



## Solar Power Excelling at U.S. Schools

By Eric Paul | September 19, 2011

With students across the country going back to school, many will be returning to campuses that feature newly installed solar panels. As schools battle with budget deficits and look to educate students about renewable energy, there has been a wave of new solar projects at schools across the country. This rapidly growing market has attracted the attention of solar developers.

Schools across the country are now home to solar facilities. In New Jersey, there are currently 183 public and private schools with solar electric systems, according to the state Board of Public Utilities. And in Arizona, more than 40 schools have solar electric systems installed. In Florida, more than 100 ten-kilowatt solar electric systems are being installed at schools, for use as emergency shelters under part of the SunSense Schools program. In Madison, Wisconsin, Madison Gas and Electric's Foundation has helped to fund solar arrays at all ten high schools within its service area. The largest solar market in the U.S., California, had more than three megawatts of solar installed at schools in August alone. Other states, including Maryland, Massachusetts, New Mexico, and Texas have all had project announcements at schools in the past month.

As schools seek to close budget deficits and save money, solar can be an excellent fit, reducing energy costs and providing a hedge against rising energy prices. For many of the schools, the monetary savings over the life of the system is estimated in the millions of dollars. For instance, the Antelope Valley Union High School District expects to save \$40 million in energy savings over the life of the project. The Bellevue Union School District is guaranteed to save \$750,000 in the first five years and expects to save more than \$3.3 million over the life of the system.

The savings from solar facilities can help save extracurricular programs and maintain teaching positions. In the Alamo Heights Independent School District, savings from its solar facility will help to save three teaching positions.

The benefits are starting to extend to the classroom as well. Solar installations are serving as a learning aid and helping to educate students about renewable energy. Solar developers oftentimes work with schools to help develop a solar curriculum. That was the case at the Antelope Valley Union High School District (AVUHSD), where solar developer, PSomasFMG, worked with the district to develop a solar curriculum. SunPower assisted San Mateo Union High Schools to ensure the correct solar resources are used in the classrooms. In addition to adding solar to the curriculum, schools are also installing real-time monitoring displays to allow students to see how much energy the system is producing. Solar has the potential to be a powerful learning aid with the ability to inspire and motivate a new generation of school children.

Solar at school facilities has attracted the attention of many solar developers, who are increasingly targeting the sector. This summer, the California School Boards Association (CSBA) and SunPower partnered to create a Solar Schools program, to support school districts interested in installing solar. Within one year, SunPower

plans to install more than 90 systems at schools throughout California. Yet SunPower isn't the only solar developer to target the educational sector.

Conergy, a solar developer and panel manufacturer, recently released an [article](#) highlighting the bright future for solar at schools. Clean Energy Constructors, a developer and installer in Arizona, has seen tremendous growth of solar at educational facilities and has plans to install solar [at twelve school sites](#) in the upcoming year. Chevron Energy Solutions has been active in the educational market for a long time and has recently completed [7.1 MW of solar capacity](#) for the East Side Union High School District in California. Developers across the country are increasingly targeting the educational sector.

For developers, schools can be good candidates for larger systems – as systems may be installed on multiple buildings at a given school campus, or on multiple school campuses within a school district. When solar projects are constructed spanning multiple campuses within a school district, the size of the system can grow quickly. At Antelope Valley Union High School District (AVUHSD), [9.6 MW](#) of solar electric capacity was installed at ten facilities earlier this year, for \$52 million. The project, which was financed and constructed by PsomasFMG through a power purchase agreement, will save the district 18% on energy costs and cover 80% of the district's energy needs. In Arizona, a 3.26 MW project is being constructed at the [Buckeye Elementary](#) school district. As developers look to install larger projects, school districts with multiple campuses are an attractive target.

Despite the enthusiasm for solar at schools from educators and developers, there are still concerns. Dwindling rebates, lower SREC prices, and a lower availability of debt service aid, are making it more difficult to finance solar projects at schools. In New Jersey, lower SREC prices have meant significantly reduced savings for some schools. The [Woodbine Elementary School](#), expected to save \$50,000 annually from their system, but has so far been unable to sell their SRECs after prices plummeted earlier this year. With lower rebates and incentives, taxpayers may be asked to foot a greater portion of the bill either through a bond measure or parcel tax. Despite general support for solar, many taxpayers are still hesitant to accept any tax increases.

Power purchase agreements (PPAs), a common financing mechanism, will also be effected by reduced rebates and incentives. PPAs allow schools to purchase energy from the solar system for ten to twenty years below retail electricity rates with no upfront costs. PPAs work by having a tax equity investor monetize the investment tax credit and a developer finance, own, and operate the system. As rebates decrease, the incentive received by PPA developers also decreases and the capital cost of the project increases. The developer will pass along this increased cost to the school, reducing their savings.

In addition to financing challenges, neighbor concerns can also be an issue. An [article](#) in the San Ramon Patch finds that most neighbors are accepting of the newly installed solar facility, but some neighbors weren't given adequate opportunity to comment on the project. Another [article](#) in the Sonoma Sun Valley found that neighbors weren't aware of the scope and scale of the new solar facilities at the Sonoma Valley School District.

Others were upset with service disruptions, which caused a delay in class registrations and the closing of some facilities. Most of these objections can be overcome with proper community engagement and a construction plan focused on avoiding disruption of normal activities.

Despite some of the challenges mentioned, the education sector remains an attractive target for solar developers and will be for some time. Because of the educational benefits and significant potential for dollar savings, solar installations at schools are well-positioned to offer real value to the students, schools, and the community.

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