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The alternative energy source we feel will have the most impact globally would be solar energy. Solar energy is radiant heat and light from the sun. This type of power has been harnessed by humans since the beginning of time. Even now, when solar energy technologies are at their most advanced state, only a minuscule amount of solar energy is used. The only limitation to using this readily available energy source is human ingenuity. Solar energy can be harnessed through Photovoltaic panels/modules.

Photovoltaic systems are systems that produce electricity from direct sunlight. They produce clean, reliable energy without using any fossil fuels. As awareness and technology increases, they are becoming more of a reality and less of a dream. A solar panel is made up of a number of solar cells, which are made from thin wafers of silicon. When photons of sunlight hit a solar panel, some of these photons are absorbed into the solar cells. As this happens, the photon’s energy knocks loose some of the modified silicon’s electrons. The loose electrons are forced by electric fields in the panel to flow along wires that have been placed within the cells. The flow of electrons through the wires is electricity that will provide power for whatever is attached to the panel. Before designing a PV system for your home, always remember it is much more cost efficient to invest in energy efficiency before energy production. In 2008, the average American household used 600 kWh of electricity each month. Compared to this, an energy efficient home can use half this amount each month. In a sunny climate, a 2 kW PV system can produce 300kWh of electricity each month. In order to generate this amount of power, the PV system would need to cover 240 ft2 (12’ x 20’).

One of the biggest advantages to solar power is the panels produce no pollution Some may say the benefits of using the panels in the production of electricity is not warranted because there is pollution created in the manufacturing process. Studies have shown that the use of these panels decreases air pollutants by as much as 90% in comparison to using conventional fossil fuel technologies. We feel the benefits of solar power definitely outweigh the risks associated with the production process. Also, a very important aspect of the change would be we no longer have to worry about consumption of non-renewable resources.

The first thing that comes to mind with something new is how much does it cost, and is it worth it. Initially, a solar system is rather expensive but it does pay for itself in the long run. The government has an energy efficient tax credit of 30% for homeowners who choose to install solar panels. Another disadvantage of solar energy is that it can only be produced during the day. This means that a battery bank must be installed to harness electricity for periods of darkness or bad weather.

Referring back to the second paragraph, it is very important to focus on energy conservation before concerning yourself with energy production. It will be much more cost efficient in the long run to improve your existing home energy efficiency. Ways to conserve energy are:

* Buy energy star appliances
* Use compact fluorescent light bulbs
* Recycle
* Unplug electrical devices when not in use

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