



GREEN JOBS: WHERE ARE THEY?

A GREENWAYS CONFERENCE PRESENTATION

MAY 2012

By Philip Jordan

Green Ways

A JOBS FOR THE FUTURE INITIATIVE



A JOBS FOR THE FUTURE INITIATIVE

The **GreenWays** initiative provides high-quality workforce services to employers and to workers seeking to advance their careers in the green economy. The initiative invests in 20 workforce partnerships across six diverse industry sectors in eight metropolitan labor markets. It builds on JFF's approach of organizing employers and workforce resources into sectoral workforce partnerships to promote career advancement for lower-skilled workers. GreenWays is supported by grants from the U.S. Department of Labor through Pathways Out of Poverty and the Green Jobs Innovation Fund.

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Jobs for the Future identifies, develops, and promotes education and workforce strategies that expand opportunity for youth and adults who are struggling to advance in America today. In more than 200 communities across 43 states, JFF improves the pathways leading from high school to college to family-sustaining careers.

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Before founding Green LMI, Jordan was director of the San Diego and Imperial Region Center of Excellence, where he provided training and skill gap analysis to nine community colleges. His research focused on health care, information and communications technologies, and green industries. Previously, he was a consultant for Mass Insight, a private consulting firm in Boston, Massachusetts, and an associate at Bingham McCutchen, where he practiced real estate, environmental, and aviation law.

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PREFACE

Where are the green jobs and why do they seem so hard to find? The emerging green economy has yet to create the number of new jobs expected just a few years ago, especially in the construction industry. Economic, cultural, and political triggers have all contributed to how the green economy has evolved into what it looks like today. By engaging employers and analyzing their needs, workforce training providers can better target their programs to where opportunities and job growth exist for lower-skilled adults.

Research on firms engaged in the green economy around the country provides insight into how that economy can continue to promote the goals of workforce stakeholders seeking to create opportunities for marginalized workers. This brief explores these questions. It is adapted from a presentation at GreenWays to Good Jobs, a peer conference for workforce partnerships in the GreenWays initiative, which provides high-quality workforce services to employers and to workers seeking to advance their careers in the green economy. The conference took place in Milwaukee, Wisconsin, February 28 to March 1, 2012.

INTRODUCTION



Philip Jordan
Chief Business Officer and Principal,
BW Research Partnership

My real passion is workforce. I think of myself as one of you, so I hope that it's okay that I level with you, make critiques of systems, and talk about challenges and opportunities. It's important for me that you know how much I appreciate the work you do to put people back to work. Because I think we do have substantial challenges

and issues we have to deal with. And I think doing that in an honest way that's authentic and genuine is much more valuable than pretending there are no issues out there.

I'm really pleased that today's focus is on employer engagement. In any industry where the hallmark is rapid change, employer engagement is critical because information becomes outdated almost as soon as you collect it. Having a continuing feedback loop with employers is critical. And having strong employers that are representative of the community where your jobseekers are trying to find work is very important.

What I'm going to talk about today is: Where are the green jobs, and why do they seem to be so hard to find? In a lot of the studies we do, we hear from employers having difficulty finding people. "We're growing like crazy. We're doubling our workforce." Yet we also know that many of our jobseekers come back with their shiny green credentials and they're on the job market for 12, 18, 24 months and are still unsuccessful in finding work. So there's this paradox that I am going to attempt to resolve.

There are two fundamental issues with green jobs. One is an expectations issue. If we think back to late 2008 and early 2009, a new President was about to be inaugurated. We had lost over eight million jobs in this country before that happened. There was an idea that green jobs were going to make a significant dent and that this new green economy was going to radically cut into those eight million losses.

Don't believe the
hype?

We probably built up green jobs a little bit too much. We're going to talk about expectations and how we can level set expectations. There are great stories and great opportunities in green, but we are not going to generate eight million jobs in the next couple of years from green industries. It's just simply not going to happen. It's a function of numbers and some deeper challenges.

Gartner Hype Cycle



Like any good researcher, I've stolen, in this case the Hype Cycle from Gartner. They've made a business out of this Hype Cycle, and it works really well. It starts with a trigger.

In green jobs, in particular, we've got compounding issues. We certainly have technology triggers that are making green products and services more cost effective and more interesting, exciting, and cool to have.

We also have social and cultural triggers. Compared to five years ago, there has been a cultural shift to make it kind of cool to go green. There was a time when Toyota could not sell the Prius because it did not look different enough. Honda couldn't sell the Insight. Now, the Honda Insight was remodeled to look more like a Prius because people wanted everyone on the street to know that they were driving a hybrid. I drive one, so I can say that. They made it so much uglier, so I could be a jerk driving down the road saying, "Look at me in my hybrid." That was a cultural trigger.

We also had a huge policy trigger because the President came in and made green, particularly clean energy, a priority. He also prioritized environmental protection cleanup. So we have these massive triggers going off.

Like the good capitalists that we are, people say, "I can make money from this, right?" Just as with housing prospecting and the dot-com boom, all of a sudden everyone gets excited, creating a peak of inflated expectations. Eight million unemployed people? No problem. We've got green. Everyone was sold that this is how it's going to happen.

We built the expectations so high—like the young promising athlete whose career is going on so well. This athlete is going to be the next Michael Jordan. The next Rebecca Lobo. The next Tiger Woods. And inevitably the athlete no longer looks so great because you have set him or her up to an impossible expectation. We did the same thing with green jobs. This was compounded because we had those eight million people plus all those who were unemployed before the big job losses happened. People were desperate to find work quickly again, and we were absolutely desperate to believe this would be the solution. So this peak got ever higher. Well, like many bubbles, there was a burst. And we've come to the trough of disillusionment.

I can remember talking about a year ago in San Diego, and a person got up and said, "I don't understand. Employers said they are having a hard time finding energy auditors. I got my RESNET HERS rater certificate a year ago and I can't find work." He was desperate, I could see it in his face. I saw the face of the trough of disillusionment. And I saw it among all of the people who had been around to write the grant to get the funding to provide the training for that HERS rater certificate. It was almost like a sea of anguish.

Each part of the value chain is moving slightly differently, but we are coming into the slope of enlightenment. We are starting to learn that in some areas we drastically oversupplied the market for what was needed and we are seeing a correction.

In other areas, we're recognizing that we forgot about some important things—like who is going to sell all these solar panels that we have all these thousands of installers for. So we're starting to see that slope of enlightenment and in some places, particularly in the innovation sector, we are actually already in the plateau of productivity.

Part of the challenge of green jobs is that there was an expectations issue and they were over-hyped. That's the easy part. Now here's the hard part. There are some fundamental challenges about what green jobs are, where they're growing, and what those actual numbers mean.

I'm going to use three studies to illustrate these challenges.

MASSACHUSETTS CLEAN ENERGY STUDY

I worked with Kevin Doyle of the New England Clean Energy Council and others on the *2011 Massachusetts Clean Energy Study*. The goal was to quantify all of the green-related companies and workers in the Commonwealth of Massachusetts, and then address a number of workforce questions. Their definition of clean energy was essentially renewable energy, energy efficiency, alternative transportation, and carbon management.

Methodology

Comprehensive Database Development

Analysis of BLS Clean Energy Categories

Survey of Known Employers

Random Sampling

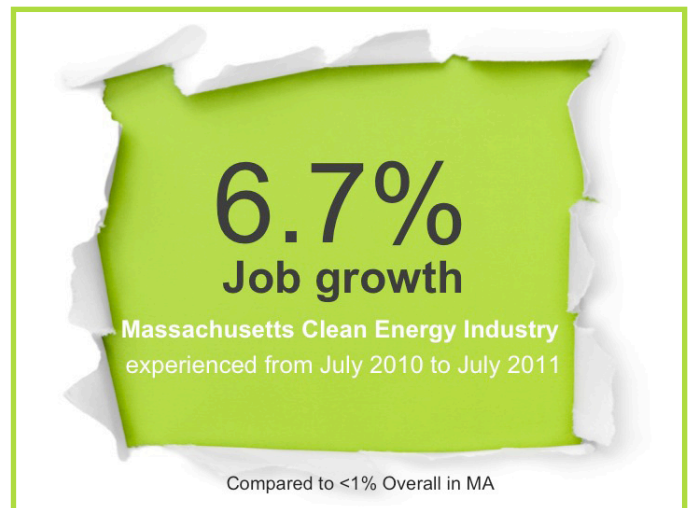
31,000+ phone calls

1,401 total survey completions

Margin of Error = +/-2.5% at 95% confidence

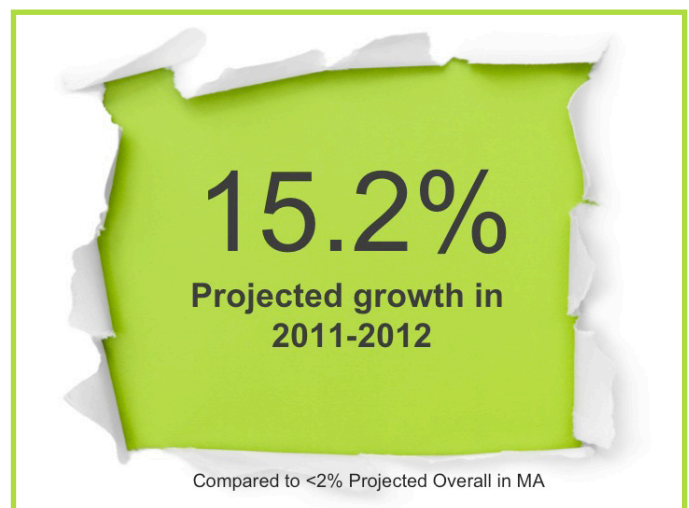
We developed a database of known employers. We looked at the Bureau of Labor Statistics' green industry categories. We conducted a census of all the people we knew about and conducted random sampling surveying of businesses that are in industries that are likely to be green or clean-energy related. We did this because we knew that a lot of firms out there were in an electrical contractors industry code but didn't necessarily sign up to be members of the New England Clean Energy Council or hadn't gone through a program of MassCEC. They were kind of in the hidden economy that nobody measures. At the same time, we knew we couldn't just count every electrical contractor as being clean energy, because that would be over-inclusive and most of them were not doing anything in clean energy.

With over 31,000 phone calls made for the study, we have a very, very low margin of error. It's the lowest of any study that I've ever done. I'm pleased about that, because it gives us high confidence in our results.



We found 6.7 percent job growth in the clean energy industry. This is fantastic. This compares to less than 1 percent overall job growth in Massachusetts.

Now here's the problem. There are about 65,000 clean energy workers, and that's defined as anybody who spends even a portion of their time supporting the clean energy portion of a business. These are not full-time equivalents. When you start looking at the percentages, 10 percent growth on 65,000 is 6,500 jobs across all of clean energy, energy efficiency, carbon management, and alternative transportation. 6,500 jobs is nothing to sneeze at, but this is not going to solve the unemployment crisis in the United States. That means we have high competition for these jobs.

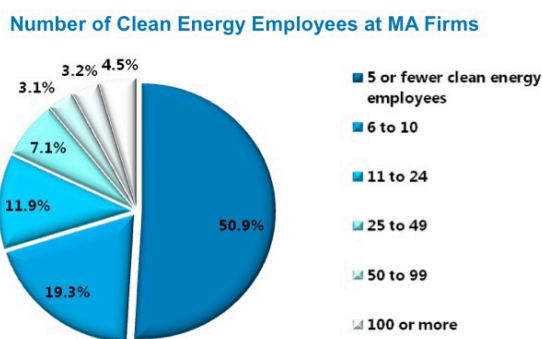


We also asked about projected job growth, or how many new employees these employers expect to add. They estimated a 15.2 percent projected growth rate in the next year, which would be fantastic. You don't necessarily want to depend on this for planning purposes, but this does reflect that it's likely to be higher than that 6.7 percent.

This shows tremendous optimism in Massachusetts for growth. That's a good sign. But again, 15.2 percent translates into only about 10,000 jobs.

Firms by Employment Size

Small businesses are critical to the sector.

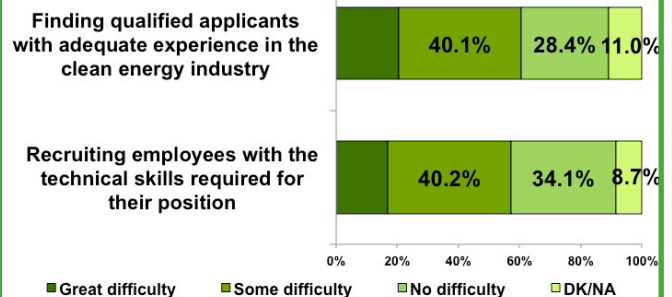


The overwhelming majority of firms in clean energy are small businesses. This is an important note for those of you who are interested in engaging employers. We like to think in an old model that we can take a cohort of 50 and get a big company to hire all 50 of them. That's not going to happen.

And guess what? Every one of these little firms needs something a little bit different. Our work is getting a lot harder. 51 percent of clean energy firms have five employees or fewer. That's a tiny business. Nearly 90 percent have fewer than 50 clean energy employees. The Small Business Association says under 500 employees is a small business—that's basically everybody in the sector. So small businesses are critical.

Talent Is Critical

Employers compete for the highest level of talent—with one another and with other locations



Talent is also critical. Look at the number of firms having trouble finding qualified applicants, despite a lot of slack in the labor market.

Massachusetts is doing better than many other places in the country. Employers say one of their biggest reasons for going to Massachusetts is their access to talent. Yet even in Massachusetts they have significant difficulties in finding people with adequate experience and technical skills.

The Value Chain

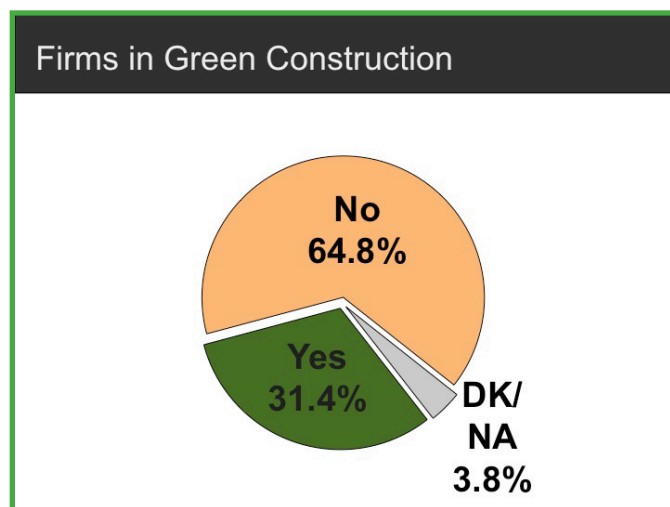
Massachusetts shows strength across the entire value chain of activities.



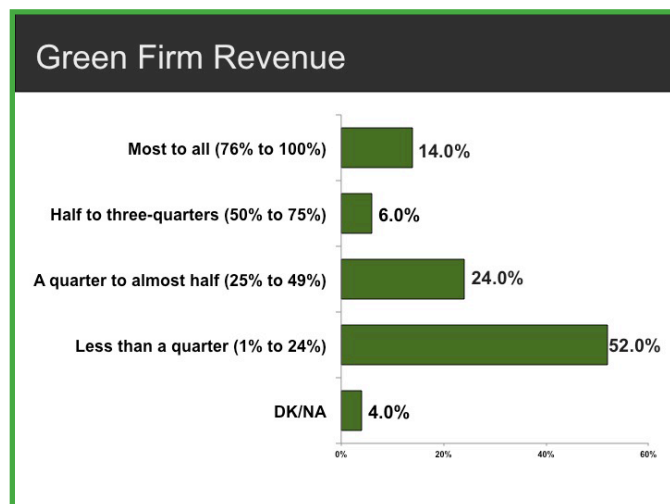
The last piece is the value chain. A lot of people think Massachusetts is all about R&D and finance. Actually, the biggest sector in clean energy is installation, and that is our lowest-hanging fruit.

SAN DIEGO GREEN CONSTRUCTION REPORT

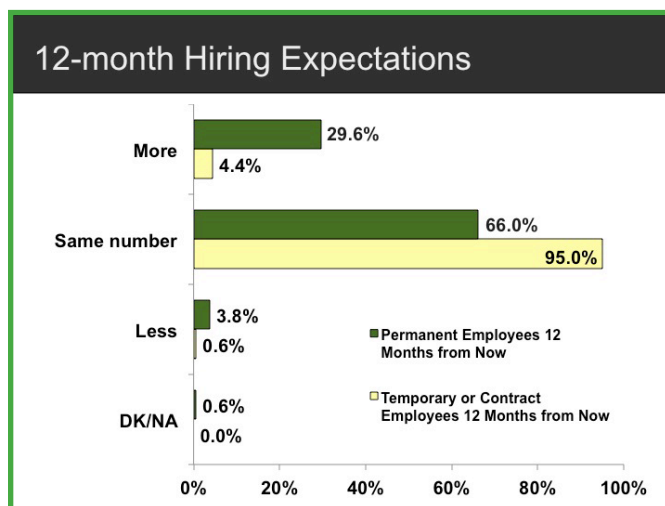
I'm going to switch gears and talk about *Green Construction: An Occupational Outlook for San Diego County*. This is a targeted report on green construction that we did for the San Diego Workforce Partnership, which is the Workforce Investment Board for San Diego County, and a consortium of community colleges.



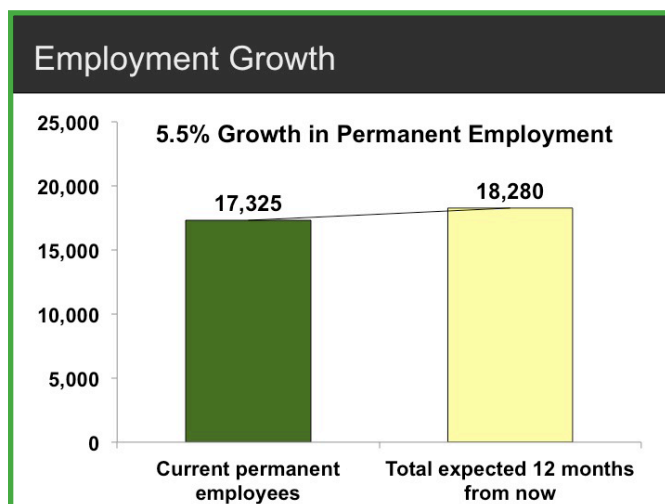
We surveyed all the construction firms in San Diego County about what they are doing in green. First of all, two-thirds of them are not doing anything. This is in a state that's pretty advanced, so we were surprised that almost two-thirds of all the construction firms in the county were not doing anything green related.



Even the majority of firms that are active and excited about green get less than a quarter of their revenue from green-related work.

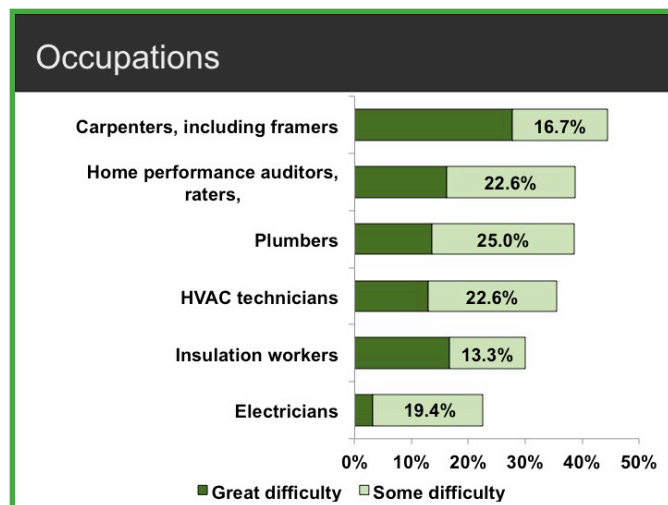


Those who are doing green work are growing much faster than those who aren't. These data are a year and a half old, so this probably has changed, but they still make the point. There was significant growth, and the majority of firms expected a greater share of their revenue to come from green-related work.



The expected employment growth—5.5 percent—was pretty good. But again, that is only about 900 construction jobs in

a region that's lost tens of thousands. We thought the growth should be much higher, so we dug deeper and talked to those green firms.

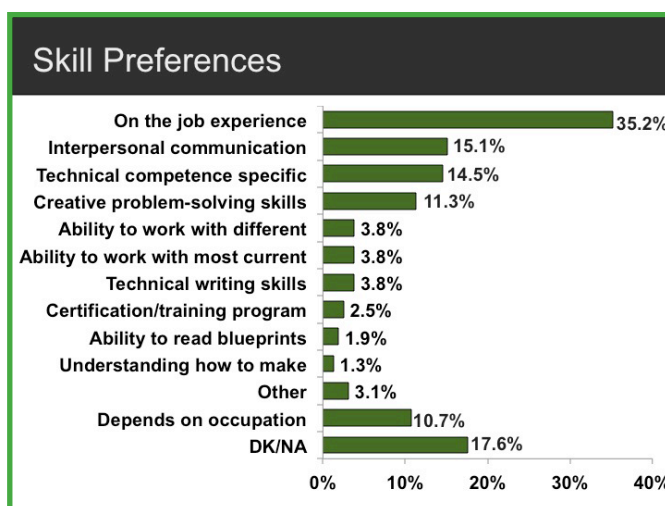


This is critical. We asked an open-ended question about a firm's entire workforce: What job keeps you up at night? What are the ones that are difficult for you to find employees?

They listed home performance auditors and insulation workers. Those are probably things you would call green. Do those other ones look like green jobs to you? Carpenters. Plumbers. HVAC technicians. Electricians. Over and over and over again in our green-related work, what we hear is, "You're out of your mind if you think I'm going to hire a solar installer who isn't qualified to swap out my GFCI plug for something that I could plug a stove or a dryer into." Because that employee is not a certified electrician and could blow up somebody's house.

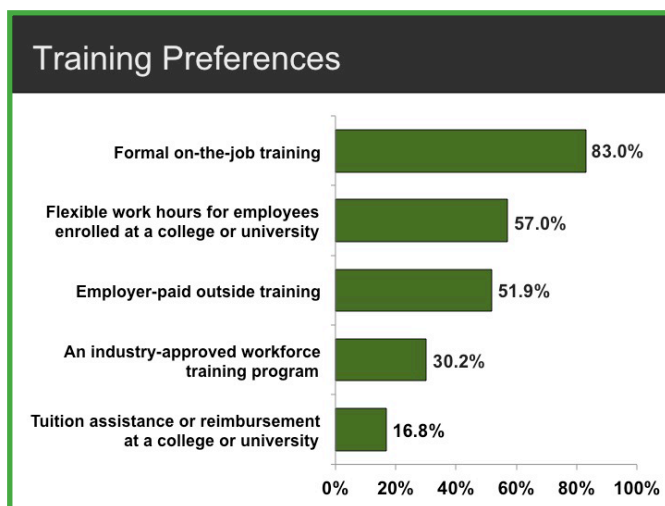
You think that somebody would rather have an electrician with 20 years of electrical experience or somebody who went through a six-month training program? It's not even a question. 100 percent of employers will say, "We'll teach them the solar somehow. What we need is the electrical experience. They need to know the National Electrical Code. They need to know safety. We need to know that if we send them out to a house, they're not going to short the whole thing out." This is critical.

Part of our challenge is that in insulation and weatherization, we saw a very successful program. We said, "Let's do it for solar. Let's do it for wind. Let's do it for all these other jobs." What we failed to recognize was that solar is not a short-term career pathway. Many of these are not moderate- or low-skilled jobs. These are higher-skilled, very technical occupations. This is critical.



Skill preferences is another important piece. An open-ended question about the skills most important to employers resulted in job experience and interpersonal communication skills as the top two preferences.

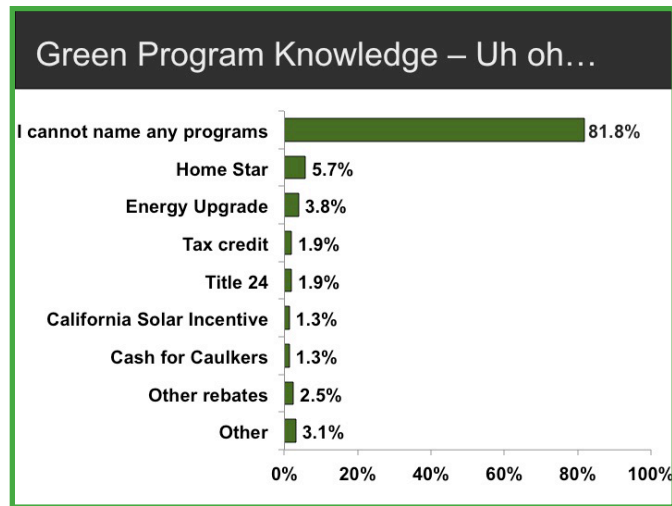
What does this tell me when I advise people about building training programs? Technical competence is always going to be important, and, of course, you have to teach people how to do the work. But they also need to know how to speak and write. And they need to get some sort of hands-on workplace training or an internship. A training program has to have some sort of hands-on component or it will not be valuable to employers.



Formal, on-the-job training was the most preferred of all training mechanisms. Employers note that this means more than shadowing someone but rather engaging with the local community to do the training on a job site. Employers want training programs to send out instructors who can help them do the formal on-the-job training program at their own job

site, so that workers understand their own technology and workplace.

Flexible hours can seem like training that doesn't cost employers very much, because they still get a 40-hour work week. But employers paid for a very high level of outside training, at 52 percent. Employers are willing to pay for training. That's another option for those of you in the training community to consider.



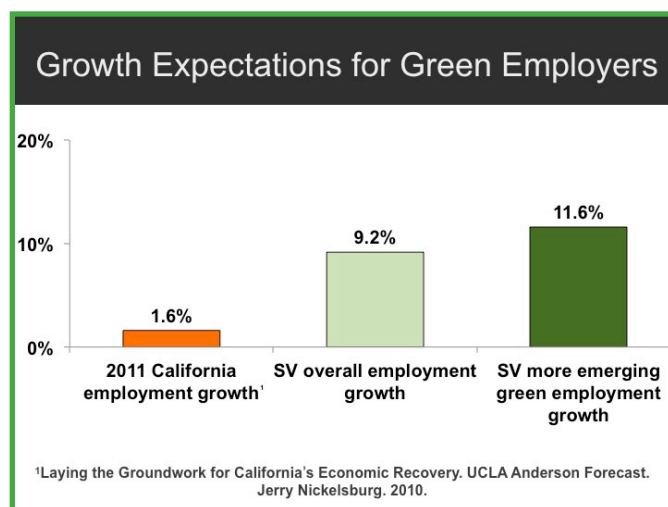
Ultimately, the biggest problem is also why I'm excited to be with this group today: The reason why just about two-thirds of construction firms in San Diego are not doing anything green is that they don't know anything about green. 82 percent could not name a single incentive program or tax rebate for clean energy or green construction goods or services.

In Massachusetts we have the Mass Save initiative. I got about \$5,000 worth of work done for about \$400. The utility-led program sent out an auditor and did all this work. I called everyone I knew and no one had heard of it. How do we expect people to get employed in positions that are putting in this type of product when nobody knows that they can get it for almost nothing?

If we want to get people employed, part of our work is to be advocates for greater awareness of what this all means. The more contractors, homeowners, and business owners know about these programs, the more they will take advantage of the programs and spur the labor market. Sometimes training folks say there's nothing they can do about that, but I disagree. As partnerships, we need to think about how we support one another's work.

SILICON VALLEY EMERGING GREEN

Finally, I want to talk about *Emerging Industry and Technology Sectors in Silicon Valley's Green Economy: Workforce Implications*. We hear a lot about innovation, innovation, innovation. We have found in a lot of our research that the recovery is happening in two distinct and different ways. We see strong growth in traditional industries that face very few outside global pressures. Health care is a good example. And we see strong growth in innovation. We did a study for work2future, the San Jose Workforce Investment Board, to look at where there are job opportunities for their folks.



The results are a little depressing. The great news is that growth for the emerging green employers is the fastest-growing segment of all the studies we've done: 11.6 percent. Emerging green means that they are companies that are getting venture capital funding and are pre-IPO. They're still operating on angel or venture funds. Or these are companies that are growing at fantastic, outlier growth rates—we call them gazelles.

However, the picture is different when we look at the tiered occupations. This is a model that we borrowed and have applied in many regions. Tier 1 occupations typically require a Bachelor's degree or higher, plus experience. This includes everything from a Bachelor's degree and a few years' experience to PhD engineers and scientists. Tier 2 are the foundational middle-class occupations, such as sales,

Occupational Profile for Emerging Green Industries

	Avg. Wage per Hour (CA)	California Workforce	Silicon Valley Workforce	Emerging Green Industries Workforce
Tier 1 Occupations	\$ 43.84	22.4%	34.0%	60.9%
Tier 2 Occupations	\$ 20.53	58.6%	50.0%	38.7%
Tier 3 Occupations	\$ 11.99	19.0%	16.0%	0.4%

Tier 1 Occupations = Manager, professional, & science

Tier 2 Occupations = Sales, administrative, & production

Tier 3 Occupations = Food service, personal care, & cleaning

administration, and production. Here we find mostly people with Associate's degrees and new Bachelor's degrees before they go into management positions. Finally, Tier 3 are the much lower-skilled occupations.

The emerging green profile tells us something a little scary about opportunities for the Tier 3 occupations. There's really nothing there. But what is exciting about this is that almost 40 percent of the jobs are in Tier 2. We see in our research more and more that the goal of the public workforce system and the training providers is not the low-hanging fruit of quickly placing people into Tier 3 occupations. The "shine 'em up and spin 'em out" programs to get people into the workplace quickly are no longer relevant in the 21st-century economy. That model does not work anymore. We can try to hold onto it or we can innovate. Our job is to get people from Tier 3 into Tier 2.

This is important because the recovery is happening now in Tier 2. The reason the recovery is happening now in Tier 2 is because it's the only place the recession happened. Our national analysis showed that despite all the jobs lost during the recession, Tier 3 was flat, with a drop of less than 1 percent. Tier 1 grew by 7 percent. That growth means the middle class in America lost more than all of the net jobs lost in this country. That job loss is not only the biggest percentage; it's also the biggest real number. And it's where jobs are coming back now. So our job has to be getting the folks at Tier 3 up to Tier 2.

CONCLUSIONS

Conclusion I

Strong Growth

Recent studies show strong growth, with over half of employers expecting to increase staffing levels.

Conclusion II

Opportunity & Challenge

SV's emerging green occupational profile is:

- 61% high-wage/high-skill occupations
- 38% middle-wage/middle-skill occupations
- virtually no low-skill/low-wage occupations

What does this mean for the nation and for innovative vs. traditional industries?

Conclusion III

Change Is Constant

More than 3/5 of employers expect at least some change in the composition of their workforce.

1/5 expect substantial change.

But there is little difficulty finding qualified workers...

What are our conclusions? First: obviously, we have strong growth. One example comes from a national study we did for Solar Foundation, the 2010 and 2011 National Solar Jobs Census. We found at least 100,000 solar workers who spent at least 50 percent of their time working in solar, with 7 to 10 percent growth projected for the next year. Awesome. It's one of the greatest success stories we have in this country.

Actually, though, that is 7,000 to 10,000 new solar jobs in this country and 10,000 jobs is nothing. Even 100,000 jobs is nothing. The Department of Defense and the Department of Homeland Security employ 168,000 people in San Diego County alone. That's how small the scale is of what we're talking about.

Continuing with that example, how many of those new solar jobs are going to be installers? Maybe 30 percent. So in the entire country we might need 2,100 new solar installers. We probably should have done this study before we funded tens of thousands of training cohorts in this field. Unfortunately, we were all working with some thought models that were incorrect.

Let's return to the lessons from this emerging green industry. We need to start focusing on these lessons as the hallmark of every innovation industry, not just green. Tier 3 jobs are going to stay about the same, without many opportunities. In contrast, there are growing opportunities with real career pathways and good wages if we can get people into those middle-skill occupations.

The other problem with the shine 'em up and ship 'em out model is that we can't ever ship 'em out. Three-fifths of employers expect at least some change in the composition of their workforce and one-fifth expect substantial change.

Employers aren't having a ton of difficulty right now because of the slack labor market, but they will as the recovery continues. Over and over again, we're hearing that it's lifelong learning that's important. It's not training. Training is actually becoming kind of a dirty word. Employers want people who can come in and learn and will be flexible and adapt well.

We need to find ways to work with the incarcerated population early. This is a global statement. We cannot wait until someone's 18, and we can't wait until someone's out of prison. This starts at prekindergarten. Everything we're talking about starts early. Let's do something innovative and create a bridge program that carries people right through, maybe starting six months before release and then carrying them through with strong supports and education. This really is about education and training.

RECOMMENDATIONS

Recommendation I

Continuing feedback from employers.

Develop better relationships with employers.

Identify and examine metrics and indicators that inform the continued assessment of the clean energy industries.

Recommendation II

Experience is key for jobseekers.

Develop new training models that provide opportunities for industry experience and greater understanding of operations in key segments.

Recommendation III

Workforce needs are diverse. Training cohorts should be as well.

Workforce investment boards and training providers should focus on meeting specific workforce needs by providing more varied and specialized training to smaller cohorts of trainees.

A few recommendations. One I mentioned already: We have to have continuing feedback from employers. If you do a study in 2010, by 2012 there may be some relevant points, but for the most part you're outdated. You need to keep talking with your employers and identify the metrics that can be useful to you.

Often we like to ask where there is job growth, but maybe it would be useful to ask our employers to describe the people they've hired over the last six to twelve months. Have they hired any? Where did they find them? What was the difference between that person and all the other résumés they got? Those are important questions to ask. Let's not always worry so much about the numbers, and let's start talking about what's behind them.

Second, experience is key. If I could give one recommendation for developing a training program, I would say to include some sort of externship, internship, or, in some way, shape, or form, simulate a job site. I know that's difficult, and we can't always get employers who are willing to engage with us on that. I know there are insurance issues and other problems and obstacles in some of these occupations. However, there are incredible things we can do even with simulated labs and I encourage you to do that.

The only thing worse than an employer not knowing about you is an employer viewing you as a charity case. The most important thing workforce people can do is understand that the assumption that we're providing employers with value by engaging with them and training the way they want is probably flawed. How do we actually really add value for employers?

I have a suggestion. You are the people who run workforce and economic development programs, who are presidents of community colleges and deans, who are the CEOs of the workforce boards and community-based organizations. You have access to people that most of the employers in your community do not. Important people. Recognize that you know a person at the state capitol who is in charge of economic development policy for the governor's office. Or

the chairperson of an important committee. Or someone in the mayor's office. If 51 percent of the companies who are hiring people in your region have fewer than five employees, they can't get in with those folks. Have an event with the mayor, with someone from their office, or with somebody else from government important to an employer's business, then give that employer a preview about what's coming and what they should expect. This does a little work for their nonexistent governmental affairs office that they're too small to have. You've provided real value. Then when you call that employer, they will remember you and that you got them in front of that public policy person to express their concerns. They will take your call. But if it's a charity case and they're busy, they're not going to take it. So think about novel way of adding value that may not seem valuable to you at first.

The third recommendation gets to a big challenge that we have: The needs of employers are diverse. Employers are not telling us that they need 25 of anything. They're telling us that they need two of something and four of something else.

By the way, a lot of what we thought were jobs two or three years ago when we started these GreenWays training programs are not actually jobs. They're functions. There is no such job as being a HERS rater only. It's a function. You better be able to do something else. If your employer says, "I've got no HERS rating today. Do you know how to install windows? Can you put some insulation in?" and all you can do is rate a home, then you're in trouble.

That means we need to over-train. It means we need to put people through multiple training programs. I don't mean necessarily stackable credentials. I mean very different credentials. I mean if you want to get a solar installer credential, then learn all you can about sales. Learn all you can about efficiency. Learn all you can about electrical work.

This is not going to be easy. Our biggest challenge is we're supposed to get people in and out of training in a few months. What we're seeing over and over again is that employers want strong foundational skills in the core occupation.

There are different populations we need to deal with, and each needs to be dealt with differently. If you've got someone who's been unemployed for a long time and has great foundational skills in something that was valuable to someone once, we can get them through a short-term training program. If we don't, we're a long way from worrying about technical skills. We need to focus on the necessary interpersonal skills, the problem-solving ability, and the foundational core skills.

I have a strong affinity for community colleges, but they face a real challenge in that so many of the students coming in do not have adequate basic skills. They use all of their Pell Grant money just to get to get where they should be when they graduate from high school. What do we do when there's no more money and community college budgets are tight? How do we connect that to new research coming out of Georgetown University about degree type and the importance of STEM fields? Community colleges are talking about arithmetic and getting students writing a basic, grammatically correct sentence. They say, "You want to start talking about STEM? You want to start talking about engineering?"

We have a long way to go. We can't focus all of our efforts on Tier 3. We need to start thinking about those distinct populations and what they need. As we work with employers, they recognize it. Community colleges recognize it. The public workforce system recognizes it. The CBOs recognize it. So my strong recommendation here is that as we start thinking about building sector and workforce partnerships, we need to think about who's coming in the door and the challenges they're facing. We also need to think about the employers' challenges and what they're really telling us. Then, we need to constantly think of how we can provide value to both groups. That would be my last recommendation.

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