

Jeff Shoemaker from Custom Solar and Leisure, LLC was a guest at the Armory Park del Sol board meeting last week. He has been doing solar work since 1999, and he stated that he probably installed up to ½ of the systems in the HOA. He then started this business in 2007.

He was there to answer questions about the inverters and solar panels installed on your homes, and the efficiency (or inefficiency) of them at this time. Some owners may need to replace panels, or the inverter. Some may even opt for increasing their system if it is found that the current system is failing to produce properly.

Jeff is willing to offer a special rate for Armory Park del Sol homeowners for his services. He normally charges \$85 an hour but will reduce that charge to \$55 an hour.

He will come out and do research on your equipment if you would like him to, but he thinks that owners can save money if they will simply take some steps themselves.

- 1) Look at the solar meter (which is next to the regular meter). If there is no movement or change in the reading from morning until evening, then the system may not be working at all.
- 2) Do a visual inspection of the equipment.
 - a. If the inverter is not working, none of the system is. The location of the inverter can make a difference also. If it is located in a place where it can overheat (like on a West wall) it is more likely to fail.
 - b. Most homes have 140W or 150W solar panels. Some will be wired in a 10 panel string, and some will be wired in a 4 panel x 4 panel x 2 panel string. In some cases, if one panel goes out, it is likely that the rest of that string will go out. Check the connections/contacts, and conduits. This visual inspection is important. Record the Serial number information from each of the panels. On the back of each panel, there will be a 3 x 3 label with the serial number, model number, and manufacture date. Record all of this information.
- 3) Take the kWh readings of the PAC (Power AC Output) from the inverter, and keep a log of what the readings are. The reading should be in the 800 – 1200 kWh range at peak time (mid-afternoon).

(The PAC is an option of data that appears on the inverter. You can either watch for it to scroll through to this information, or you can tap the inverter scroll the data to that screen).

 - a. Mid-day readings are best, because the potential for any shading of the panels is less at that time of day. (e.g. a mid-day reading of 300 kWh would indicate there is a problem)
 - b. Record the date and time, the approximate temperature, and what the weather is at the time.

Help your neighbors by inspecting the equipment and taking readings for them if they are unable to do it.

There was concern that BP was recalling some of their solar panels. BP is not recalling the panels, but they are cooperating in honoring the warranty on units that are not working. BP has issued a product advisory for specific panel serial numbers. Jeff has found that BP is very easy to work with. He recently did a job where BP covered the cost of all new panels.

If the panels are working, BP isn't necessarily going to replace them even if in the product advisory list.

The majority of the inverters installed in APdS carried a 5-year warranty, and they have an average life span of 7-8 years. The panels have a 5-year product warranty, and a 25-year power production warranty (based on the percentage of production at the extended date).

INVERTER

He estimated that replacing the inverter would cost in the range of \$1500-\$1600, plus permit costs:

- Direct replacement permits that do not require a plan review are \$120-\$150
- Upgrade or total replacement permits do require a plan review, and they are \$200 and up.

If the inverter needs to be relocated in a different place than the current location, it would be an additional cost.

The products produced today carry a 10-year warranty, and have a life span of 15-20 years. Extended warranties are available for an additional cost.

Inverter replacement options are:

Xantrex GT (Taken over by Snyder Electric) - Replacement with heat sync cooled panels
\$1230.00 plus shipping

SMA Sunny Boy (German company-largest Mfg. In the world) - Fan cooled panels
\$1475 plus shipping

Fronius 1G Plus – Fan cooled panels
\$1350 plus shipping

If you repair or replace part of the existing system, that would not qualify for any Federal or State tax credits. If you replace your system completely, you probably would qualify for tax credits.

Jeff also clarified the following:

- 1) Many of you may already be recording your readings and giving them to TEP for their tracking of what you produce over what you use.
- 2) TEP is no longer coming out to check the inverters every year.
- 3) The solar systems are not a back up system. If your electric power goes down, the solar should shut down also. It should also come back up when the electricity does. If the system does not come back up on its own, there is a problem and it should be checked out
- 4) *Bear in mind that all replacement inverters probably need replacement again in 15-20 years.*

If you have additional questions, or want to schedule Jeff to do an inspection of your system, He can be reached at (520) 247-3060.

Visit the website at: www.customsolarandleisure.com