickly rising nowadays, people are becoming more reliant on their own skills and effort in building things. There are now a lot of DIY or do it yourself solar panel kits available at your local hardware store or on the internet. You can order and have the materials delivered right to your doorstep in just a few days. You can even finish the entire project in just a matter of hours. Here are some things to learn first.

**Seeking Resources**

You need to look for the right resources first. You can actually build your own solar cell panel for only $100 or less by finding the best and most affordable sources. You can start looking for green companies. These companies offer some of the best prices and high quality materials to encourage people to choose environmentally friendly options in acquiring energy. You can also look for private sellers and online companies on the internet. Make sure you read the company background and objectives so that you can fully understand the processes and types.

The prices of resources will differ, depending on your setup, the materials you want and the brand. You should get to know your source more. Determine the method of payment, the method of shipment and when you expect the goods to arrive. Usually, it should take no more than 7 to 10 days for your stocks to arrive. Other states may only expect 3 days to get their package.

**Starting Out**

First, cut a couple of rectangular copper sheets. Each should be about the size of a stove burner. Wash a piece of the copper throughout, then use the sandpaper to take off any presence of corrosion. Lay the copper sheet on the burner. Turn the burner on to maximum heat. Watch the copper very well. You will observe that the colors change as the copper starts to oxidize, and gently transform to black. Let the copper stay on the burner for about 40 minutes or up to the time that a thick coat of oxidized black material turns up.

Turn the heat off on the burner, then let the copper cool in the air. This process should take only around 20 to 30 minutes. Slowly scrub the copper using your hands under running water to eliminate majority of the easily removed parts of the oxidized coating. Do not attempt to take off all the coating or scrub vigorously. The objective is to remove the regions that can easily be taken off. Do not damage the copper that stays below the oxidized layer. This is needed to build the solar panel.

**More Steps**

Cut the top part of the plastic bottle off, forming a makeshift bucket. Take the second copper piece, then bend it to fit the bottle shape. Slide the second copper piece into place along the inner side of the bottle. Do the same with the heated piece of copper. The two pieces should not touch each other. Link an alligator-clip lead to every copper.

Connect the lead from the second copper piece to the positive terminal of the micro-ammeter. Stir salt until fully dissolved using hot water. Pour the salt water into the bottle. Check the micro-ammeter. This will be your battery. Position the apparatus under the sun and see how the charge rises as the solar cell panel changes the energy of the sun into electricity.
Solar Energy in the Years to Come

At present, it is safe to say that it is fast becoming a part of your daily life. Solar energy is being used more commonly nowadays, in most homes, and even in the work place. And since this particular form of alternative energy is becoming more and more viable, new and better applications for its technology are now being developed for the future.

Though the future for solar energy appears to be clear and better, a lot of people are still speculative about what the future really holds for solar energy. However, in order for us to be able to understand and properly predict what the future holds for solar energy, we need to first take a step back and look at what solar energy is right now.

Solar Energy Today
Right now, solar energy is being used for a number of reasons. It is being widely used for certain purposes, such as providing your home with an alternative source for energy and electricity, thereby allowing you to greatly reduce the cost of your energy and electric consumption by a considerable margin. Certain solar energy systems provide you with different advantages and benefits depending on what you intend to use them on.

Solar Energy Benefits
One of the main advantages and benefits of using solar energy is that it uses one of the best sources for renewable and clean energy, which is the sun. The sun is known produce solar energy that is over 10,000 the energy that our planet could produce. This means that there is no real shortage on viable solar energy that you can use in the future. However, how you apply solar energy could affect how much energy and electric power you consume.

Problems of Solar Energy
One of the challenges that solar energy needs to hurdle for the future is the problem of space. Solar energy power plants require a significant amount of space in order for it to be able to harness and collect enough solar energy and sunlight through its solar panels. Aside from that, solar energy power plants also require a place that is relatively very sunny at most times during the day, in order to get the most energy and sunlight. An area in the desert would appear to be one of the most ideal places for such solar energy power plants to thrive in.

Another problem that solar energy systems would encounter would be the integration and retro-fitting of these solar energy systems to the different houses and structures that are already constructed without any solar energy system incorporated in them.

Solar Energy in the Future
The future of solar energy appears to be gearing towards the better, especially since there are a lot of research and developments that are being done by different researchers and scientists, all focused on finding ways to improve alternative energy systems and technology. They are trying to find ways to make solar energy an economical solution to the world’s current energy and power crisis.

Learn the secrets of building your own solar energy – www.wi-kan-iko.co.uk/DIY_Energy.html
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Solar Power Cars for the Future

There are now a wide array of devices and structures powered by solar power. Solar powered cars have also risen in prominence as people became more aware of the several benefits of the renewable resource. You can save thousands of dollars in gas each month by choosing a solar powered vehicle. You have to know the different available features and inclusions first. Here are some more details on how you can get the best type.

The Solar Vehicle

A solar vehicle is defined as an electric vehicle that is powered mainly by solar energy. The energy is acquired from solar panels on the surface or the top of the vehicle. PV or photovoltaic cells change the energy of the sun straight into electrical energy. Solar cars are not used as day-to-day transportation devices currently. These are still used in engineering trials and demonstration practices, usually sponsored by private or government agencies.

Solar cars mix the technology in bicycle, aerospace, automotive and alternative energy industries. The design of the solar vehicle is limited by the energy amount placed into the car. Majority of solar cars were made with the objective of solar car races. A few exceptions include solar-powered cars and utility vehicles. Solar cars are usually fitted with the gauges similar to conventional cars. The driver has to watch the gauges closely to see potential problems and keep the car running very smoothly.

Solar cars rely on PV cells to change sunlight into electricity. 51% of sunlight in reality enters the atmosphere of the earth. Unlike solar thermal energy which transforms solar energy to heat for industrial or household reasons, PV cells can directly change sunlight into electricity.

The Solar Array

The solar array is made of hundreds of photovoltaic solar cells that transform sunlight into electricity. To build an array, the PV cells have to be packed together to form modules that are positioned together to create an array. The bigger arrays can create more than 2 kilowatts or 2.6 hp of power.

The solar array can be installed in various ways. Horizontal arrays can be installed in the form of a free canopy. Vertical arrays can be in the form of integrated sails or free standing to get the wind energy. Adjustable solar arrays can be tilted around the travel axis to boost power when the sun is low and to the side. Integrated arrays cover the whole surface of the car with solar cells. Remote array is done by mounting the solar array at a stationary region aside from the vehicle. The trailer array is done by retrofitting present vehicles with little stability.

Practical Use

The first commercial electro-solar hybrid car, called the Venturi Astrolab was introduced in 2006. Some companies in May 2007 also worked to change a Toyota Prius to utilize solar cells to create up to 240 watts of electrical power under the sun. Golf carts are shown to have very practical uses if powered by solar energy. The Solartaxi was also recently introduced. This solar powered car traveled around the globe, or 50000 km in just 18 months.
DID YOU KNOW?

...You can build your own Solar Panels, saving $1,000’s off of retail price.

...Almost anyone can do this, even if you have no solar experience.

...There is a step-by-step guide that will show you exactly how to build your own solar panel system.

Why pay thousands of dollars for solar energy ($27,000 average cost) when you can build your own solar panel system for just a fraction of the retail cost? You can build a single solar panel, or you can build an entire array of panels.

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