

Solar Depot's Founders Make the Cover of Electrical Wholesaling Magazine

Growing Toward the Sun

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Over the past 28 years, Anoosh and Kija Mizany have built Solar Depot to thrive in its niche, in the face of challenges familiar to many traditional electrical distributors.

The summer sun shines over Northern California's wine country with a certain cool clarity, through thin clouds that glide in off the Pacific ocean. While most of the nation bakes in swelter, the breeze here has a bracing chill. At the same time, the sun is hotter here than anywhere else in North America.

Renewable energy has become the darling of dot-com zillionaires looking for new ventures. Pockets stuffed with cash, many are looking for ways to save the world and grow their wealth at the same time, and concern about the prospect of global climate change has inspired them to invest heavily in the quest to develop and market clean, renewable sources of energy. Solar electrical power, being among the cleanest, is one of the hottest areas for investment.



One might assume that Anoosh and Kija Mizany would be delighted with the surge of interest in solar power. They've been working for almost 28 years to provide solar equipment to heat and power homes and businesses in California. They've encouraged and trained hundreds of contractors in the solar-installation business. As environmental entrepreneurs of the old school, they are glad to see solar power begin to get the attention they've always believed it deserved. Yet, the influx of newcomers has produced some headaches for their business, Solar Depot, a distributor of photovoltaic and solar thermal systems and components, based in Petaluma, in Sonoma County.

The emergence of new competitors is actually just one of a handful of challenges the Mizanys face, and some of their concerns will be familiar to traditional electrical distributors. Many large manufacturers of solar system components have shifted their market channels and increasingly sell direct rather than through distribution. Home Depot has gotten into the game and is aggressively pursuing sales and installation of residential solar systems in California. Photovoltaic modules — the panels that convert sunlight to electricity — are in short supply due to shortages in the silicon used to build them and continuing growth in worldwide demand. And government incentives to go solar, which have improved dramatically in the past few years, still are typically implemented in such a way that they create unexpected complications.

How They've Grown

The Mizanys started out in the late 1970s with backgrounds in science and education and a desire to start a business of some sort. They were remodeling an old house in San Rafael, and took a tour of homes that used solar heating systems.

"I looked at these systems and decided, 'I can do that in my house, and that's not a bad way of getting into business,'" Anoosh Mizany recalls.

He included a solar space heater in the home addition he was building, and quickly other teachers, friends and family became interested in having something similar for their homes. Seeing the glimmer of opportunity, Mizany decided to invest in some components and begin supplying systems out of their house. (The company was originally named Solar Center, but an installer also using that name asked them to change it and offered to pay for the new stationery and signage, as well as buying supplies from them. "We decided that Solar Depot was a better name for what we did anyway, and this was before Home Depot or Office Depot existed," Mizany says.) By the end of the first year, the company had turned a profit and moved into a 3,000-square-foot commercial space with a 300-square-foot office in San Rafael. Since that time, the company has grown to be one of the largest distributors and systems integrators of photovoltaic equipment in California, with a 25,000-square-foot headquarters in Petaluma and full-service branches in Sacramento and Corona.

Solar Depot originally concentrated on the solar thermal market, selling products for residential heating systems and expanding into solar pool heaters and related products. That core business was enough to grow on until 1985, when President Ronald Reagan had the solar water heaters on the roof of the White House removed. They had been installed by Jimmy Carter during the energy crisis of the 1970s, and had begun to leak. Reagan, who had recently won a second term in office, used the moment to convey the message that the time of scarcity was past. Reagan also eliminated the federal tax credits for installing solar thermal systems, and the market for them collapsed.

Many of Solar Depot's customers — the majority of them plumbers — got out of the solar business, and the Mizanys considered shutting their doors. Instead, they reorganized the business to survive on sales driven by energy conservation and products such as the solar pool heaters that didn't require a government rebate to make financial sense. They also helped their customers find ways of staying in the solar game.

"People were selling the tax credits, not the benefits of solar systems," Anoosh Mizany says. "We worked with customers to show them how to have a profitable business without the incentives."

Solar Depot began to get involved in solar electrical systems in a small way around 1980. At that point, demand was low. The systems were expensive and not terribly useful except in specialized applications such as telemetry (remote data gathering) systems. There were some small industrial and commercial applications and the occasional off-grid house in the woods, but not enough to make a significant business.

Technologies for building grid-connected solar electrical systems began to appear in the mid-1980s, and the Mizanys quickly saw the possibilities. They were enthusiastic enough that in 1987 they tied their own house, a large off-grid solar-and-wind-powered showplace in the hills above San Rafael, into the Pacific Gas & Electric (PG&E) electrical grid, becoming the second grid-connected solar home in California. They began selling electricity to PG&E, and though the checks from the utility each month were laughably small, they hinted at the potential future of solar electricity.

In 1991, the federal government launched a rebate program for manufacturers of photovoltaic modules, which brought the prices of solar panels down significantly. At about the same time, California passed a law requiring utilities to give customers credit for selling power back onto the grid. The market for solar

electrical systems began to expand, and Solar Depot seized the moment.

The Heavy Hand Of Government

Solar Depot's fortunes have always been tied closely to the various government programs designed to encourage the use of renewable energy sources. This may sound like a boon to outsiders, but the inconsistency of the programs and their implementation has often been maddening, Mizany says.

"There have been many programs in California, incentives to encourage people to buy solar, but it's been a rough road," he says. "The problem with these programs is that it always seemed like they waited until the 11th hour. You're wondering, 'Did they pass it or didn't they? Yes they did. And for how long? For two years.' Well, how much business can you plan in two years? By the time you've finished your planning the two years is over, so it was always a short-range thing in California. It always seemed they were running out of money. They would put a certain amount of money into the program, then they'd run out of money, and...the end. So sales went up and down accordingly, but we've managed to survive and grow the business."

The last of California's two-year programs expired at the end of 2006 and a new 10-year program launched at the beginning of 2007. The California Solar Initiative (CSI), which is part of Gov. Arnold Schwarzenegger's "Million Solar Roofs" program, sets aside \$2.8 billion to generate 3,000 MW of solar power by 2017. The program offers cash incentives of up to \$2.50 per Watt on systems under 100 kW and performance-based incentives on larger systems. According to the California Public Utilities Commission, this incentive combined with federal tax incentives can save as much as 50 percent of the cost of a solar electrical system.

Encouraging as the CSI program looks with its 10-year window, it too is "plagued with a number of problems" and already has started creating some headaches for Solar Depot and its customers, Mizany says. There are new metering requirements, and the application for the program has grown from around five pages to about 50 pages. "As you know, contractors don't like doing paperwork, so that's kind of cooled things off," Mizany says.

Growing Their Own Customers

One of the keys to Solar Depot's survival and growth has been to draw on the Mizanys' backgrounds as chemistry teachers. In the mid-1990s, the company began offering formal training sessions to electrical contractors and general contractors, teaching them the details of solar electrical system installation. In the dozen years since that initiative started, Solar Depot has given more than 60 workshops, each to a class of 20 to 40 people, many of whom have become authorized dealers, selling and installing Solar Depot's systems.

"There are a lot of aspects of solar and DC technology that are unfamiliar to electrical and general contractors, and we saw the need for training," Anoosh Mizany says. "Fortunately, my wife and I have the teaching experience, and we have electrical engineers and mechanical engineers on our staff who design the residential and small commercial systems we sell, so we have the people to bring the contractors up to date on the technology."

Over time, the range of courses Solar Depot offers has expanded beyond the technical to include classes in how to sell homeowners on solar electrical systems, how to arrange financing and how to work with state agencies that provide the rebates. "We've grown based on the contractors we've been able to help and support. We've developed a loyal collection of customers, and we love working with them," Mizany says.

Solar Depot has constantly experimented with different services they can offer their customers. One of the best has been to offer prepackaged systems that can be customized to scale for a particular application.

Major components of a solar electrical system include the photovoltaic (PV) modules, which account for the majority of the cost, plus mounting hardware, an inverter to change the DC current to AC so the owner can sell power onto the grid or use it around the home, a backup battery and all the other small electrical components — conduit, wire, connectors and such. Solar Depot has a shop where the parts are assembled into a complete system, so once it's mounted onsite, the contractor only has to make three connections: the panel, the battery and the grid.

The systems vary widely depending on the size of the system and amount of power needed, as well as which manufacturer's solar modules the contractor prefers, which inverters and so forth. Mizany estimates that his packaged systems come in 50-odd variations, which he uses to differentiate his company from competitors with just a handful of off-the-shelf packaged systems.

Solar Depot not only prepackages the systems, but provides the technical drawings necessary for securing government permits and rebates, as well as solar-systems design services, troubleshooting and technical support.

Competition From Suppliers and Big Orange

Solar Depot, being one of the oldest and largest wholesalers of solar equipment in California, should have as secure a place in the market channel as anyone. Yet the Mizanys are working in a market where manufacturers have begun to experiment with selling direct. The manufacturers' reasoning escapes Anoosh Mizany.

"We just sort of assumed that, like all the other mature industries such as the electrical industry, manufacturers are going to go through distributors like us," he says. "We know that distribution of any product cannot be done at no cost. The manufacturers somehow pretend that, 'Oh, we can sell more by selling to contractors.' I haven't been able to figure out how they can do that. One theory I have is that they would like to show a higher level of revenue to their shareholders. Although they have the higher expenses associated with distribution, they can easily push that aside and just show the revenue numbers and keep their shareholders happy. They've set up the same infrastructure — in fact they've learned from people like us how to package systems and so forth — but they have to collect from individual contractors. We have over 500 regular accounts, so financing is something that takes a lot of work. There's no way manufacturers can reduce the cost. If anything, we're more efficient because we've been at it longer. That hasn't been very helpful to us, because now we're competing with our own suppliers."

Manufacturers selling direct is bad enough, but when a retail giant decides to get into the business it can strain relations with even the best suppliers. Solar Depot is one of the largest distributors of BP photovoltaic modules in the country. Recently BP launched a marketing program to sell through Home Depot.

"They had access to our dealers' names, and they started recruiting our dealers to sell for Home Depot," Mizany says. "It's something we've learned to live with because those customers, when they're not selling through Home Depot, they come back to us for the systems they sell themselves."

Silicon Scarcity

A further complication hit the solar electrical market around 2004. The industry had been ramping up production in anticipation of demand growth, when it hit a snag. The silicon used to make most of the common PV modules was suddenly scarce as semiconductor manufacturers enjoying the recovery from

the dot-com recession began to suck up most of the available supply. Combined with rising demand in Europe, primarily Germany, where customers were willing to pay a premium for photovoltaics, the shortage led to a 10-fold jump in prices for the refined silicon needed for solar panels.

"We still are not finished with that shortage. They're telling us this will continue into the middle of next year," Mizany says. Meanwhile, California's new CSI program is structured so that the rebates get smaller over the program's 10-year life, based on the assumption that increased volume would lower component prices.

"Now, the rebate is going down, prices are going up, and this makes it difficult for the industry to grow," Mizany says.

Many in the industry are placing their hopes for relief from the silicon shortage in new PV technologies backed by a recent surge in research investment. The current darlings are companies such as First Solar, which makes thin-film PV technologies. Thin films — primarily amorphous silicon and cadmium telluride (CdTe) — use about 10 percent of the silicon found in traditional PV modules and are potentially more versatile, but so far they are also much less efficient. The standard PV modules, silicon monocrystalline- and polycrystalline-based, continue to dominate the market, and their efficiency improvements have been incremental. Nanotechnologies now under development promise a quantum increase in efficiency and versatility, but no nano-based solar products have yet made it to market.

Invasion of the Dot-Commers

Solar Depot has done large-scale commercial solar installations in the past, but for the past few years has concentrated on the residential market, in part because of the shortage of PV modules. "If we have to choose between providing one customer with a 500kW system or 100 customers with 5kW systems, we would rather make 100 customers happy," Mizany says.

Assuming the silicon shortages ease next year as expected, Mizany has plans to expand on the commercial side, offering turnkey installations. "The beauty of commercial systems is that in addition to the state rebate, there's also a 30 percent tax credit from the federal government, and there's also an accelerated depreciation. It really brings down the cost."

He expects to have plenty of competition in the commercial market, at least for the next few years. Drawn by government incentives and the glamour of renewable energy, a growing number of entrepreneurs with money amassed in the dot-com boom started about two years ago investing in solar financing ventures. One of the favored models is the power purchasing agreement (PPA), where the company goes to the manufacturer, buys all the products they need, hires engineers, designs the system, installs it, and continues to own it, with the customer basically buying the power from the PPA entity.

"A lot of dot-commers are getting into that (PPAs) so the competition has gotten very fierce," Mizany says. "A lot of this, I think, is going to pass. Like any business, it gets glamorous for a period of time, a lot of people think they can just jump in, sell cheap, and they'll succeed. What they find out in the first year is they weren't able to make the ends meet, weren't able to make payroll, pay rent, make payables and they go out of business. But in the meantime they ruin the market for everyone who wants to run a legitimate business. We're in the middle of that right now. We're seeing an infusion of a lot of capital, not only in solar, but all renewables--wind, geothermal and whatnot. It's made it hectic and unruly, but also promising if things work out."

Get a Bigger Backer

To bolster Solar Depot's resources in doing battle with the upstarts, Mizany has a new ally in the form of a new owner. Last June, the Mizanys sold Solar Depot to a Japanese trading company, Itochu. The firm's diverse holdings include North American Energy Services, an ESCO; PrimeSource Building Products; and Itochu Prominent USA, a primary supplier of textiles to Armani. Itochu's interest in the solar market, both in the U.S. and abroad, puts Solar Depot in a position to become a more significant player on the world stage, Mizany says. He and Kija continue to run the company as a wholly owned subsidiary of Itochu Corp. and Itochu International.

As an established player in a newly glamorous business, Solar Depot will continue to adapt as market conditions change. "Although it's a wonderful industry to be in — you're dealing with people who are environmentally conscious and want to do something good while they're making a living — at the same time it hasn't been without problems," Mizany says. "There have been a lot of growing pains, and I think we'll continue seeing these growing pains at least for the next 5 to 10 years."