

Solar Training:

Choosing a Program that Works

by Jerry Sena

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Electricians have an obvious advantage when it comes to solar, but still need training on solar system design and working with high-voltage direct current.

Jeff Spies is a man on a mission. Say “solar training” and watch his passions spring to life.

“There are a lot of new training organizations out there, and sadly, many of them do not have qualified instructors,” Spies said. “Day in and day out I talk to electrical contractors and other serious people wanting to get into the solar PV (photovoltaics) business, and they all ask: ‘How and where can I get good training?’ That question is taking longer to answer.”

It has been nearly three years since Spies found his dream job in the solar business. The Chandler, Arizona, based degreed engineer is the Director of Training for AEE Solar, one of the industry’s oldest, largest and most respected renewable energy equipment wholesalers.

Since joining AEE, however, and meeting thousands of current and prospective solar power system dealers at trade shows and training events around the country, Spies said he has dedicated himself to helping the solar training sector to grow and mature both quickly and responsibly.

His appointment in July to the North American Board of Certified Energy Practitioners (NABCEP) places Spies in exactly the right place to do just that. One of the industry’s most respected and influential renewable energy organizations, NABCEP is focused on guiding the solar industry through a period of unbelievable expansion while maintaining the integrity and safety of installers in the field by defining and enforcing high standards in the industry.



Jeff Spies, Training Director for AEE Solar, has trained thousands of new solar installers in the past three years.

On the front lines of the solar training boom

After 20 years in sales, marketing and technical training in the U.S. and abroad, Spies’ passion for solar energy has helped him build one of the most successful solar dealer training programs in the country in just a few short years.

By partnering with top industry equipment suppliers, plus the nation’s most respected solar training organization, Solar Energy International (SEI), Spies maintains a full calendar of training seminars year-round. Most are available exclusively to the thousands of AEE Solar dealers around the country. However, his popular webinar, “Launch and Grow Your Solar Business,” is a free, two-hour class, open to anyone and everyone considering getting into the solar design and installation business, whether as a skilled worker or an entrepreneur. The class is available online and is also presented in person at various locations around the country throughout the year (www.aeesolar.com/trainings/solar-training-webinars.html).

Not the place to make a quick fortune

While solar attracts all kinds of people – from real estate agents to coal miners – Spies said electricians bring a skill set especially well suited for the transition to successful solar installer. Other skilled professions produce excellent new solar installers as well, such as building contractors, roofers and HVAC contractors. Even some people with none of these skills yet, just a burning desire to

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do whatever it takes to get into the exciting solar business, have what it takes to work hard and become successful.

On the other hand, Spies says, a fair share of candidates show up in his emails and at his Launch & Grow Your Solar Business webinar with neither the requisite skills nor the will to pay the dues necessary to become a well-trained, competent PV installer. Furthermore, he says, a few show up expecting to make a quick fortune.

“This is not the place to be if you’re looking to make a lot of money quickly,” Spies said. “The people who do best in the solar industry care less about making money and more about doing quality work. You cannot survive in this trade if you deliver poorly built, designed, or installed solar systems. They have to work properly if you hope to succeed in this business.

“Every electrical contractor wants to be regarded as doing quality work. They have a desire to maintain a quality reputation with their customer base,” Spies said. “The same ethic required to build a reputation and a business as an electrical contractor is needed to build a successful solar installation company.”

Dealing with dangerous direct current

Among the more critical reasons that solar newcomers must pay considerable attention to quality training, Spies added, are the safety issues involved. Installing solar power systems combines the skills and hazards of two of the nation’s most dangerous occupations: electrician and roofer. U.S. Bureau of Labor statistics ranked roofer as the occupation with the sixth highest fatality rate in 2007; linemen and electricians were number 7.

Although their training and experience with electrical systems offer a considerable head start, electrical contractors need to adapt to working with high voltage DC solar power systems.

“These guys don’t typically work with high voltage DC,” Spies said. “Electrical contractors, unless they’ve worked in industrial, have never touched anything higher than 230 volts AC. And now they’re jumping into electrical systems that can be as high as 600 volts DC. Most electrical contractors need to learn new techniques for dealing with a form of electrical power that’s considerably more dangerous than anything they’ve been exposed to before,” Spies warned.



Solar installation is not for the faint of heart. It combines two of the nation’s most dangerous jobs: electrician and roofer. Safety training is essential. PHOTO CREDIT: SOLAR ENERGY INTERNATIONAL

Poor quality installations can mean leaky roofs or a fire hazard. And, as most are now tied into the electrical grid, an improperly wired solar power system presents potentially extreme danger to utility workers, home owners, and others. These are all good reasons to ensure the solar industry has a top quality workforce in place as quickly as possible, Spies said.

A strong demand brings out the opportunists

With the growing demand for solar installations spotlighting the shortage of qualified solar installers, the billions of dollars that state and federal governments have poured into the industry have drawn the predictable phenomenon of get-rich-quick prospectors, people more interested in easy profits than in the integrity of the industry.

Of special concern, Spies said, are dozens of organizations that have exaggerated their ability to provide quality training and qualified trainers, misleading students who sign a check expecting to get good training. Such misleading claims not only waste the would-be solar installer’s money, they delay his or her entry into the trade.

“What is an electrical contractor looking to get into the solar business right now concerned with?” Spies asks, then answers: “They’re concerned with finding good, quality training. The questions are always the same, ‘Where do I get my training?’ ‘How do I know if I’m getting good training?’”

“I certainly don’t mean to give the impression that all new training organizations are unethical or bad,” Spies said. “That’s

absolutely not the case. There are good quality trainers and companies and schools out there that are doing quality work and deserve to succeed – and will.”

Many industry veterans worry about PV going down the slippery slope of the 1980s solar thermal boom dominated by shoddy products and workmanship. This embarrassing episode damaged the reputation of the solar thermal industry for decades, and while the solar thermal system manufacturers and installers today are offering very high quality products and installations, they are still feeling the negative effects of the unscrupulous get-rich-quick practitioners from the 1980s. Spies is dedicated to preventing the PV industry from making the same mistakes that gave solar a huge black eye in those early years. “PV can avoid this pitfall if ethical solar dealers work together to educate the market on how to select a quality solar contractor. I encourage all competent, principled industry professionals to join their local solar advocacy movements and help the industry evolve in a healthy, sustainable manner.”

How to get what you pay for

The number of programs in the marketplace has grown from a handful last year to well over a hundred in 2009, according to Spies, each laying claim to one form of certification or another, some without credence.

There is no foolproof method for rooting out less than qualified training programs, Spies said. There are, however, a number of precautions you can

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Solar Energy International, one of the premier solar training organizations in the country, reports an increase in the number of women joining the ranks of solar installers.

take to ensure that the school you choose is a reputable one.

The safest way to find top-notch training is to choose a training program accredited and certified by the Interstate Renewable Energy Council's Institute for Sustainable Power Quality (IREC ISPQ). Certified programs have met the council's stringent guidelines for appropriate curriculum and

experienced trainers.

- Solar Energy International
- Florida Solar Energy Center
- Midwest Renewable Energy Association
- Solar Living Institute
- State University of New York at Farmingdale
- North Carolina Solar Center
- State University of New York at Delhi
- Sun Pirate, Inc.
- Lane Community College
- Great Lakes Renewable Energy Association
- The Center for Sustainable Energy at Bronx Community College
- Hudson Valley Community College
- Alt E University
- Advanced PV Design and Installation (PV 303)
- California South Bay University's School of Green Energy
- Boots on the Roof
- Austin Community College

But IREC ISPQ had accredited and certified only 17 such programs as of August

2009, listed above, so getting into these premium classes can entail waiting many months.

Spies says you can find good training from qualified organizations that have just not yet been discovered or accredited by IREC. "But you have to do your homework," he adds.

AEE Solar has partnered with Solar Energy International (SEI). SEI is recognized as the top solar training organization in the industry by numerous industry professionals. A significant majority of the 700 NABCEP Certified PV Installers have passed through SEI solar training courses. They offer a high quality curriculum, some of the best instructors in the industry, and a broad course offering. SEI's instructors are not only incredibly knowledgeable, but they are entertaining – a major advantage during the dry discussions on wire sizing and code compliance.

Don't hesitate to ask for credentials

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Mike Burnetter, Home Owner and Professional Engineer

The North American Board of Certified Energy Practitioners (NABCEP) awards professional certification to solar electric (photovoltaics) and solar thermal installers. NABCEP's high standards are designed to protect consumers and enhance the profession.

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www.nabcep.org

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and Grow Your Solar Business” webinar, Spies offers a list of criteria to check and questions to ask of prospective schools to assess their qualifications and reliability. For starters, be sure to get referrals from previous students or experienced solar pros before booking training. Talk to several.

Ask the training school any and all questions you might have. Be sure to add these to your list:

1. Who developed the training curriculum and what are their qualifications?
2. Who is the instructor, and what are his/her qualifications?
3. How many years did the instructor work as a system designer/installer; three to four years minimum experience as full time designer/installer is desirable.
4. How many systems has the instructor designed and installed?
5. What size were these systems?
6. Does the instructor have experience in battery-based systems?
7. Is the instructor NABCEP certified? NABCEP-certified PV installers often have years of hands-on, real world experience to add to the hours of study required to earn NABCEP certification.

With tuitions ranging anywhere from \$1,000 to \$3,000 for a week-long basic solar PV course, anyone planning to invest in solar training has a right, even a duty, to fully investigate a school’s credentials before committing.

Train with the best – even if you have to wait

The best PV instructors have worn the tool belt on the job for years, navigated slippery roofs in cold months, crawled through the insulation in hot attics in the summer, and lived with the legacy (good and bad) of the systems they have designed and installed. Be sure to train with a pro.

Taking a poor quality training course in a rush to get into the business is a major mistake. Even if you have to spend 3-4 months on a waiting list, it’s the best way to go. You can make use of the extra time in other valuable ways like self study and business development. □

For more information on solar training and how to get it, visit some of the following websites:

- AEE Solar offers dealer training workshops www.aeesolar.com/training
- NABCEP.org offers solar installer certification, www.nabcep.org
- NPCP-IBEW offers solar installer training, www.npcpsolar.com
- NECA Chapters offer solar-electric installer training, www.necanet.org/about/chapters
- Renewable Energy Council's Institute for Sustainable Power Quality- <http://www.irecusa.org/index.php?id=91>
- Solar Living Institute offers solar workshops, www.solarliving.org
- Solar Energy International offers solar workshops, www.solarenergy.org

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