

San Fernando Valley Green Employer Report

Conducted for Los Angeles Valley College

January 2012





This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright owner.



TABLE OF CONTENTS

List of Figures.....	iii
List of Tables.....	iii
Executive Summary	1
Introduction to the Study	1
Methodology Overview	1
Key Findings and Recommendations.....	2
Conclusions	6
Secondary Data Analysis	8
Economy Overview	8
Green Clusters.....	11
Database of Green Firms.....	14
Geography.....	15
Green Firm Survey.....	19
Employment Outlook	19
Industry and Technology Profile.....	21
General Hiring Challenges	24
Occupational Data	27
LAVC Awareness and Interest.....	30
Appendix A: Methodology	A-1
Secondary Research	A-1
Primary Research	A-1



LIST OF FIGURES

Figure 1: San Fernando Valley 2011 Jobs by Industry	8
Figure 2: Percent of Jobs for San Fernando Valley and California by Industry	9
Figure 3: Percent of Jobs for San Fernando Valley by Occupation.....	10
Figure 4: COE Green Cluster Ranking by Jobs and Mean Earnings Per Worker in the San Fernando Valley	11
Figure 5: COE Green Cluster Job Growth, 2011-2012 in the San Fernando Valley	12
Figure 6: Map of Number of Green Building and Energy Efficiency Companies	16
Figure 7: Map of Number of Renewable Energy Companies	17
Figure 8: Map of Transportation, Alternative Fuels, Sustainable Research, Green Consulting, and Other	18
Figure 9: Firm Size.....	19
Figure 10: Growth Expectations for the Next 12 Months.....	20
Figure 11: Estimated Growth Rate over the Next 12 Months	20
Figure 12: Industry Classification.....	21
Figure 13: Role with Technology	22
Figure 14: Most Important Technology Areas	23
Figure 15: Workforce Difficulties.....	24
Figure 16: New Hire Deficiencies	25
Figure 17: Training Preferences	26
Figure 18: General Occupational Roles.....	27
Figure 19: Occupational Growth Expectations for the Next 12 months	28
Figure 20: Occupational Growth Rates for the Next 12 Months	28
Figure 21: Occupational Hiring Difficulties	29
Figure 22: Awareness of LAVC	30
Figure 23: Interaction with LAVC for Training or Recruiting	30
Figure 24: Interest in Interns.....	31

LIST OF TABLES

Table 1: Overview of Project Methodology	A-1
--	-----



EXECUTIVE SUMMARY

INTRODUCTION TO THE STUDY

Los Angeles Valley College (LAVC) commissioned BW Research Partnership, Inc. and its Green LMI subdivision (BW Research) to gather information from green firms in the San Fernando Valley to better understand their needs for trained, qualified workers. The information gathered will be used to develop training programs to meet workforce needs and place qualified workers in jobs.

For this study, green firms were defined as firms that conduct business related to renewable energy, energy efficiency, green building and design, environmental protection, or any other green-related activity. In the survey, firms self-identified as green.

The San Fernando Valley is an urbanized valley located in the Los Angeles metropolitan area of southern California, defined by the dramatic mountains of the transverse ranges circling it. Home to 1.76 million people, it lies north of the larger and more populous Los Angeles Basin.¹

METHODOLOGY OVERVIEW

The first step in the research process was to collect and analyze secondary data to highlight San Fernando Valley's economic strengths and potential for green firm development and expansion. This allowed the project team to identify green industry sectors in the San Fernando Valley with the largest concentrations and opportunities for growth. A database of these local green businesses was then developed and reviewed. Discussion with LAVC regarding the secondary data analysis and the database findings led the project team to focus on green building and design (including architecture and industrial design), solar and renewable energy, and green consulting and engineering services firms.

A quantitative survey of 98 green firms local to the San Fernando Valley was then undertaken to explore technologies used by these green firms, occupational role types, expectations for job growth over the next 12 months, recent hiring challenges, training preferences, and LAVC awareness and interests. Sixty firms completed the telephone version of the survey and 38 completed the survey online.

A series of 16 qualitative executive telephone interviews with green building design and solar energy firms local to the San Fernando Valley were also conducted. The executive interviews were designed to better understand employers' needs for trained, qualified workers. Specifically, the interviews addressed topics that included;

- green services and products that are expected to grow;
- importance of green credentials and qualifications;
- value of and interest in LAVC green internships; and

¹ http://en.wikipedia.org/wiki/San_Fernando_Valley.



- other employer preferences related to hiring, employees, and training.

KEY FINDINGS AND RECOMMENDATIONS

Key Findings

The key findings of the research include:

- Solar and green building and design demonstrate strong growth potential in the region.
- San Fernando Valley has strength in professional services, particularly in relation to mapping, surveying, and consulting.
- Manufacturing and general construction make up relatively small portions of the local economy and are expected to shed jobs over the short-term.
- Firms express a reluctance to hire over the next several months, however, a larger number expect to grow over the next 12 months.
- Most green businesses in the region are small,² and therefore only hire a few employees per year, even when growth is strong.
- Firms express relatively high levels of difficulty in finding qualified workers, indicating a need for additional training and opportunities to gain experience.
- Green credentials and incumbent worker training are both important, but firms – particularly smaller firms – have limited resources to pay for them.
- The vast majority of firms are aware of LAVC, but few are working with the college directly on any program development.
- Smaller companies are more interested than larger companies in low- or no-cost training from community colleges because they are less likely to be able to afford the large investments in training that larger companies make.

Recommendations

Any assessment of the San Fernando Valley economy requires the recognition of fairly stagnant overall job growth in the short-term.³ Though San Fernando Valley green employers report higher than average hiring expectations, the vast majority of these employers are small. As a result, **workforce demand is highly fragmented, with companies looking to hire one or two workers with different skills in multiple areas.**

² The U.S. Small Business Association defines a small firm as any with fewer than 500 employees. For the purposes of this report, a small firm is any with fewer than 50 employees.

³ 1.1% job growth in San Fernando Valley from Q3 2011-Q3 2012, according to EMSI Complete Employment, 2011.3.



Green employers across the nation report three primary factors related to their growth prospects: general economic conditions, availability and continuation of federal, state, and local incentives, and consumer awareness.⁴ It is evident that economic recovery has been slower than anticipated and that the political will for continued incentives for green technology is uncertain at best. This uncertainty is leading employers to make fewer decisions in the near-term, further complicating the ability of workforce development and training providers to plan accordingly to meet their needs.

Employers also expressed concern about the future, with many interviewees suggesting that their hiring would be more likely to pick up six to 12 months from now and **few reported current openings for jobs**.

To add to this difficulty, occupational titles are becoming less important to employers and a functional approach to hiring seems to be gaining popularity. According to the green employers surveyed for this report, the most promising of these occupational areas, identified by the percentage of firms that employ the position and the difficulty in finding qualified applicants for the position are: **1) administrative and accounting; 2) project management; 3) and sales**.

Employers did give clear guidance, however, in what they would deem most valuable in the workplace. These detailed findings include:

Employers view green training as necessary, but not sufficient, to new hires. Specifically, employers frequently noted that the core skills within each of the categories above were more important than any green-specific knowledge or abilities.

Employers identified both the importance of soft-skills and technical skills. Particularly for the growth areas reported in the survey, respondents noted that communication skills and problem-solving ability are critically important for their workers. Employers also identified technical skills in using software applications for drawing and design programs such as AutoCAD or Building Information Modeling (BIM) applications, which are the next generation of these types of software.

Experience matters. By and large, employers note the importance of both experience and core, foundational skills for their green-related positions. In the surveys and interviews, employers repeatedly suggested that **stand-alone green training programs had little value without on-the-job training or previous experience**, and a solid foundation in the core tasks of the occupation, whether green or not.

The trends discovered in the research highlight the challenges facing many education and training providers, because **current conditions limit the employment prospects of even the best trained job-seekers**. It is apparent that there are no specific green occupations with specific, short-term training requirements that have sufficient demand to require large cohorts of students. However, many of the core skills that are necessary have application beyond the green industries.

⁴ The Solar Foundation, 2011 Solar Jobs Census, available at <http://thesolarfoundation.org>.



As a result and in order to maximize its students' chances for success, BW Research recommends the following targeted actions: 1) Develop contextualized training programs in core occupational categories, including administrative and accounting, project management, and sales; 2) Ensure that the program offers cross-training so that budding project managers learn sales and accounting skills and vice-versa; 3) Incorporate soft-skills training with technical skill development; 4) Offer internship opportunities for trainees, but recognize that interns must have some level of skill to be valued by employers; 5) Market training programs to companies for their incumbent workers; and 6) Focus on small businesses for partnership.

1. *Develop contextualized training programs in core occupational categories, including administrative and accounting, project management, and sales.*

These occupational categories were reported as the most prevalent and difficult to find among survey respondents. Additional data indicate that these occupational categories are also useful in many other (non-green) fields, further supporting the chances for employment upon completion of the program. The training should include contextualized learning, or green-related examples and modules, to develop the core occupational skills. The programs should incorporate general green-specific knowledge after the core skills are developed. Further technology-specific training can be obtained by any number of industry associations' existing training, such as NABCEP, Building Performance Institute (BPI), or Leadership in Energy & Environmental Design (LEED).

For instance, sales-related skills are more valued by employers than specific green-related knowledge. However, candidates who have learned specific technologies while enhancing their sales abilities will likely have an advantage over other candidates. A sales course should first provide basic sales training, with green examples throughout. It should also incorporate general sustainability principles to aid in the trainees' green knowledge base. Because of the diffuse nature of firms in the region, however, if a trainee wishes to specialize in solar sales, a NABCEP course would be appropriate.

Green accounting and administrative programs refer to the specific technical training concerning incentives, tax regulations, and calculations of return on investment, as well as processing various permits and filings. These programs should include the general federal and state incentives, regulations, and tax policies referring to renewable energy and energy efficiency improvements, as well as an overview of local ordinances, zoning issues, building permits, and other relevant topics.

As another example, Los Angeles Valley College should ensure that short-term green accounting programs or green administrative programs provide students with relevant experience and familiarity with the tools and skills related to accounting or administrative work. Otherwise these programs will not enhance employment prospects with green firms. **The training should be sure to**



include the various incentive programs that exist, as well as provide real-green world examples for trainees.

2. Offer cross-training.

- **Los Angeles Valley College should consider designing cross-training programs that provide students with a wide knowledge of sustainability practice and within the four core areas described previously.**

San Fernando Valley has many green firms, but even the largest of the subcategories – solar – suggested that cross-training is important in difficult economic times. Several firms noted the importance for workers to understand energy efficiency, renewable energy, and sustainable practices. A cross-trained worker offers more value to a company, especially during times of economic and technology-related flux.

Furthermore, because the research shows that employers are less interested in occupational titles and more interested in functional abilities, LAVC should consider providing training across each of these important areas. Specifically, it is important for salespeople to have a firm grasp on the management of projects, as well as on the various incentive programs. It is also important for them to be able to calculate a return on investment for green projects. By offering cross-training, graduates of LAVC's programs should have a competitive advantage in the job marketplace.

Some of the specific skills to include in this cross-training should include;

- Communication skills focused on understanding and describing the value of renewable energy, energy efficiency, and other sustainable building practices for both sales and project management.
- Introduction to carbon accounting and other sustainability accounting techniques for accounting, sales, and project management.

3. Focus on soft-skills.

Employers interviewed and surveyed for this study reported the overall importance of soft-skills, particularly problem-solving and communication skills. Too often, technical training programs do not focus on these important attributes.

4. Offer well-trained interns.

According to the survey and interviews, employers clearly prefer hiring workers with experience. **Los Angeles Valley College should offer internships so that trainees can obtain the critical hands-on experience necessary for success.**

However, firms repeatedly reported that interns should bring skills to the worksite and that interns with no background or training in the field would be more of a problem than a benefit for companies. Though a majority of firms would welcome an intern, several suggested a rigorous interview process to ensure that the intern could meet minimum skill, safety, and experience standards.



5. Offer incumbent worker training.

Research results pointed to incumbent worker training as an excellent opportunity for supporting the region's green employers. Employers indicated a need for experienced workers with credentials, deficiencies with current employees, and reluctance to hire new workers. Green employers in building and design specifically noted the importance of LEED training. In general, green employers would be well served by technical upgrade training for their incumbent workers, things like the training in AutoCAD, BIM, or related software applications.

Larger firms can fill many seats at once, but smaller firms also present an opportunity for subsidized training, as many reported that the cost of training programs is prohibitive (**see recommendation #6 below**).

6. Focus on smaller companies who are more interested in working with community colleges.

Los Angeles Valley College has a strong opportunity to work with the region's small green firms. Larger companies expressed less interest in working with community colleges to satisfy their training needs. Large companies often invest in their own in-house training or recruit private trainers. Smaller firms were much more focused on the high cost of green training programs, often referring to such costs as prohibitive. Because they are less likely to have existing programs, and because cost is a more serious issue for them, smaller firms present greater opportunities for local community colleges.

CONCLUSIONS

BW Research offers the following conclusions based on the research findings.

1. San Fernando Valley's green employers are more likely to be hiring than your typical San Fernando Valley employer but their hiring needs are diverse and fragmented. The region's green employers expect to increase employment by seven percent in the next 12 months, which equates to just over 180 new net⁵ job openings. This seven percent increase in employment is more than five times higher than the overall increase in employment forecasted for the region by Economic Modeling Specialists, Inc. (EMSI). The strong employment expectations are a valuable indicator as to why to focus on this group of employers. However, unlike other industry clusters that are tied together through a common supply chain or shared technologies, employers' workforce needs from this sector are quite diverse. It is also important to note that the region's green employers represent a relatively small percentage of the companies and employees in the region.

2. San Fernando Valley's green employers in many ways reflect the region's broader economy. Professional and technical services represent almost one in every five jobs (18%) in the Valley – the highest of the broad regional industry categories – and professional and technical services was the industry that regional green employers were most likely to identify with (27%). The relatively large portion

⁵ Net job openings are new jobs and not those that are replacing other positions.



of green service-related firms and the relatively small portion of green manufacturing firms has a considerable impact on the types of occupations and skills that green employers are looking for in the region.

3. Green job seekers in San Fernando Valley should focus on sales, project management, administrative, and accounting skills, or at least some combination of those skills. Green employers in the region are more likely to be looking for individuals that have a broad range of skills rather than those that are highly specialized in a certain technology or industry. Job seekers need to have a solid foundation in their prospective occupational arena, which could include sales, project management, accounting, or administrative skills or preferably a combination of those skills. While regional green employers will continue to expect strong technical skills associated with the occupation they are looking for, increasingly they want applicants with strong communication skills and the ability to take on new responsibilities and develop new skills. Learning and developing green skills are important but more as an add-on to the occupational skills they have already developed. Green training and education should be developed in context with the occupational training that is provided and not as a separate training program.

4. San Fernando Valley's green economy is still developing and will likely continue to evolve as the demand for green products and services remains relatively uncertain. Green employers in the region are still working to establish the services and products offered to customers and face significant uncertainty from consumers, the larger macroeconomic environment, and the legislative incentives that many firms require to continue to be profitable. Over half of the region's green employers are using emerging technologies in areas that include smart grid and/or energy efficiency technology or solar and photovoltaic technology. These industries and technologies are expected to continuing change as regional economic conditions, consumer demand, and legislative incentives also face an uncertain future.



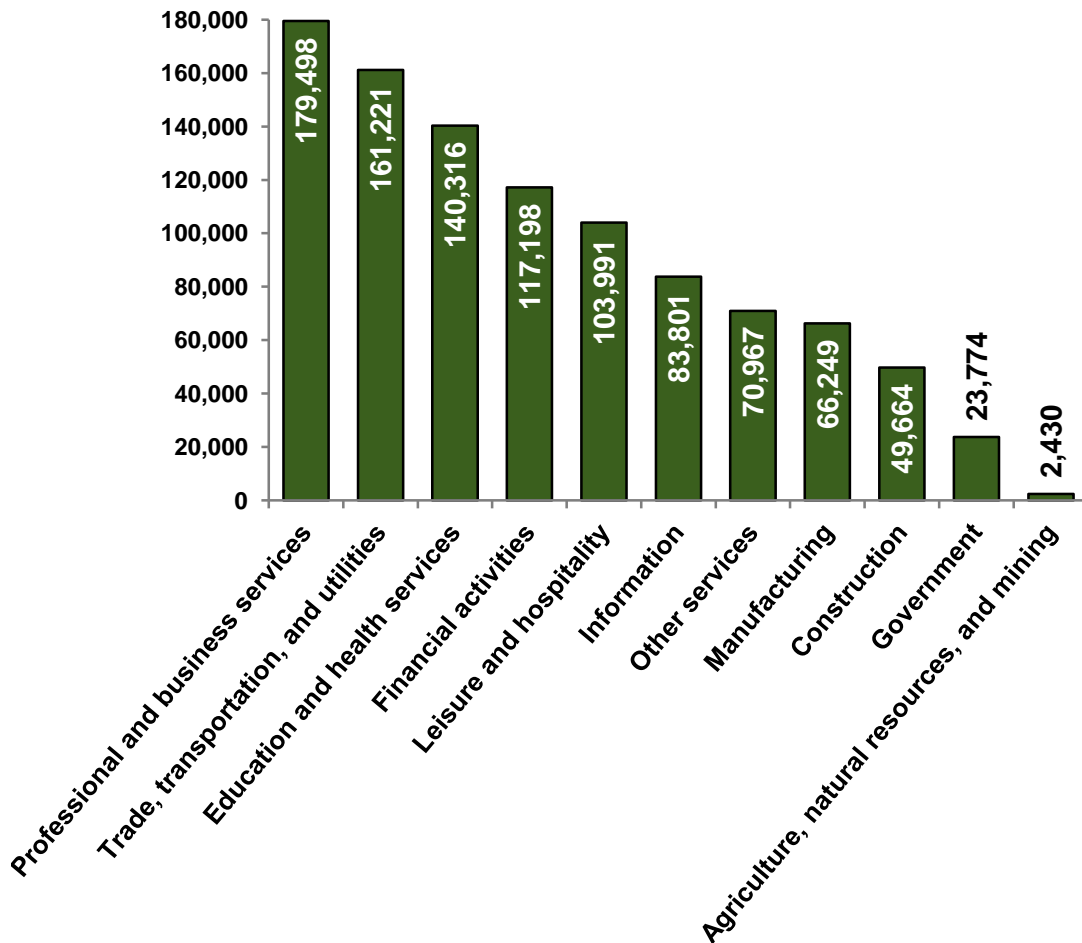
SECONDARY DATA ANALYSIS

The data presented in this section were compiled from Economic Modeling Specialists, Inc. (EMSI) and highlight the San Fernando Valley's economic strengths and potential for green firm development and expansion. This secondary data analysis, together with the development and review of a database of green firms in the San Fernando Valley, helped the research team define the study and the areas of focus for the survey and executive interview phases of the project.

ECONOMY OVERVIEW

The San Fernando Valley economy is dominated by professional and business services (18% of all jobs); trade, transportation, and utilities (16%); education and health services (14%); financial activities (11%); and leisure and hospitality (10%). The figure below displays the number of San Fernando Valley jobs by industry.

Figure 1: San Fernando Valley 2011 Jobs by Industry

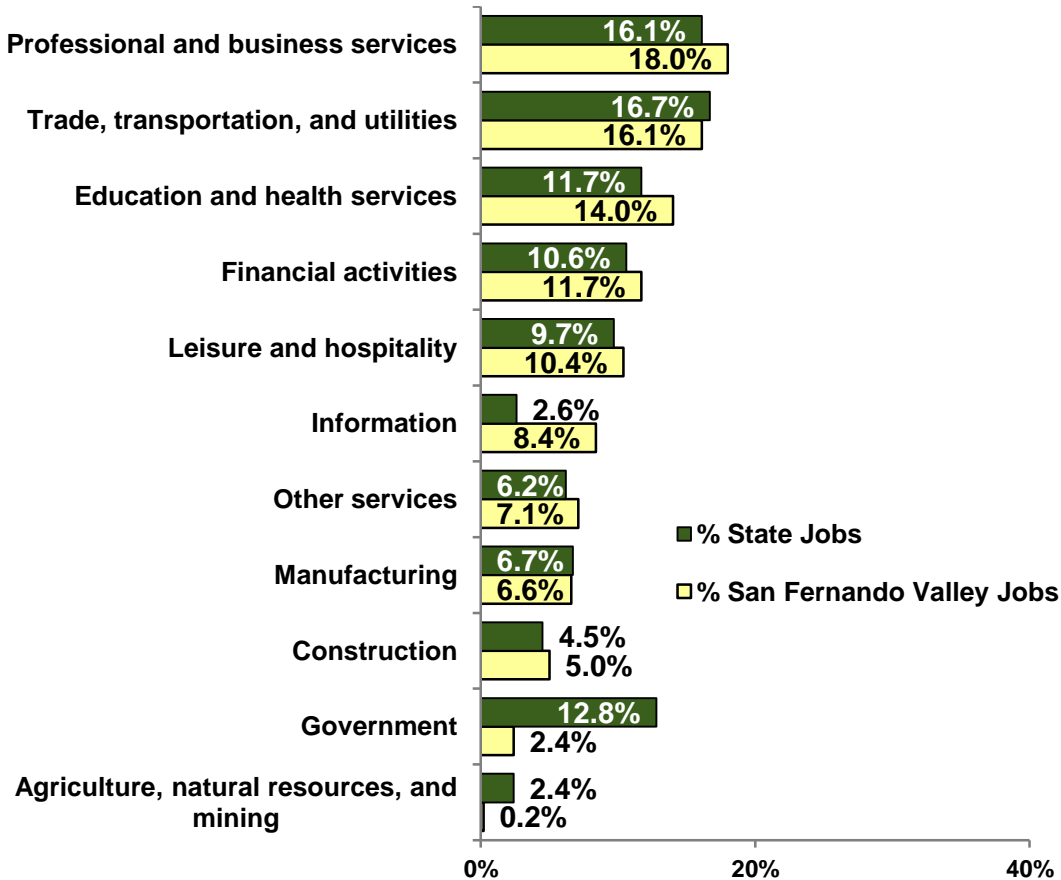




The concentration of jobs by industry sector in the San Fernando Valley is generally in line with the state averages (within two percentage points). The exceptions are the information sector where the San Fernando Valley has a higher concentration (8% of San Fernando Valley jobs compared to 3% of CA employment) and the government sector where the Valley has a lower than average concentration of employment (2% of San Fernando Valley jobs compared to 13% of CA employment).

The reason why localities have different industries can be a result of specific competitive advantages and can be an area appropriate for additional research.

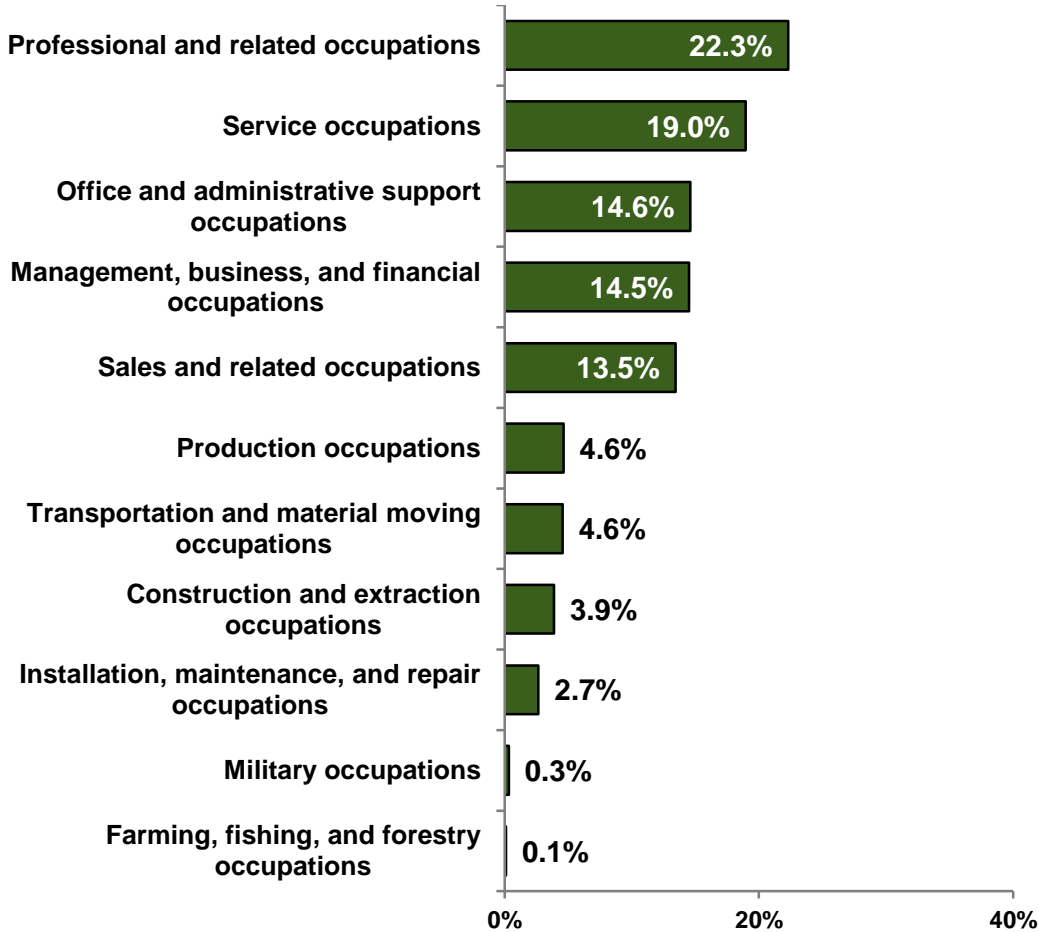
Figure 2: Percent of Jobs for San Fernando Valley and California by Industry





The number of professional positions and service jobs are forecasted to experience the highest growth rates over the next 12 months. This is positive for the San Fernando Valley region because a significant proportion of all jobs in the region are in professional positions, service jobs, office and administrative, management and financial, and sales occupations.

Figure 3: Percent of Jobs for San Fernando Valley by Occupation





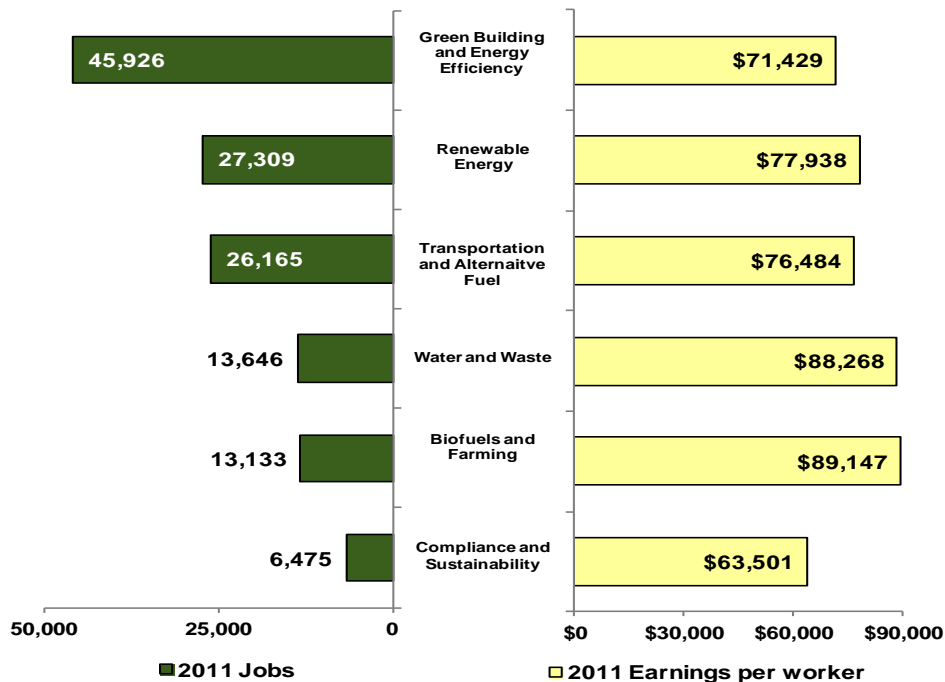
GREEN CLUSTERS

To further understand the region’s potential for green employment, the project team collected additional secondary data on potential green industries. These data are not perfect representations of an area’s green activity, because the existing systems for collecting industrial and occupational data do not conform neatly to green categories. As a result, a portion of the employment in each of these categories is not green, and several industries are repeated in multiple clusters. It is necessary to review these data with caution and recognize their value as broad references to green economic potential.

In 2009, the California Community Colleges Centers of Excellence (COE) developed a report⁶ to classify industries (using the government’s NAICS system) most likely to contain green firms. The San Fernando Valley has economic and workforce activity in each of the six green industry cluster categories identified by the Centers of Excellence; water and wastewater, green building and energy efficiency; transportation and alternative fuel; compliance and sustainability; biofuels and farming; and renewable energy.

In terms of employment, the COE green building and energy efficiency is the largest cluster in the San Fernando Valley, followed by COE’s classification of renewable energy.⁷

Figure 4: COE Green Cluster Ranking by Jobs and Mean Earnings Per Worker in the San Fernando Valley



⁶ The Centers of Excellence are organizations which provide information to community colleges on workforce and economic development programs.

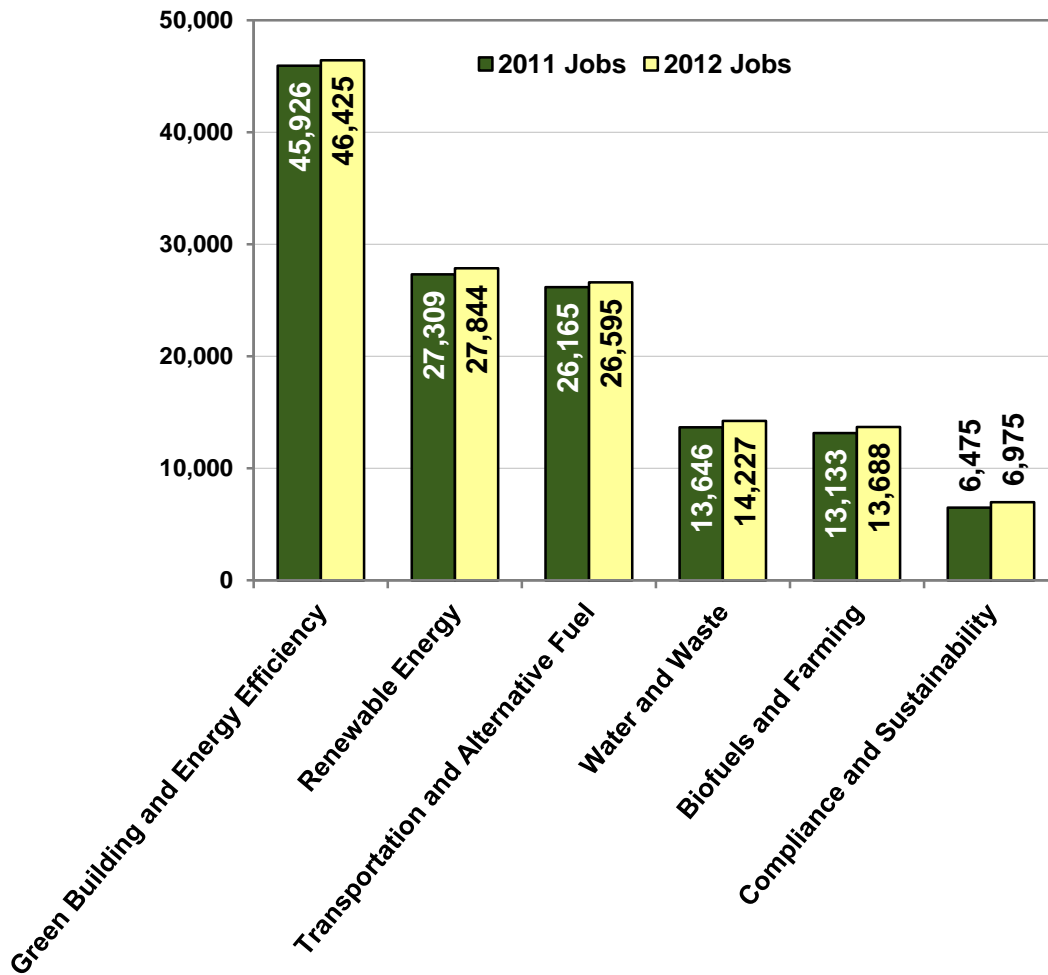
⁷ NAICS industries were drawn from the COE’s [Green Economy Environmental Scan](#) with employment data drawn from EMSI Complete Employment 2011.3.



Interestingly, the fastest growing COE green industry cluster – compliance and sustainability – is also the smallest, and ranks as the strongest industry for the region in comparison to average state-level employment. The compliance and sustainability cluster includes firms such as; professional engineering firms, environmental consultants, and surveying and mapping firms. Its forecasted growth is driven by growth in "other professional, technical, and scientific consulting services."

The figure below illustrates green industry cluster job growth from 2011 to 2012 in San Fernando Valley based on recent labor market information.

Figure 5: COE Green Cluster Job Growth, 2011-2012 in the San Fernando Valley





Examining occupational titles within the COE frameworks, the largest numbers of jobs (and job growth rates) are found among management analysts (expected growth of 296 jobs between 2011 and 2013), managers, all other (expected growth of 38 jobs between 2011 and 2013), and business operation specialists, all other positions (expected growth of 29 jobs between 2011 and 2013).

The proportion of COE "other" green industry clusters in the region match those of the state average, with the exception of transportation and alternative fuels and biofuels and farming, which are both significantly under-represented in the Valley. Traditional water-related industries; bio-fuels and farming and transportation and alternative fuels industries are tiny in comparison.

The number of jobs in mapping and surveying are small, with expected small declines going forward. All of the other green cluster industries are expected to experience flat to low growth or to shed jobs between 2011 and 2013.

As with sustainability and compliance, water and wastewater's strength comes from "other professional, technical, and scientific consulting services." Beyond that category, the cluster is mostly made up of waste, remediation, and recycling.



DATABASE OF GREEN FIRMS

A database of 185 known green firms in the San Fernando Valley was created to provide a framework for the targeted primary research. Multiple sources were compiled in developing the database; past national, state, and local BW Research projects, the [Cleantech database](#), the Environmental Defense Fund's [California Green Economy Map](#), the Go Solar California [Database of Solar Installers, Contractors, and Retailers](#), and other publicly available information.

After the survey and executive interviews were completed, 84 additional firms were added to the database: 35 from the telephone survey, 25 from the web survey, three from the executive interviews, and 21 firms from the Valley Green Team database.

Twenty-one of the 35 firms that completed a telephone survey were previously "unknown"⁸ firms that gave consent to receive information from LAVC.

The 25 from the web survey were firms that consented as a result of Los Angeles Valley College partnering with the Valley Green Team and the International Facilities Management Association to distribute the web survey link to their member companies. Also, 21 firms located in the San Fernando Valley and directly involved in green business were added from the Valley Green Team database.

The database provides the following findings:

1. There are 269 total firms in the database;
2. Most firms are in the solar or other renewable energy category;
3. Most firms are engaged in installation services;
4. There are few manufacturing and compliance firms.

A majority of the green firms in the database fall under the green building and energy efficiency sector or renewable energy. These include those firms that are responsible for solar design and installation, green building design and construction, and those firms that design or build new energy efficient lighting systems. About a quarter of the firms in the database are classified under transportation and alternative fuels or other green. These include those firms that are developing new alternative fuels, research firms that are involved in some aspect of sustainability, and environmental consulting firms.

⁸ The telephone survey included "unknown" sampling, which was targeted sampling of firms in industries most likely to identify as green.



GEOGRAPHY

The San Fernando Valley is an urbanized valley located in the Los Angeles metropolitan area of southern California, defined by the dramatic mountains of the transverse ranges circling it. Home to 1.76 million people, it lies north of the larger and more populous Los Angeles Basin.⁹

The three maps on the following pages visually display the numbers of green firms in the database compiled by BW Research.

Overall in the San Fernando Valley, communities such as South Glendale (20), Woodland Hills (19), Burbank (17), and Chatsworth (17) had the highest numbers of green firms in the database, whereas communities such as Winnetka (0), Mission Hills (0), or Sunland (0) had no green firms identified.

For green building and energy efficiency, the most firms were found in Chatsworth (10), Woodland Hills (10), and Van Nuys (9). For renewable energy, the most firms were found in North Hollywood (9) and for Transportation, Alternative Fuels, Sustainable Research, Green Consulting, and Other green companies, the most employers were found in South Glendale (9) and Sherman Oaks (7).

⁹ http://en.wikipedia.org/wiki/San_Fernando_Valley.



Figure 6: Map of Number of Green Building and Energy Efficiency Companies

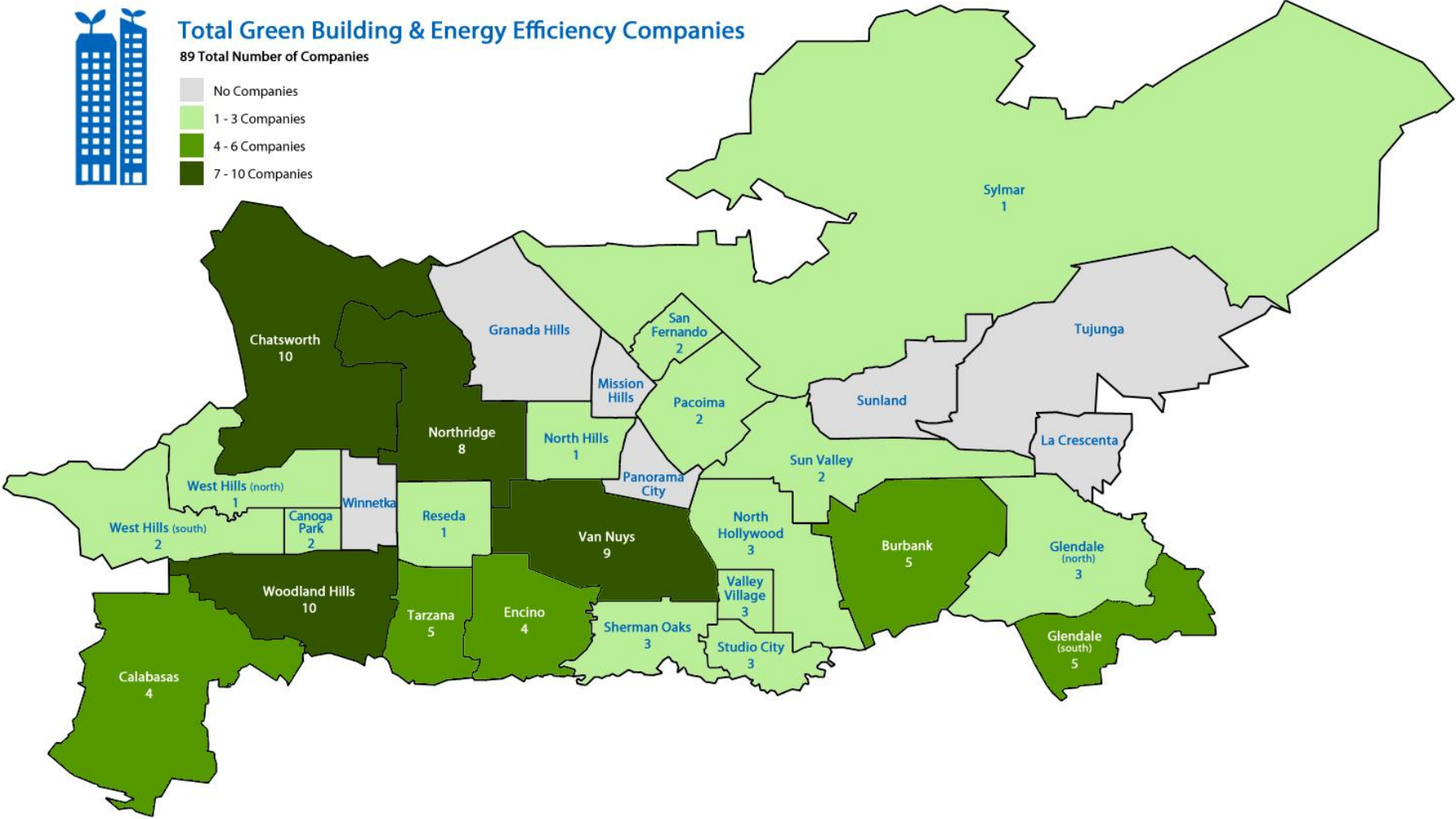
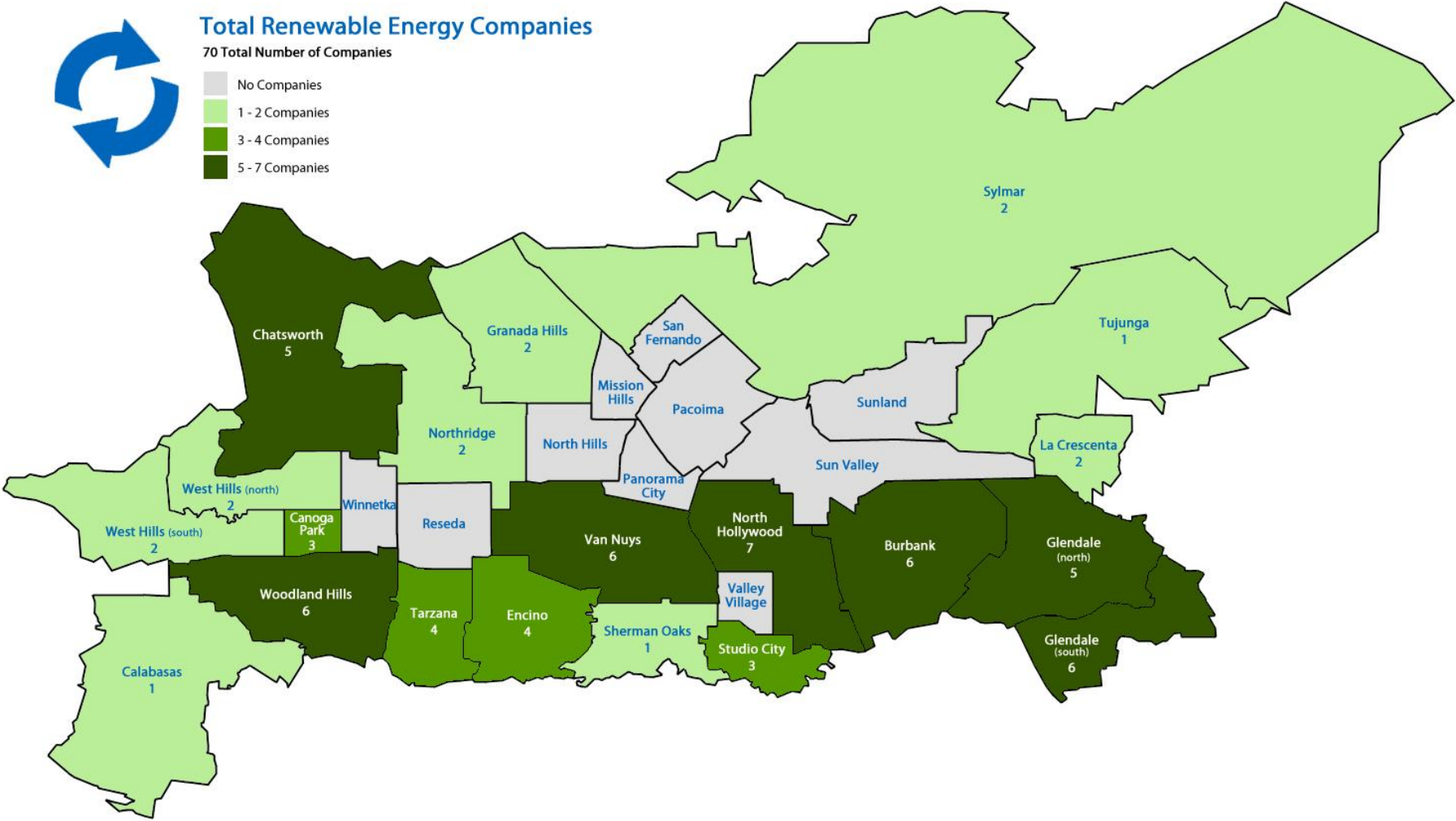




Figure 7: Map of Number of Renewable Energy Companies





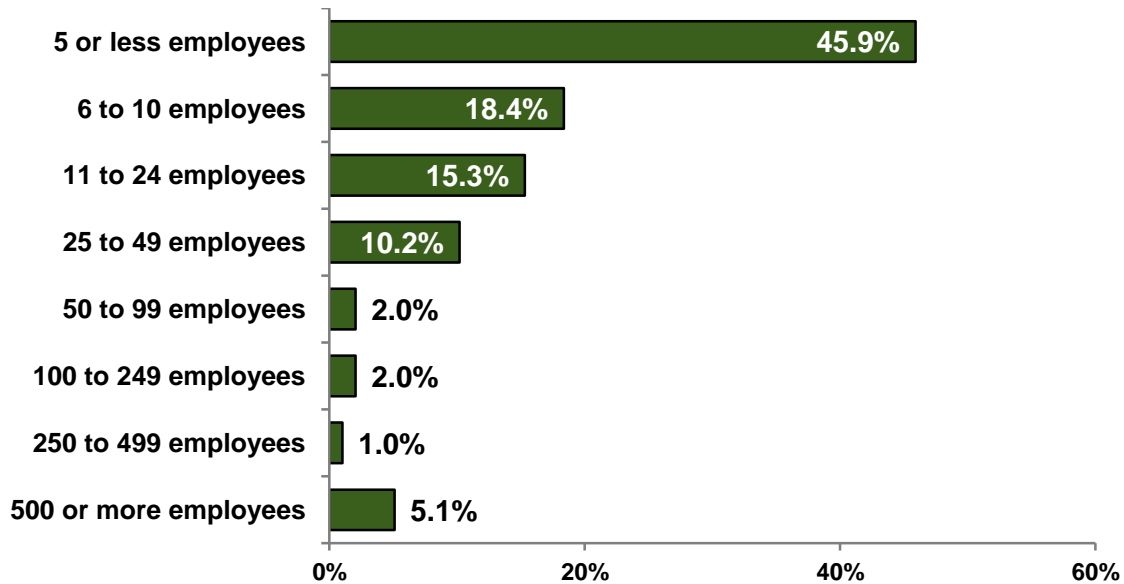
GREEN FIRM SURVEY

This section describes the data collected from the quantitative telephone and web survey of 98 green firms local to the San Fernando Valley.

EMPLOYMENT OUTLOOK

Most of the green firms surveyed were small to medium sized businesses.¹⁰ Figure 9 shows that a large proportion of the surveyed firms (90%) have 49 employees or fewer. Just under half of the firms surveyed (46%) have five or fewer employees. A smaller proportion of firms have six to ten employees (18%), 11 to 24 employees (15%), 25 to 49 employees (10%), 50 to 99 employees (2%), 100 to 249 employees (2%), 250 to 499 employees (1%), and 500 or more employees (5.1%).

Figure 9: Firm Size

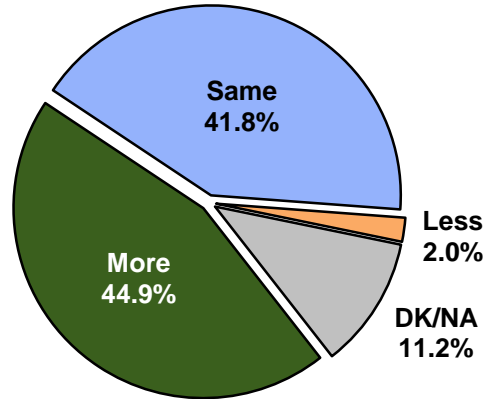


¹⁰ The U.S. Small Business Association defines a small firm as having fewer than 500 employees. For the purposes of this report, a small firm is any with fewer than 50 employees.



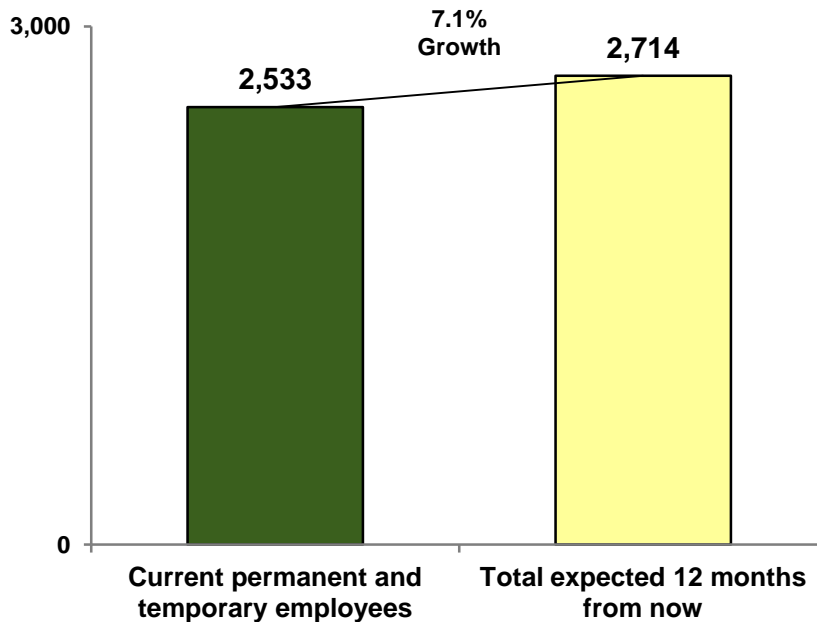
Forty-five percent of the green firms surveyed expect to add employees over the next 12 months (45%), 42 percent expect to stay the same, and only a very small proportion of firms (2%) expect to have fewer employees next year. Eleven percent of firms declined to state or did not know.

Figure 10: Growth Expectations for the Next 12 Months



As shown in Figure 11 below, green firms reported an expected 7.1 percent growth rate¹¹ – or 181 new positions – over the next 12 months. This figure includes permanent and temporary workers.

Figure 11: Estimated Growth Rate over the Next 12 Months



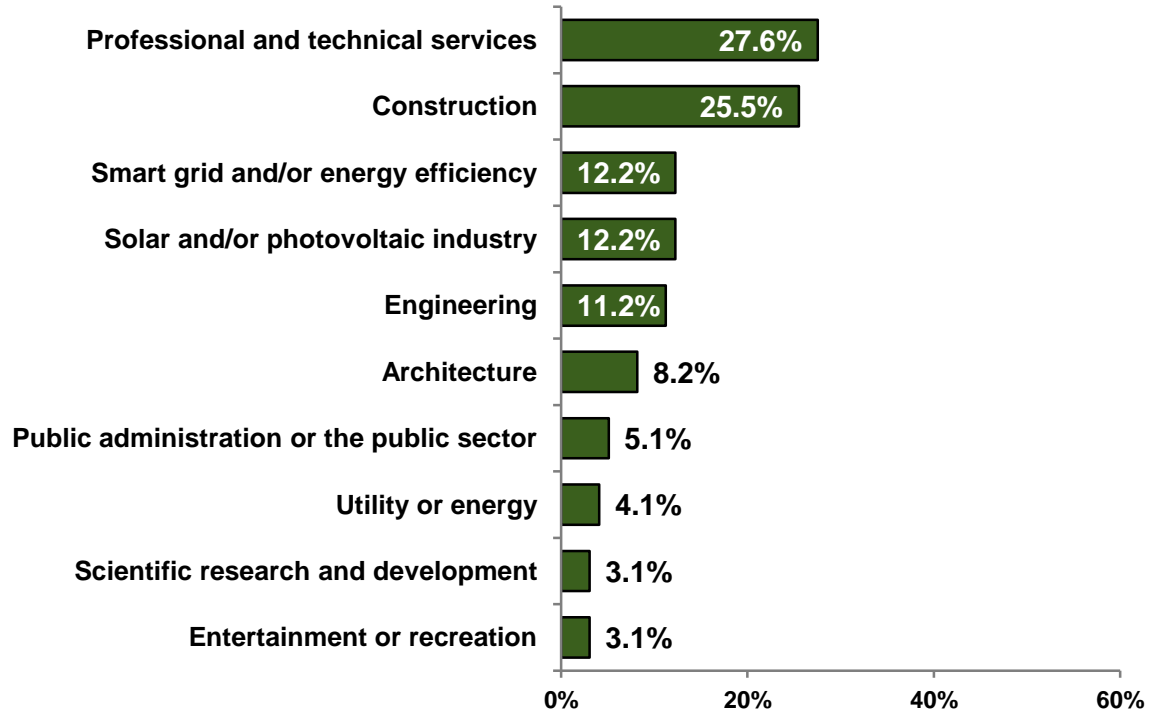
¹¹ The data and growth rate presented in the figure are with outliers removed.



INDUSTRY AND TECHNOLOGY PROFILE

Figure 12 displays the variety of industries represented among the green firms surveyed. Professional and technical services (28%) and construction (26%) were the two industries with which most green firms identified. These were followed by smart grid and/or energy efficiency (12%), solar and/or photovoltaic industry (12%), and engineering (11%).

Figure 12: Industry Classification¹²

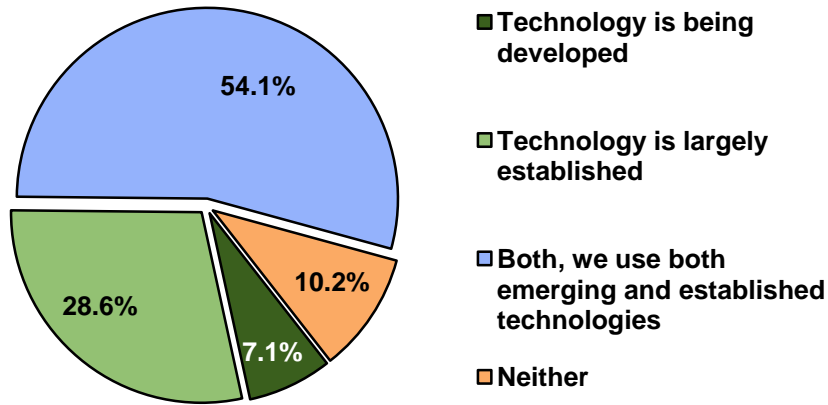


¹² Firms were able to provide more than one industry classification to describe their business.



Figure 13 illustrates that over half of the firms surveyed (54%) focused on both supporting the development of new technology and using established technology. Over a quarter of firms (29%) solely used established technology and a smaller proportion (7%) solely focused on developing or supporting emerging technology.

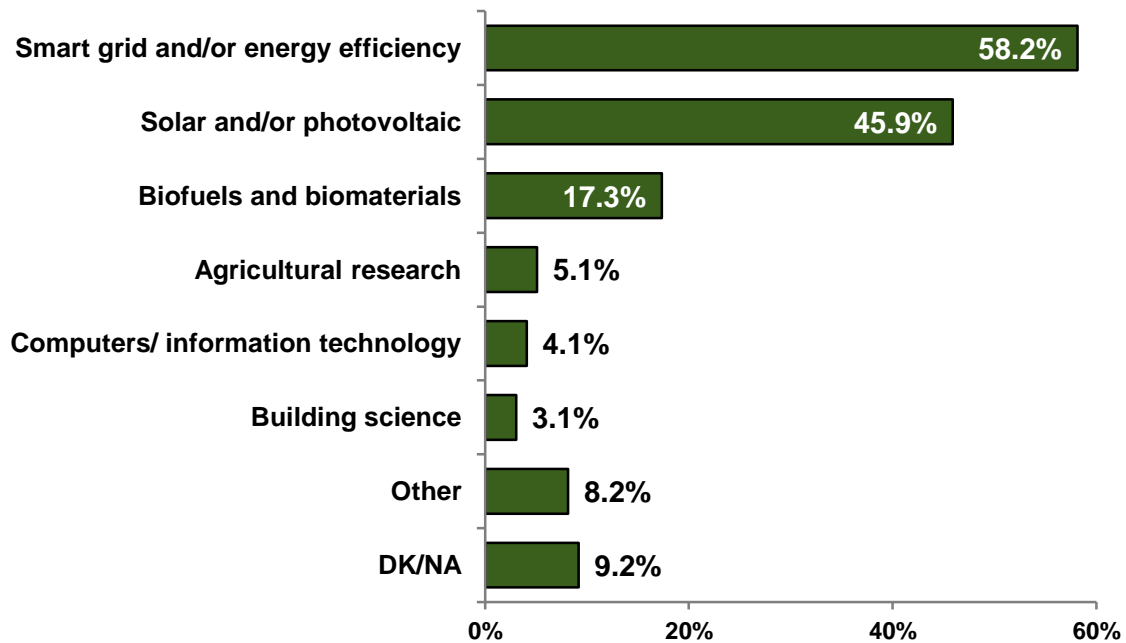
Figure 13: Role with Technology





The most important areas of technology among the green firms surveyed were smart grid and/or energy efficiency (58%) and solar and/or photovoltaic technologies (46%). A much smaller proportion of firms identified biofuels and biomaterials (17%), agricultural research (5%), computers/ information technology (4%), and building science (3%) as the most important area of technology for their firm.

Figure 14: Most Important Technology Areas¹³



¹³ Respondents were able to provide multiple responses to this question.



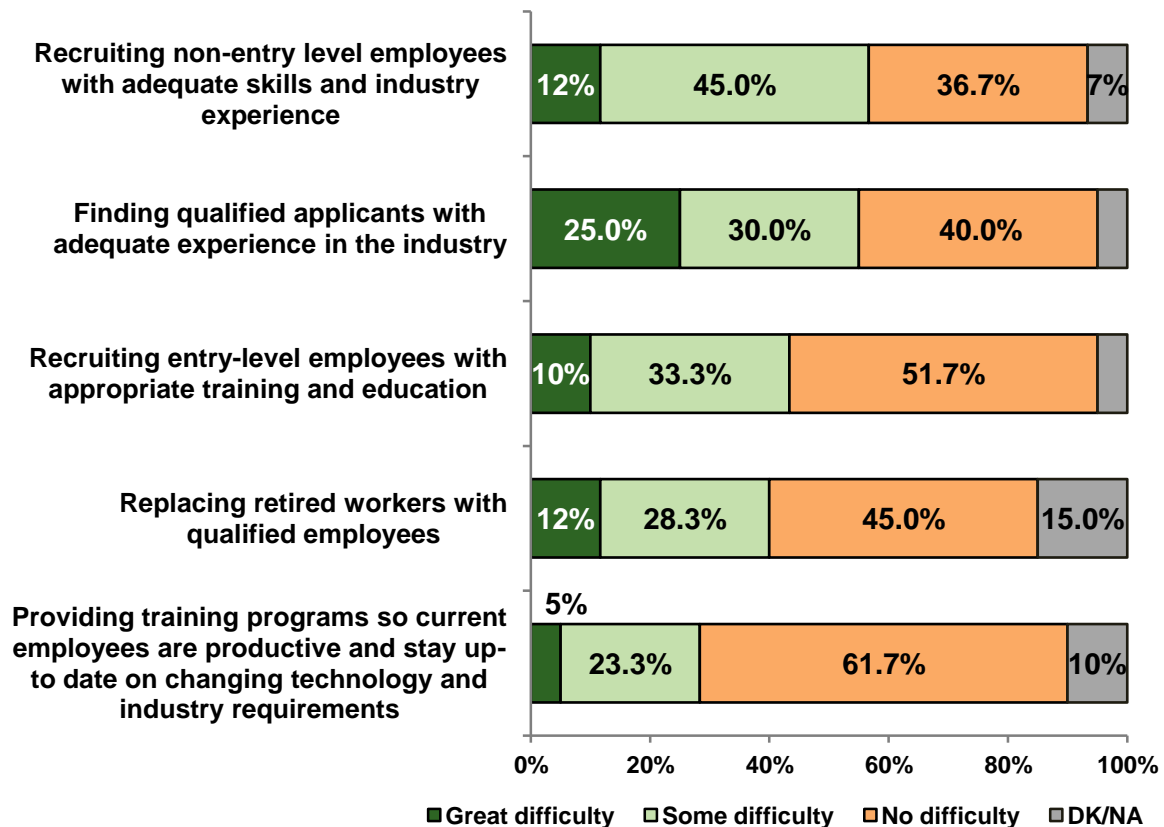
GENERAL HIRING CHALLENGES

The majority of green firms from the telephone survey reported difficulty "Recruiting non-entry level employees with adequate skills and industry experience" (57%). Firms were also asked more generally about industry experience specifically; with 55 percent reporting difficulty "Finding qualified applicants with adequate experience in the industry" (25% cited "Great difficulty" with this task). While these two difficulties are similar, one is asking specifically about industry experience when looking at all qualified applicants and the other is focused more generally on the difficulty of recruiting non-entry level employees.

Four out of ten firms experienced difficulty "Recruiting entry-level employees with appropriate training and education" (43%) and "Replacing retired workers with qualified employees" (40%).

Among those tested, the least difficult challenge for firms was providing training programs so current employees are productive and stay up-to-date on changing technology and industry requirements (28% reported difficulty).

Figure 15: Workforce Difficulties¹⁴

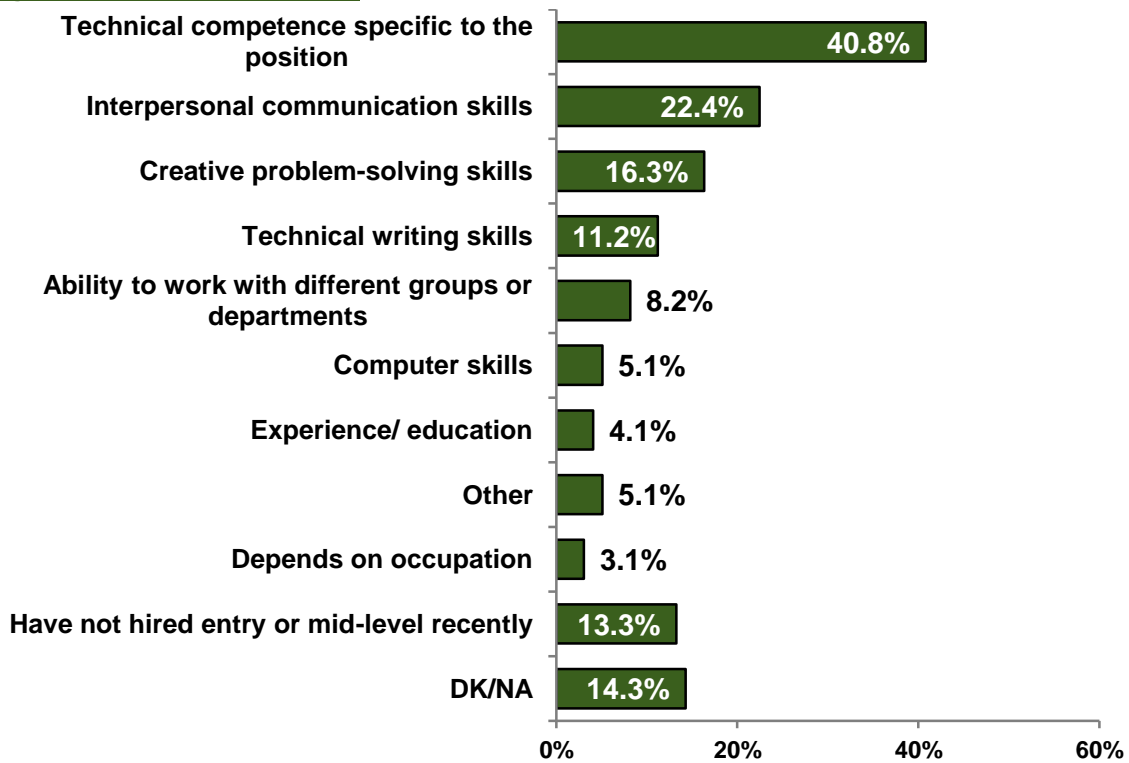


¹⁴ This question series was only asked in the telephone version of the survey (60 firms).



When asked to identify the general skills most deficient among recent entry-level or mid-level hires, a large proportion (41%) of surveyed firms cited technical competence specific to the position.

Figure 16: New Hire Deficiencies¹⁵

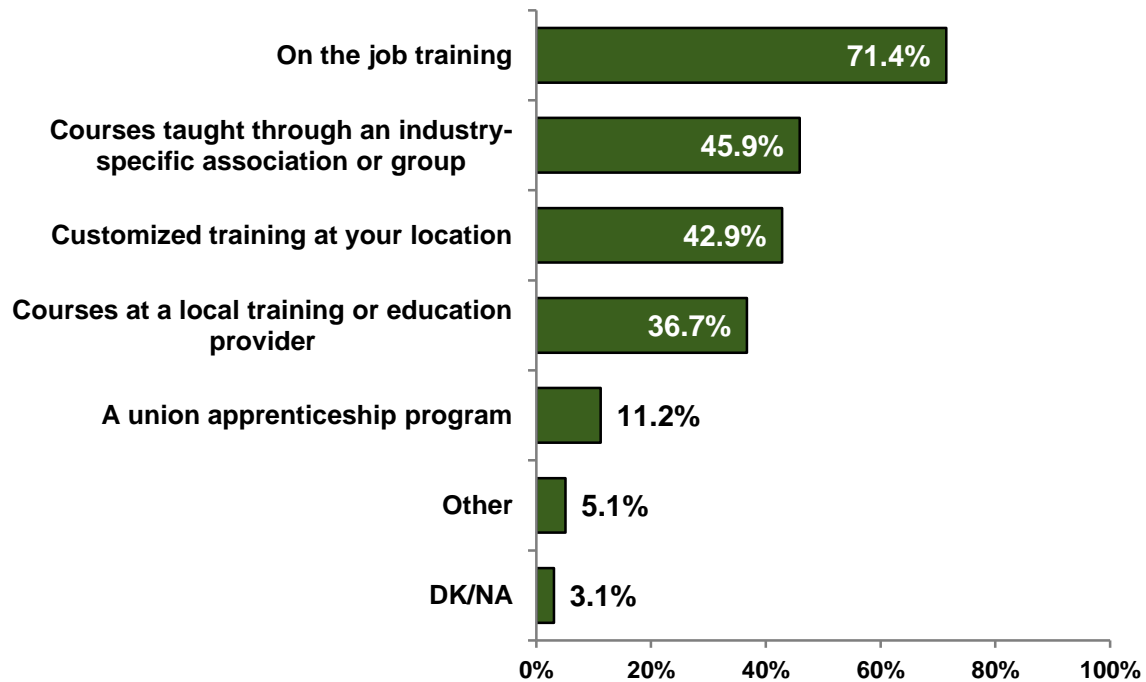


¹⁵ Respondents were able to provide multiple responses.



Figure 17¹⁶ indicates that the vast majority of surveyed firms (71%) preferred to train employees on the job. A large proportion of firms preferred to train employees through courses taught through an industry-specific association or group (46%), customized training at their firm location (43%), or through courses at a local training or education provider (37%). Only a small proportion (11%) preferred a union apprenticeship program.

Figure 17: Training Preferences



¹⁶ Respondents were able to provide multiple responses.



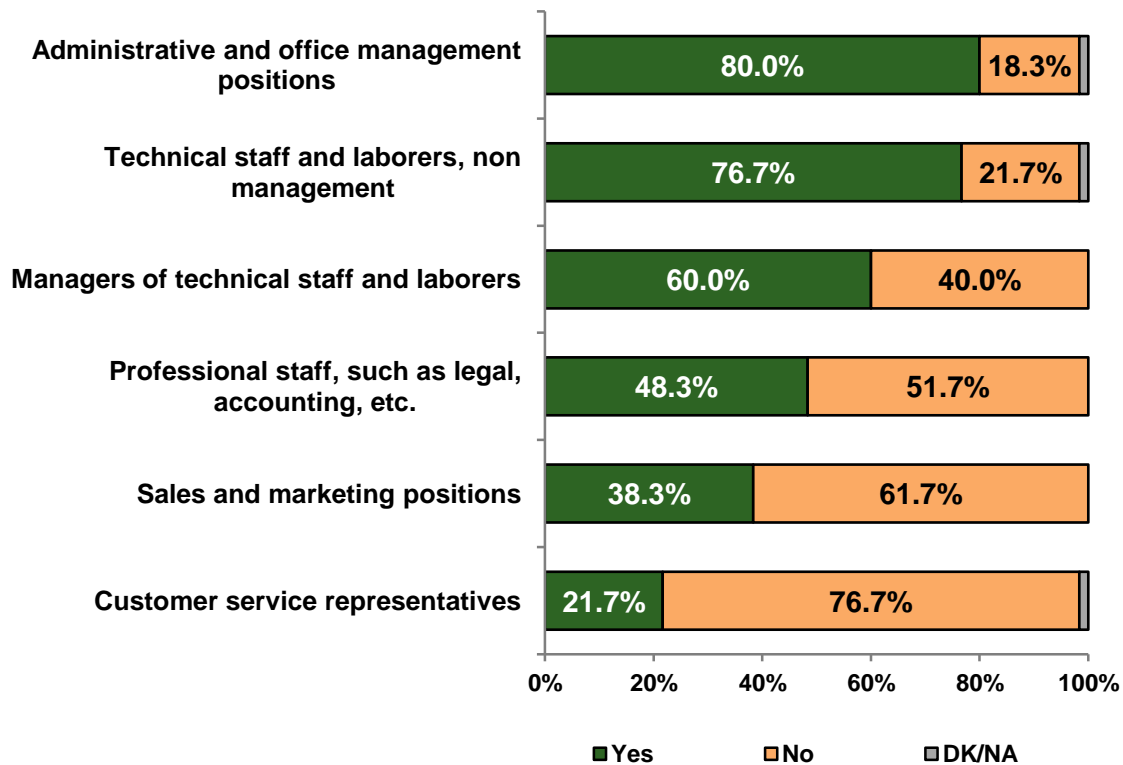
OCCUPATIONAL DATA

In addition to asking green employers about their overall employment outlook and hiring challenges and preferences, firms were also asked about specific occupational roles at their location.

Firms were asked to equate their organizations' specific position titles with the more general ones, assigning one role to each employee.¹⁷ Figure 18 illustrates that most firms employed administrative and office management positions (80%), technical staff and laborers, non-management (77%), and/or managers of technical staff and laborers (60%).

Almost half employed professional staff, such as legal, accounting (48%) and a smaller proportion employed sales and marketing positioning (38%) and/or customer service representatives (22%).

Figure 18: General Occupational Roles



¹⁷ If position titles fell into more than one category, firms assigned titles to the occupational role in which employees devoted more of their time.



Over a quarter of green firms with employees in each category expect to increase employment in each occupational role over the next 12 months.

Figure 19: Occupational Growth Expectations for the Next 12 months

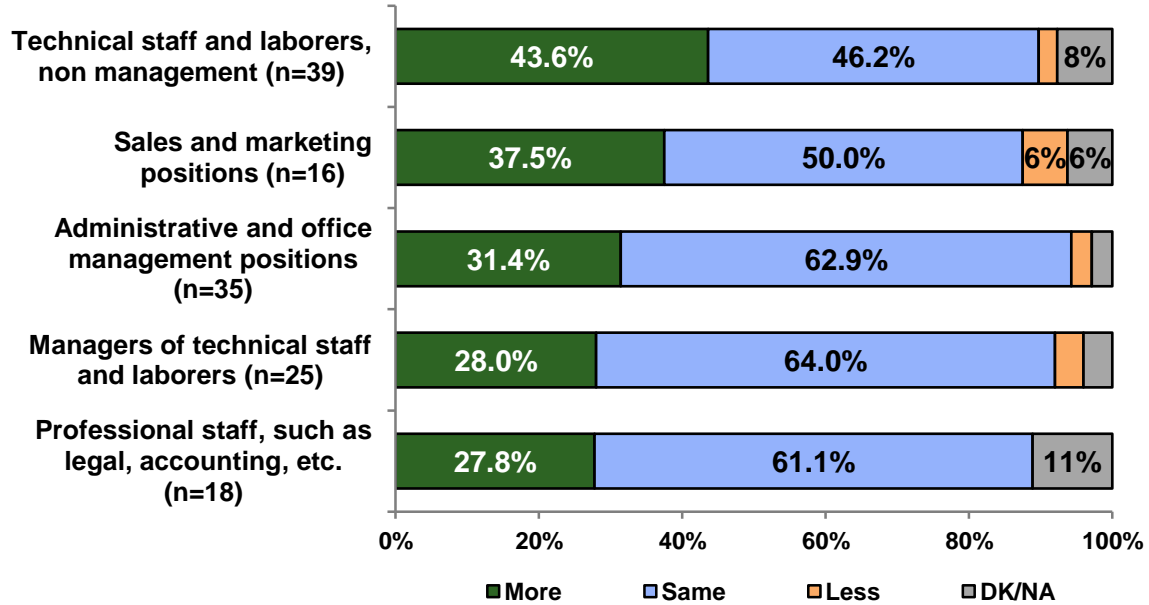
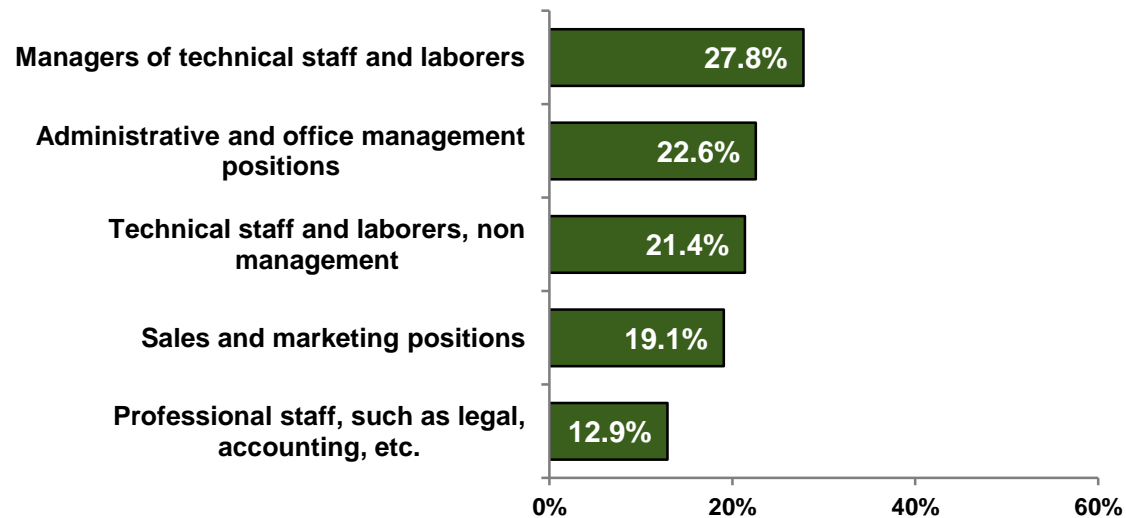


Figure 20 displays the corresponding growth rates among firms with each occupational role present at their firm. The largest expected growth rate was for managers of technical staff and laborers, with a 28 percent increase. This was followed by administrative and office management positions (23%), technical staff and laborers, non-management (21%), sales and marketing positions (19%), and professional staff (13%).

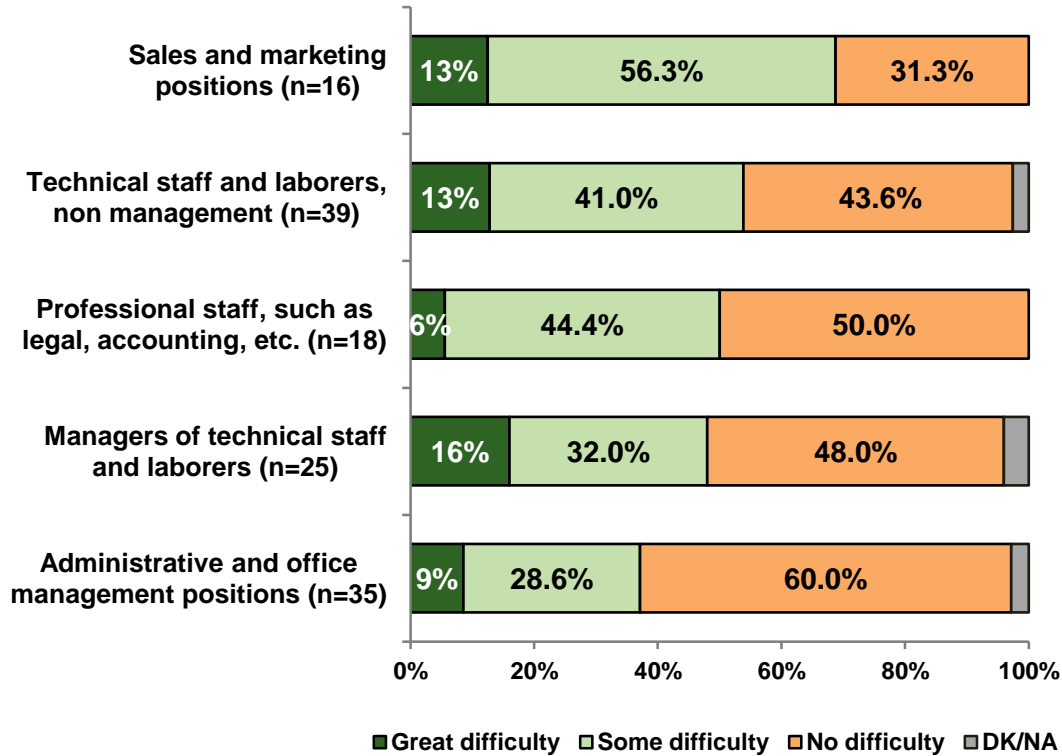
Figure 20: Occupational Growth Rates for the Next 12 Months





Over half of firms reported difficulty finding qualified applicants for sales and marketing positions (69%) and technical staff and laborers (54%). Firms found hiring managers of technical staff and laborers less difficult overall (48%), but more firms (16%) found “Great difficulty” in hiring for this occupational category than any other.

Figure 21: Occupational Hiring Difficulties

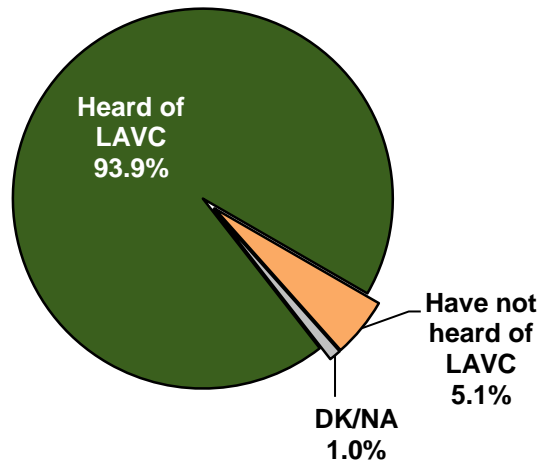




LAVC AWARENESS AND INTEREST

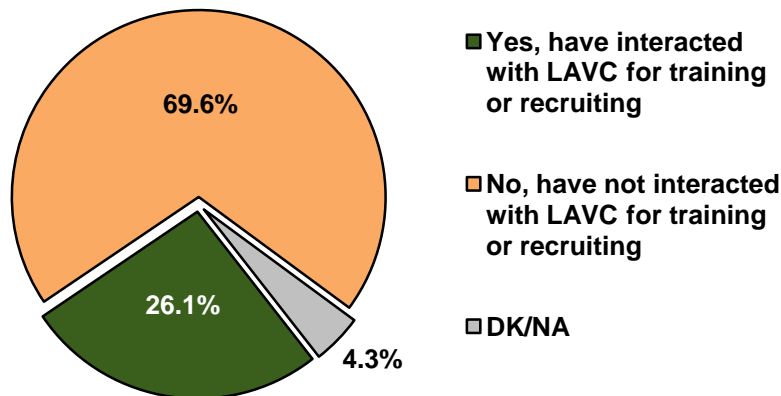
Figure 22 illustrates that 94 percent of green firms had heard of Los Angeles Valley College (LAVC) before participating in the survey. Only a very small proportion (5%) had not heard of LAVC and one percent did not know or declined to state.

Figure 22: Awareness of LAVC



Among those aware of LAVC, just over one in four (26%) have interacted with LAVC for training, recruiting, or related needs.

Figure 23: Interaction with LAVC for Training or Recruiting

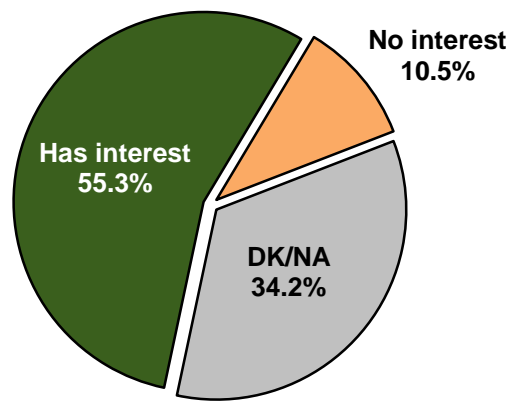




Sixty-five percent of all green firms surveyed expressed interest in receiving information from LAVC, including the findings of this research and how to stay engaged in the college's planning to prepare qualified, productive workers for the local economy.

The majority of green firms who participated in the online version of the survey also expressed interest in having a no-cost intern who is enrolled in a training program at LAVC. Among those interested, one-third indicated that they would be willing to hire that person at the end of the internship, five percent would not, and 62 percent were not sure, with their decision likely dependent on the quality of work provided by the intern as well as his or her organizational fit.

Figure 24: Interest in Interns¹⁸



¹⁸ Question only asked to web survey respondents (n=38).



APPENDIX A: METHODOLOGY

Data compiled for this report were drawn from both primary and secondary data sources. The table below provides a brief overview of the methodology utilized for the project.

Table 1: Overview of Project Methodology

Method	Secondary Research of Industries in the San Fernando Valley Telephone and Web Survey of Green Firms in the San Fernando Valley Executive Interviews with Green Building, Design, Solar, & Renewable Energy Firms
Number of Participants	98 Green Firms Completed a Survey (60 telephone and 38 web) 16 Participants Completed an Executive Interview
Field Dates for Primary Research	Telephone Survey: July 25 – 29, 2011 Web Survey: August 21 – September 24, 2011 Executive Interviews: August 19 – September 29, 2011

SECONDARY RESEARCH

The research team utilized data from Economic Modeling Specialists, Inc. (EMSI) to examine the industry composition of employment within the San Fernando Valley as well as in each of the six green industry cluster categories identified by the Centers of Excellence;¹⁹ water and wastewater, green building and energy efficiency; transportation and alternative fuel; compliance and sustainability; biofuels and farming; and renewable energy.

PRIMARY RESEARCH

Two phases of primary research were conducted as part of this project – a quantitative telephone and web survey of 98 green employers and qualitative executive interviews with 16 firms.

Survey and Discussion Guide Design

Through an iterative process, the project team worked closely with LAVC to develop a survey instrument and executive interview discussion guide that met all the research objectives of the study. In developing the survey instrument, BW Research utilized techniques to overcome known biases in survey research and minimize potential sources of measurement error within the survey.

¹⁹ The Centers of Excellence are organizations which provide information to community colleges on workforce and economic development programs.



Telephone Survey

Sampling Method

The survey sample was comprised of both "known" green firms – those that have been previously identified as conducting green work – as well as "unknown" firms from targeted NAICS codes in the professional, scientific, and technical services cluster.

Screening questions were utilized to ensure that firms were located in a qualifying zip code and conducted business related to renewable energy, energy efficiency, green building and design, environmental protection, or other green-related activities.

Known Database

A database of 185 known green firms in the San Fernando Valley was created to provide a framework for the targeted primary research. Multiple sources were compiled in developing the database; past national, state, and local BW Research projects, the [Cleantech database](#), the Environmental Defense Fund's [California Green Economy Map](#), the Go Solar California [Database of Solar Installers, Contractors, and Retailers](#), and other publicly available information.

Unknown Random Sample

Records were purchased for professional, scientific, and technical services firms within targeted NAICS (see below) most likely to be conducting green work and located in the San Fernando Valley. The list of firms was stratified based on size and firms were randomly sampled from within each size group.

NAICS Description

Architectural Services

Building Inspection Services

Drafting Services

Engineering Services

Environmental Consulting Services

Industrial Design Services

Landscape Architectural Services

Non-Residential Property Managers

Residential Property Managers

All Other Professional & Technical Services

All Other Support Services

Other Technical Consulting Services



Data Collection

Prior to beginning telephone data collection, BW Research conducted interviewer training and also pre-tested the survey instrument to ensure that all the words and questions were easily understood by respondents. Telephone interviews were generally conducted from 9:00 am to 4:30 pm Monday through Friday. The telephone data collection period was July 25 through July 29, 2011.

At the request of LAVC to conduct additional interviews, BW Research created a web version of the survey that included select questions from the telephone version. Los Angeles Valley College partnering with the Valley Green Team and the International Facilities Management Association to distribute the web survey link to their member companies. The online data collection period was August 21 through September 24, 2011.

Executive Interviews

Sixteen executive interviews with leading green building and design firms and solar and renewable energy firms in the San Fernando Valley area were conducted by telephone from August 19 through September 29, 2011. The executive interviews were designed to gain a more detailed understanding of key issues facing green employers and their needs for trained, qualified workers.

Participants all had highly responsible roles within their firms, and most were owners or CEOs. Nine of the interviews were conducted with green building and design firms and seven were conducted with solar and renewable energy firms.