#### Solar Powered Heat Pumps, The Sunny Truth!



Solar powered heat pumps are units that are powered by a solar panel that is added to the system. The heat pump itself is typically a standard air source heat pump, though some geothermal heat pumps may also be powered by the energy of the sun.

**How Solar Powered Heat Pumps Work**

The heat pump needs to be designed with wiring that will accommodate the solar energy panel or module. The module itself is a made from photovoltaic solar cells that convert the sun’s inherent energy into electricity to run the entire HVAC system. Depending on the number of solar modules that are connected to the system, they can produce enough energy to run other household electrical systems, lights, additional appliances or even push excess electricity onto the grid.

Solar heat pumps may be wired conventionally so that if not enough solar energy is available, the system will run off of standard electricity. When enough solar energy is available, the system uses no electricity at all –there is no cost for operating it. If power is pushed back onto the grid, your electric meter will spin backward, or if it’s a digital meter, it will decrease instead of rise. This is known as net-metering and is available from most power companies throughout the country.

**Grid Tied and Off the Grid Solar Powered Heat Pumps**

Systems installed in homes that are wired into the existing electrical grid are most common. They are also the most affordable. Some utility companies offer incentives for grid-tied solar systems in the form of credits or rebates. This helps lower the cost of installing the solar modules.

Of course, the system doesn’t need to be connected to the grid at all. Off the grid systems are more common in very sunny climates than they are in those that get a larger number of cloudy days. Systems can extract energy from the sun on overcast days, but not as effectively as when the sun is shining brightly. Excess power produced in off the grid systems is typically stored in batteries wired into the system.

**Where Solar Powered Heat Pumps Can Be Used**

Solar modules allow for the installation of solar heat pumps in all regions. However, sunnier climates will require fewer photovoltaic solar panels in order to harvest enough energy from the sun to run the HVAC system. They are therefore more cost-effective where the weather is fair more of the time.

When the heat pump is not running, the energy that is produced by the solar modules is used to power other electricity-using home devices. Excess is pushed onto the grid and credited to you through net-metering.

**Solar Powered Heat Pumps and Cost**

Solar powered heat pumps are not currently very cost effective due to the high price of the equipment. However, those who are committed to environmentally sound technology may want to install one to cut down on their home’s energy use and production of greenhouse gases. As the cost of technology decreases, these systems will surely become more common throughout the country.

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