



AZSC



AZ Solar Center Newsletter

[www.azsolarcenter.org]

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American Solar Electric, Inc

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Welcome to this first edition of the AZ Solar Center newsletter. Thanks to a sponsorship from American Solar Electric, Inc. we are able to launch this new communications letter to give you an update on what is happening around the state of Arizona in the world of solar energy. As we develop the content of the newsletter we welcome your suggestions as to what we should include - please see the contact information on side 2 if you would like to help us.

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

*** Featured Project ***

Getting his APS bill has never been more fun. Solar power plant owner, Cliff O'Brien, enjoys seeing how low the electricity bill is and comparing it to bills before installing solar panels on his Prescott home. O'Brien is among a growing number of Arizona residents making the move to affordable solar technology and seeing 'green' as a result. O'Brien's 17.2 kilowatt solar electric system is estimated to offset 47,712 pounds of CO₂ emissions while eliminating 92% of his energy bill in the first year of operation.

"I was trying to plan for the future and control home expenses. I believed that solar power was the way to go," said O'Brien. "Now, I'm saving money and helping the environment by using the natural Arizona sunshine. This is paying off way beyond my expectations. It's truly an awesome system."

Solar has never been more affordable. Federal, State, and utility incentives for residential systems are available in Arizona and can save a substantial amount off the system's cost. Within the first year of the system's operation, O'Brien has seen about a 50% payback, yielding an above average ROI. The



system will continue to pay for itself over the next 8 years and from there on the energy it produces will be free. In total O'Brien's system is expected to produce electricity for 30 to 40 years, while the solar panels themselves are under the manufacturer's warranty for 20 years.

"The process of changing over to solar was really pretty fast and non-intrusive. From my standpoint, with all the incen-



tives available - paying up to 80% of the total cost of a solar system - it's a no brainer. The ROI is absolutely positive, and as electric rates continue to rise - I'm that much better off," noted O'Brien.

System Specification

System Capacity: 17.2 kW_{DC}

PV modules: 84 Kyocera 205 Watt modules

Inverter: 2 SMA SB7000US inverters

Estimated annual generation: 30,135 kWh in the first year.

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

We thank the following AZSC Sponsors:



From the Capitol

The Legislature is currently not in session. When business re-convenes we will track the progress of solar related bills through the legislative process and report on their status.

Utility Updates

Tucson Electric Power (TEP) and a team of energy industry leaders are seeking federal stimulus funding for an innovative demonstration project intended to boost the effectiveness of Tucson's solar energy resources.

TEP has requested \$25 million in stimulus funds from the U.S. Department of Energy to help fund the "Bright Tucson" project, which would employ energy storage systems and a "demand response" program to optimize the output of a new 1.6-megawatt (MW) photovoltaic (PV) array.

If funding is approved, project team members would develop a lithium battery bank and a compressed air energy storage (CAES) system adjacent to the new PV array on a 20-acre site leased from the Tucson Airport Authority. The batteries would store solar energy as direct current (DC) power. The CAES system, meanwhile, would use solar power to create pressurized air that could be used later to drive a turbine, creating electric power on demand.

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 month of **September** we have the following:

Phoenix: 142 kWh/kW

Please send us your system generation numbers.

Q&A

Q: How much space do I need for a solar system and how much energy will it produce for me?

A: The ultimate question(s) but with no real definitive answers!! As a rule of thumb – a solar PV system in Phoenix will generate about 10 Watts per square foot of solar system area. A 1 kW solar system (100 square feet), with PV panels facing South and tilted at about 30 degrees should generate about 1,600 kWh of electrical energy per year.

You got a question? We may have an answer!

Seasonal Tip

Now that the monsoon season is over this is a good time to perform your annual solar system inspection. Also, take a look at the solar kWh meter to make sure that the inverter is working. It wouldn't harm to take a few readings of kWh generation each day or week to check that your system performance is close to what it should be. (see the solar production box below-left).

Around the State

The City of Tucson is taking advantage of SunShare subsidies from Tucson Electric Power (TEP) to help fund seven new photovoltaic arrays that will add more than 1 megawatt (MW) to the city's solar generating capacity.

TEP will provide an estimated \$4.7 million in SunShare incentives to the city over the next 20 years, covering about 60 percent of the cost of the arrays. The systems, which are being built this year at recreation centers, office buildings and other city facilities, are expected to generate an amount of power equivalent to the annual electric usage of about 150 Tucson homes.

The Dry Lake Wind Farm near Snowflake is now "on-line". In August the thirty 2.1 MW Suzlon turbines were gradually



being allowed to turn and send electricity into the power grid. Full commissioning of the wind farm was completed in September and now the farm is capable of generating 60 MW of electrical

power. The Dry Lake Wind Farm, built by Iberdrola Renewables, is the first commercial wind farm in Arizona

Upcoming Events

October:

- 17-18: Winslow's 2nd Annual Solar Tour. (Winslow, AZ)
- 24: 2009 Northern Arizona Sustainable Living Event. (Flagstaff, AZ)
- 24-25: Valley Solar Home Tour (Phoenix)
- 31: Tucson Solar Home Tour. (Tucson, AZ)

November:

- 11-13: Greenbuild 2009. (Phoenix)

For more information on upcoming events see the full calendar at www.azsolarcenter.org

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 with your ideas.