



AZSC



AZ Solar Center Newsletter

[www.azsolarcenter.org]

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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, to support commerce and industry in the development of solar and other sustainable technologies.

*** Featured Project ***

Argent Solar Electric recently completed a 13kW ground-mounted photovoltaic electric solar system for the National Weather Service (NWS) in Vail, AZ. Responding to an RFP from the NWS, Argent Solar Electric won the contract and began construction of the solar system on October 13, 2010. Construction was somewhat challenging owing to the location – on top of a mountain just southeast of Tucson!



Argent used excavators and jack-hammers to dig fourteen, 4 foot deep core footings along 100 feet of hillside to secure the photovoltaic panel mounting structure. Incredibly, the construction was completed in 14 days and the solar power system is now in operation.



The National Weather Service owns the

solar system which will provide approximately 21,000 kWh of electrical energy a year. This is almost 100% of the Service's annual electricity needs.

(For more information on this project please contact Diego Creus at dcreus@argentsolar.com)

System Specification

System Capacity: 13.00 kWDC

PV Modules: 50 SolarWorld 245 Watt modules

Inverter: 1 Solectria PVI 13 inverter

Estimated annual generation:
21,000 kWh

Installer: Argent Solar Electric



We're looking for sponsors!

Would you like to sponsor this bi-monthly newsletter? If you're interested in sponsoring just one edition (\$300) or a whole year's production (\$1,600) please contact Janet@azsolarcenter.org

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:



Seasonal Tip

Do you have a solar water heater? Since we are now approaching the coldest time of the year it is important to make sure that the freeze protection on your system is working properly. Proper maintenance is critical to keeping your system working properly and to prevent freezing. The best way to insure that your system is working properly is to have a qualified solar technician inspect your system.

Want to take a great tour??

Shamrock Farms Dairy just outside of Casa Grande has tours for schools and other groups. Families are welcome on weekends. Check out the tour information at www.shamrockfarms.net/farm-tour/tour-info.



Advertisers

Want to advertise your business on the AZ Solar Center website? The AZ Solar Center offers free advertising to companies located in Arizona. Directory categories have recently been reorganized to better reflect the products and services provided by each vendor. For the full range of advertising options visit:

www.azsolarcenter.org/directory-options.html

Solar Production, How Does Your System Compare?

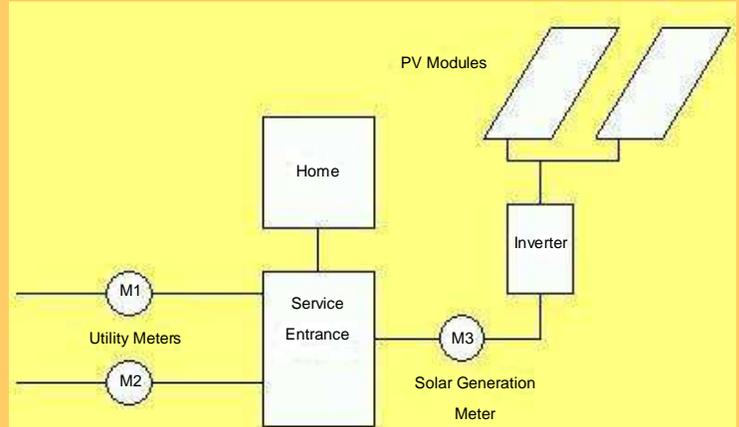
We would like to show typical solar PV system performance figures in this newsletter so that you can compare the performance of your system with others in the state. Simply divide your monthly solar generation in kWh by the system DC capacity in kW and compare the result with the figures below. If your number is less than 90% of ours, it MAY indicate a problem. For the months of October and November we have the following number of kWh produced for each kW of capacity installed.:

<u>Location</u>	<u>October</u>	<u>November</u>	
Phoenix:	132	119	kWh/kW
Tucson:	134	125	kWh/kW
Yuma	134	121	kWh/kW
Flagstaff	135	120	kWh/kW

Please send us your system generation numbers.

How to read your PV system meters in a net-metering setup.

A typical residential PV solar system is shown in the diagram. M1 is a utility owned meter that measures how much electricity you take from the utility power grid. M2 is a utility owned meter that measures how much electricity you send back into the utility power grid. In some cases M1 and M2 may be two individual meters, in most cases, however, M1 and M2 are combined into a single meter that has two registers – either way the functions of M1 and M2 remain as described above. M3 is a meter that measures how much electricity has been generated by your solar system.



The electricity generated by your solar system (M3) can only go to two places – EITHER into your home to feed electrical loads running in your home OR into the utility power grid.

The electricity taken from the power grid (M1) can only go to one place – into your home to feed electrical loads running in your home. The electricity sent back into the power grid (M2) can only go to one place – the grid.

So – the electricity used in your home comes from the electricity you take from the grid (M1), plus whatever you use from the solar system which is calculated by taking the total generated by your solar system (M3) and subtracting what goes into the grid (M2). The total electricity used in your home is therefore equal to $M1 + M3 - M2$.

As far as the utility is concerned, the “Net” electricity taken from the grid is equal to the electricity you take from the grid (M1) minus the electricity sent to the grid (M2). So the net electricity taken from the grid = $M1 - M2$. Your electricity bill is based on this net value. This is a relatively simple overview of net metering—things get a little more complex when “time of use” rates are involved!

Upcoming Events

December 25: Christmas Day—Merry Christmas to you all.

(For more information on upcoming events see the full calendar at www.azsolarcenter.org/calendar.html)

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.

(AZSC Newsletter Archive available at www.azsolarcenter.org/newsletters.html)