



AZSC



# AZ Solar Center Newsletter

[[www.azsolarcenter.org](http://www.azsolarcenter.org)]

Volume 1, Issue 3

This Newsletter is Sponsored by  
American Solar Electric, Inc

February 2010

The Arizona Solar Center's mission is to present unbiased information about renewable energy in Arizona, particularly solar energy, its most abundant renewable resource. In conjunction with the mission, the Arizona Solar Center uses its website, [www.azsolarcenter.org](http://www.azsolarcenter.org), to support commerce and industry in the development of solar and other sustainable technologies.

### \*\*\* Featured Project \*\*\*

With a desire to make some contribution towards preventing global warming and with self-interest in reducing ever increasing energy bills, David and Betty Harris set out on a solar adventure over two years ago. The challenge they faced: could they reduce energy bills and also make some contribution towards reducing greenhouse emission at an affordable cost?

"Our challenge was to find a solar power system that would reduce our energy consumption by at least 50%. The other element was to identify a system payback that would equal our own invested capital within a ten-year period. We knew that the reduction in CO<sub>2</sub> would follow any installation. An added challenge was to find Arizona firms that had a track record for having engineered and installed quality solar generating systems within the state," noted David Harris.



After having discussions with Arizona Corporation Commission staff members and APS officials, and spending extensive time researching and pouring over literature of solar generating systems, David and Betty selected American Solar Electric to design and install a 6.0 kW photovoltaic system at their Sun City West home.

"APS commissioned our residential power plant and we found that we were in the business of producing energy for our home and when not needed selling the surplus to APS.

The results of the first year of full operation more than met our most positive projections," said David Harris.

In the first year, David and Betty's system generated almost 12,000 kWh and saved some 9.3 Tons of CO<sub>2</sub> that would have otherwise been produced if they purchased electricity from the grid. Based on their calculations, they saved between \$1,200 and \$1,400. The percent savings of the Harris' solar installation was between 55-60% for the first complete year of production.

"Given any reasonable projection of the normal surcharges and rate increases being factored into the APS charge structure, we have estimated the payback period between 8.5-9.5 years. This is very acceptable to us...

We would strongly recommend such a system to those who desire to decrease their electric bills and make a small contribution to our environment," added David Harris.

### System Specification

System Capacity: 6.00 kWDC

PV Modules: 30 Kyocera 200 Watt modules

Inverter: 1 SMA SB7000US inverter

Estimated annual generation: 10,500 kWh

Installer: American Solar Electric, Inc.



Each AZSC Newsletter will showcase a Featured Project. If you would like one of your projects to be considered for this article please send a one page description of your project with four photographs to [janet@cactusmooneducation.com](mailto:janet@cactusmooneducation.com)

We thank the following AZSC Sponsors:



## Utility Updates

**More details of TEP's** 30 MW future solar program mentioned in the October newsletter include a 5 MW concentrating solar power (CSP) plant. This plant will be the first of its kind in the Tucson area and is planned for 2012. This facility will use rows of parabolic trough mirrors and a heat transfer and storage system to create pressurized vapor that will drive a turbine. Bell Independent Power Corp. will develop, own and operate the CSP plant. A 25 MW ground-mounted photovoltaic array is also part of the 30MW program. This will be owned and operated by Fotowatio Renewable Ventures, a worldwide developer of solar energy systems. *(For more information contact [DHutchens@tep.com](mailto:DHutchens@tep.com))*

**SRP's incentive** for residential solar electric is decreasing to \$2.55/ Watt as of May 1, 2010.

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## Q&A

Q: What is Net Metering?

A: "Net-metering" is a method of metering the energy consumed and produced at a home or business that has its own renewable energy generator, such as a wind turbine or solar generating system. Under net metering, excess electricity produced by the energy generator will spin the existing electricity meter backwards. This provides the customer with full retail value for all the electricity the solar system or wind turbine produces.

You have a question? We may have an answer!

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## Solar Production, How Does Your System Compare?

**We would like** to show typical solar PV system performance figures in this newsletter so that you can compare the performance of your system with others in the state. We realize that solar system performance will depend on your location in the state so we're trying to get information from around the state to post here. For the months of December and January we have the following:

| Location  | December | January |        |
|-----------|----------|---------|--------|
| Phoenix:  | 109      | 116     | kWh/kW |
| Tucson:   | 113      | 121     | kWh/kW |
| Yuma      | 110      | 117     | kWh/kW |
| Flagstaff | 112      | 117     | kWh/kW |

Please send us your system generation numbers.

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## Seasonal Tip

**At the start of** this new year make a New Year Resolution to read your solar generation meter once a month. Calculate the number of kWh generated each month, divide the kWh by your solar system capacity in kW and compare your number with those in the bottom left corner of this newsletter. If your number is less than 90% of our number send us a description of your system and the kWh/kW numbers. You may need to have someone check out your system to make sure it's performing as it should.

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## Around the State

**The City of Peoria's** new Beardsley Water Reclamation Facility will generate a portion of its own electricity needs, thanks to a photovoltaic solar power array. The new solar power installation is Peoria's first municipal solar project and includes a 60kW photovoltaic system designed by ETA Engineering and installed by Dependable Solar Products, Inc. The City of Peoria plans an open house in March to dedicate the solar array and help the public learn more about solar energy options. *(For more information visit [www.dependablesolarproducts.com](http://www.dependablesolarproducts.com))*



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## Upcoming Events

### February 1 – 3:

Energy & Environment Conference, Phoenix Convention Center. [www.euec.com](http://www.euec.com)

### February 17 – 20:

3<sup>rd</sup> Annual AEE Solar Dealer Conference in Mesa, AZ  
[www.aeesolar.com/events/dealer-conference-10/](http://www.aeesolar.com/events/dealer-conference-10/)

### March 18-20:

Build it Green Expo & Conference, Phoenix Convention Center. [www.azbigmedia.com/big/southwest-build-it-green-expo-conference](http://www.azbigmedia.com/big/southwest-build-it-green-expo-conference)

### March 30-31, 2010:

Greentech Media's Solar Summit 2010, Sheraton Phoenix Downtown Hotel. [www.greentechmedia.com/events/#/2010/01](http://www.greentechmedia.com/events/#/2010/01)

For more information on upcoming events see the full calendar at [www.azsolarcenter.org/events-calendar.html](http://www.azsolarcenter.org/events-calendar.html)

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Your suggestions are welcomed: If you have suggestions or ideas as to how we can make this newsletter more useful or interesting please let us know. Contact us at [janet@cactusmooneducation.com](mailto:janet@cactusmooneducation.com) with your ideas.