



Installing Solar Power Generating Facility at Santa Margarita Ecological Reserve SOLAR Research Site

By Brian Hoover, CMS, Senior Editor

The thought of purchasing cheaper energy is something that is on the mind of just about every city, agency or property owner, but is enough being done to bring this prospect to a reality? Spectrum Energy Development, Inc. (Spectrum Energy) is one company that is working hard to make a difference to not only our economic aspirations but also our environmental future. Spectrum Energy has over 100 years combined experience building solar PV plants across California with a focus on providing the best in alternative energy solutions.

Richard Agnello is the Southern California project manager for Spectrum Energy whose headquarters is located in Elk Grove. He oversees a variety of power plant projects throughout Southern California, including more recent jobs like a of a 3/4 of a million dollar solar plant for a massive \$14 million mobile home park development in Chico. Spectrum has also recently begun solar projects for three separate car lots in Santa Rosa, and another three were recently completed in Roseville. Spectrum Energy also works with farmers to help bring affordable power to their agricultural enterprises. This includes a recent project for a group of farmers in the Central Valley, which led to neighboring farms requesting similar services.



Spectrum Energy also works with governmental agencies to build subsidized solar power facilities for low-income apartment complexes and other developments.

Perhaps one of the more interesting and challenging projects for Spectrum Energy, and Richard Agnello would be a project they are currently on in Temecula. A solar power generating facility is being constructed by SMER Research 1, LLC, under a ground lease with San Diego State University, the owner of the San Margarita Ecological Reserve where the power plant is being constructed. Spectrum Energy is currently installing 11,280 (39" x 77") photovoltaic cells (solar panels) on 16-acres of University land. The cost of electricity from this solar power generating

Above L to R: Richard Agnello, Southern California Project Manager for Spectrum Energy Development, Inc. with Tom Callus, Quinn Rental Services Sales Representative.

facility will initially be 10 percent less than the cost of power from California Edison Company, and savings will increase as electric rates increase over time. SMER Research 1 and San Diego State University will conduct academic research projects at the new solar power generating facility that will study solar radiation, solar energy, soils, and other meteorological and geotechnical data as well as habitat and habitat restoration. The program is in coordination with Southern California Edison



Gayk Baumaschinen GMBH pile driver installing posts that will support solar panels at solar panel generating facility at Santa Margarita Ecological Reserve Solar Research Site in Temecula.



Below: Cat 305E2 CR Mini Hydraulic Excavator with auger and thumb attachment from Quinn Rental Services boring through tree stump before installing posts.



Company in accordance with programs established by the California Public Utilities Commission. "We are putting in 3.66 megawatts of solar panels that will be distributed between the cities of Temecula and Lake Elsinore," says Agnello. "2.25 megawatts will be allocated to the City of Temecula, while 1.4 will be distributed toward Lake Elsinore's power grid." The job began Dec. 7 with the removal of 12-acres of Eucalyptus trees deemed to be a potential fire hazard by CAL FIRE. "The trees were planted in the 80s and there are now thousands of Eucalyptus trees on this property," says Agnello. "Because this is an ecological reserve, the trees had to be removed with as little disruption to the terrain as humanly possible."

In order to maintain the land integrity, Spectrum Energy cut the trees down to ground level without the use of excavators or other grading machines. "When the job is complete in late April or early May of this year, we will hydroseed to assure that the natural vegetation grows back," says Agnello. "This is all part of the research project, to see how the natural vegetation cohabitates with the solar panels and surrounding wildlife."

According to Agnello, solar panels of this particular size are many times supported by two posts, however, in an effort to further protect the land, a single post design was utilized. "We are drilling post holes with an auger mounted on a compact excavator. Because of all the tree stumps,

we have developed a technique where we bore right through the stump until we hit the ground beneath and then drive the piles right through the stump," says Agnello. "This has actually proved to be quite effective and right in line with the conservation efforts." Agnello further explains that the solar panels will be mounted at a minimum height of 2.5 feet on the leading edge and as high as 18 feet on the back edge. "The terrain on this project is anything but flat, and we knew that we would be facing many challenges due to the existing stumps, stones, and boulders that are common in this area," says Agnello. "The fact that we cannot dig or move earth with excavators and graders makes this job unique, but our crew has risen



Above Left: One of two Cat TH255 Telehandlers transporting building materials. Above Right: Cat 415F2 IL Industrial Loader from Quinn Rental Services. Right: One of two utility ATVs on rent from Quinn Rental Services. Below Left: Posts and support structures ready for solar panel installation. Below Right: One of Spectrum Energy's finished solar panel sites.



to the challenge and are doing an excellent job. We have men and women of various backgrounds working on this project, including a few veterans from Northern California that have been in the industry for 20 to 30 years. We also have Rich Blair, our foreman on the job, who is so very knowledgeable and experienced and is really the engine that keeps this job going forward smoothly."

Just because the job dictates that the ground should not be disturbed, does not mean that Spectrum Energy is not using construction machinery on this project. They own some of the hand equipment and augers used on the job and are renting a long list of other machines from Quinn Rental Services out of Murrieta

(one of 19 locations). "We rarely purchase heavy equipment and implements because we are so spread out across the state on a variety of jobs with different terrains," says Agnello. "We have rented from several different companies and recently began working with Quinn. I was out driving from job to job one day and saw their rental truck and took notice of how new and clean their equipment appeared and decided to give them a call. They put me in touch with Tom Callus and we hit it off right away and I have to say that Quinn has really impressed me and our company with their pricing and excellent service practices."

According to Agnello, Spectrum Energy has rented several

machines from Quinn Rental Services for this project, including an excavator, skid steer, two forklifts, a skip loader, a water truck, two cutoff saws, a scissor lift, a power jack, two off-road vehicles, a Ditch Witch trencher and a water wagon. "If there is a flat tire or other issues, whether it is our problem or theirs, Quinn has been on-site immediately to get us back up and running," says Agnello. "We have several other jobs coming up soon where we will be using Quinn because they have been amazing to work with."

For more information on Spectrum Energy Development, Inc., please visit their website at www.spectrumenergydev.com or call their headquarters at (510) 990-5753. **Cc**