

# Jobs Study: Solar Workforce on the Rise

With the economy suffering in recent years, the job outlook looks generally dim—but the solar industry could be a bright star in dark skies.

New research confirms what many in the industry have long sensed: The solar workforce is strong and growing despite the slow economy.

A national survey of solar labor market conditions authored by The Solar Foundation (TSF), a solar research and education nonprofit organization in Washington, D.C., shows that more than 50% of all solar firms expect to add jobs over the next year, while only 2.2% expect to make layoffs.

According to the study, solar firms—any company performing work related to PV, solar water heating (including pool heating), and solar space heating and cooling—expect to add jobs at a pace that is much faster than the general economy's growth. Solar companies anticipate their workforce to grow by 26% over the next year—a significantly higher rate than the economy-wide expectation of 2% growth. This increase represents 50,000 new jobs spread across the solar-related industries, with approximately 24,000 of these new hires spending at least 50% of their time on solar projects.

"With the national unemployment rate hovering around 10%, this is great news," says Andrea Luecke, acting executive director of TSF. "We know that the vast majority of Americans want to see more solar, but our findings prove that solar represents much more than a popular concept—it represents a stable and secure livelihood for thousands of families."

The study is the first industry-wide effort to quantify solar jobs across the entire industry, including manufacturing, installation, research and development, sales, financing, distribution, utility, and other solar-related businesses.

"As the solar market matures, the nature of the workforce is changing," Luecke says. "You no longer have to be an installer or an electrician. People can enter the solar workforce with varying levels of skill, education, and experience. There are jobs to be had in sales, customer service, consulting, planning, marketing, legal, and human resources."

The findings show that more than 16,000 firms in the United States derive at least some revenue from solar goods and services, and identify 93,000 solar workers—those who spend 50% or more of their time on solar-related projects.

The study could have broad implications for the industry, providing at long last an accurate measure of the market for news stories, legislative initiatives, and funding proposals.

Misperceptions about the size and nature of the solar industry are common and potentially damaging to America's solar prowess, according to Thomas P. Kimbis, director of policy and research for the SEIA and chairman of TSF.

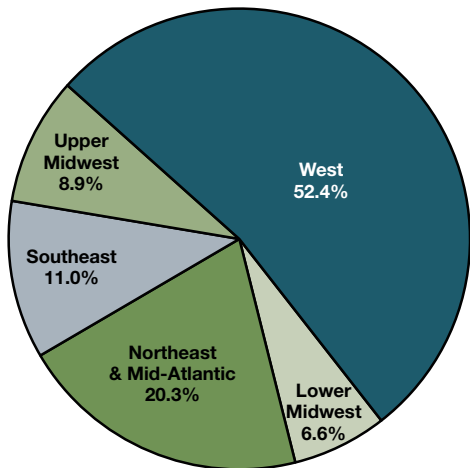
"We are continually characterized as being smaller and much more localized than we actually are," he says. "There's a misperception that solar only exists in Florida



Together Donathue

**Jobs in the solar industry fall into many skill sets.**

## Solar Employers by Region



Courtesy Suntech

or in the Southwest. This study shows that solar is being installed across all 50 states and that there are jobs being created across the industry because of the growing demand for renewables.”

The online and telephone surveys, carried out in July and August 2010, collected responses from nearly 2,500 solar companies across the country. In addition to polling known solar firms registered with industry, and trade and government groups, the study questioned a random sampling of companies within various construction, wholesale trade, and manufacturing industries that have solar-related portions in their businesses.

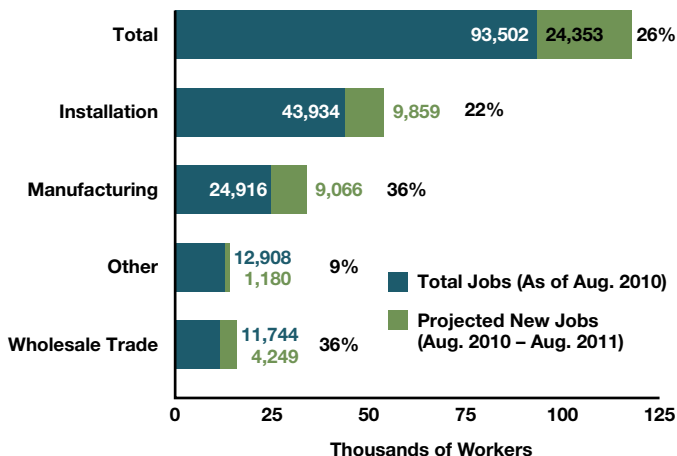
“This survey fills in the holes of other studies,” says Phil Jordan, president of Green LMI, a consulting firm in Boston that conducted the data analysis for TSF. “Unlike other studies that only reach out to the known universe of solar

companies, this study accounts for the unknown universe of companies that conduct solar-related business but are often overlooked. Because it is a better representation of the entire industry, we can draw broader conclusions with a higher degree of confidence.”

TSF also assessed the job growth by key subsectors. Manufacturing, a segment traditionally thought to be one of the weakest links in the domestic solar market, is expected to grow by 36% this year, adding roughly 9,000 new jobs that primarily focus on solar projects.

Wholesale trade rivals manufacturing as one of the fastest-growing subsectors, with 36% growth—equaling 4,249 new jobs. Of those, the greatest demand will be for production workers and salespeople. The installation subsector is projected to gain 9,859 new jobs, representing 22% growth.

## The Current Solar Workforce



## Fastest Growth

According to The Solar Foundation’s research, five occupations are expected to grow the fastest over the next year:

- Photovoltaic system installers (51%–66% growth)
- Electricians with specific experience in solar installations (42%–55% growth)
- Sales occupations at wholesale trade firms (40%–49% growth)
- Sales representatives or estimators at installation firms (39%–47% growth)
- Roofers with specific experience in solar installations (36%–49% growth)

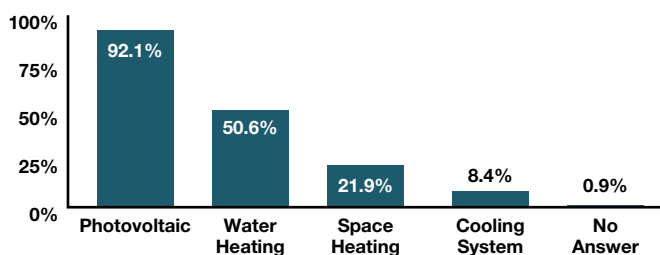
Based on survey responses and data collected by Idaho-based Economic Modeling Specialists, the Southeast is expected to add the most jobs across all solar subsectors over the next year, followed by the Northeast and Upper Midwest.

TSF's study was made public in October 2010 at Solar Power International in Los Angeles. TSF plans to update the survey periodically, as funding allows. On the next round, TSF plans to "dig deeper" and gather information pertaining

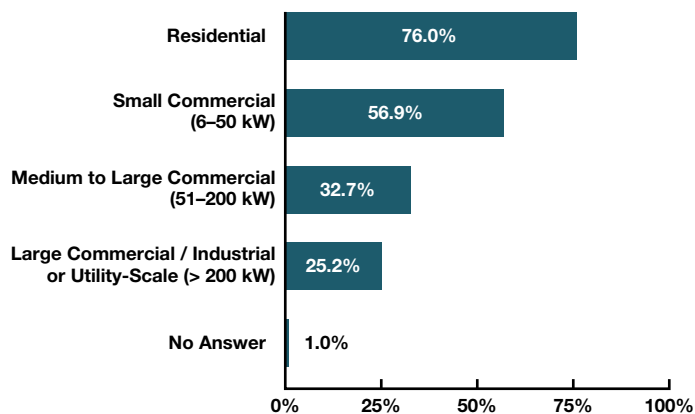
to wages, benefits, and education levels. TSF is also working with the U.S. Bureau of Labor Statistics to define solar job categories that can be included in future census reports.

—Kelly Davidson

## Firms by Technology / Installation



## Types of Systems Installed



# Solar Industry Growth = Job Growth?

Many economists and industry insiders are forecasting steady growth in the solar market over the next couple of years, but the question remains: Will the increased demand translate to new jobs?

Shayle Kann, an energy analyst with Boston-area GTM Research, estimates that demand for PV system installations will grow from \$5.6 billion in 2010 to \$9.6 billion in 2015—from 866 MW to 4,470 MW.

"The U.S. solar market is still in its very early stages, but it has enormous potential. We expect the PV sector to roughly double this year and continue growing steadily for years to come. Such substantial growth will bring new jobs. That was the case in Germany and several leading solar markets," Kann says.

In particular, Kann predicted significant growth in domestic manufacturing jobs in the coming years. According to his firm's projections, the United States will have 3.9 gigawatts of PV module manufacturing capacity by 2012, up from 875 megawatts in 2009.

But not everyone is as optimistic about solar-job growth. According to John A. Laitner, director of economic and social analysis for the American Council for an Energy Efficient Economy, employment in the solar market will remain "relatively flat" for the near term.

"There is quite a bit of uncertainty right now. With the economy limping along, many firms will choose to meet

## New Projects in the Solar Economy

The findings of The Solar Foundation's study underscore the importance of domestic manufacturing in growing the solar workforce. Here's a glimpse of a few projects fueling the solar economy.

- China-based Suntech Power Holdings Co. opened a manufacturing plant in Goodyear, Arizona, in October. The plant will employ about 75 people and produce 30 megawatts (MW) of crystalline silicon photovoltaic modules per year.
- San Jose, California-based PV module company Solexant plans to open Oregon's first thin-film solar manufacturing facility in the Portland suburb of Gresham. The 100 MW capacity plant will employ as many as 200 people.
- Confluence Solar plans to build a \$200 million manufacturing, warehousing, and distribution facility in Clinton, Tennessee. The plant, which will produce monocrystalline silicon ingot for use in PV products, is projected to create 250 jobs.