

Key Findings, 2009

Energy Efficiency Occupations

in the Central Valley Region



Centers of Excellence
Economic and Workforce Development
California Community Colleges

The Centers of Excellence, in partnership with business and industry, deliver regional workforce research customized for community college program decision making and resource development.



C·O·E

CENTERS OF EXCELLENCE

Inform Connect Advance

www.coecc.net

Inside:

Research Objectives
Energy Efficiency Employers
Occupational Employment
Workforce Challenges
Education and Training



Research Objectives

Increasing energy and commodity costs, legislative requirements and consumer demand for a more sustainable environment have all led to a substantial push for a greener economy. To better understand the implications for community colleges, the Centers of Excellence (COE) conducted a study of the energy efficiency sector and related occupations. The research objectives of this study were to:

- Estimate the current number and size of firms, as well as geographic concentration.
- Project future job growth over three years in energy efficiency occupations relevant to community colleges.
- Identify employer needs and challenges for hiring and training employees.
- Define skill sets and education requirements needed for key occupations.
- Identify industry interest in accessing community college education and training programs.

Energy Efficiency Employers

Type of Firm

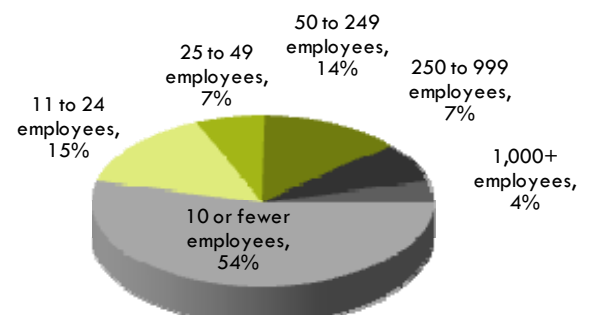
Firms that hire energy efficiency workers are found in different industries. This study focused on employers in the following three industry groups.



- In the Central Valley Region, more than 1,330 firms were identified as employing energy efficiency workers in one or more of the eight occupations studied.¹
- Seventy-one percent of employers identify themselves as involved directly with energy efficiency work; the remaining indicated they are indirectly involved with energy efficiency work.
- The primary services offered by energy efficiency employers include HVAC installation and repair, consulting, construction, electrical, engineering, lighting, and project management.

Size of Firm

The data compiled on the size of firms reveals that most of the firms are relatively small – 67% employ fewer than 25 employees – with a significant portion (54%) employing 10 or fewer employees. This data is reflected in the pie chart on the right.



Occupational Employment

Eight energy efficiency occupations were identified as high-growth and align with community college education programs. The combined employment in the Central Valley Region for the eight occupations totals at least 3,240 jobs (known employment from survey respondents) and could be as high as 10,790 jobs. The latter figure is an extrapolated estimate of employment, based on survey responses and an estimate of the number of energy efficiency-related firms in the region. All eight occupations show growth over the next 12 months and three years.

- HVAC mechanics, technicians, or installers are the largest growth occupation in the region with an estimated 820 new jobs or a 46% increase over the next three years.
- Energy auditors or home energy raters are the second-largest growth occupation with 420 projected new jobs over three years.

The table on the opposite page details these occupations and their growth potential.

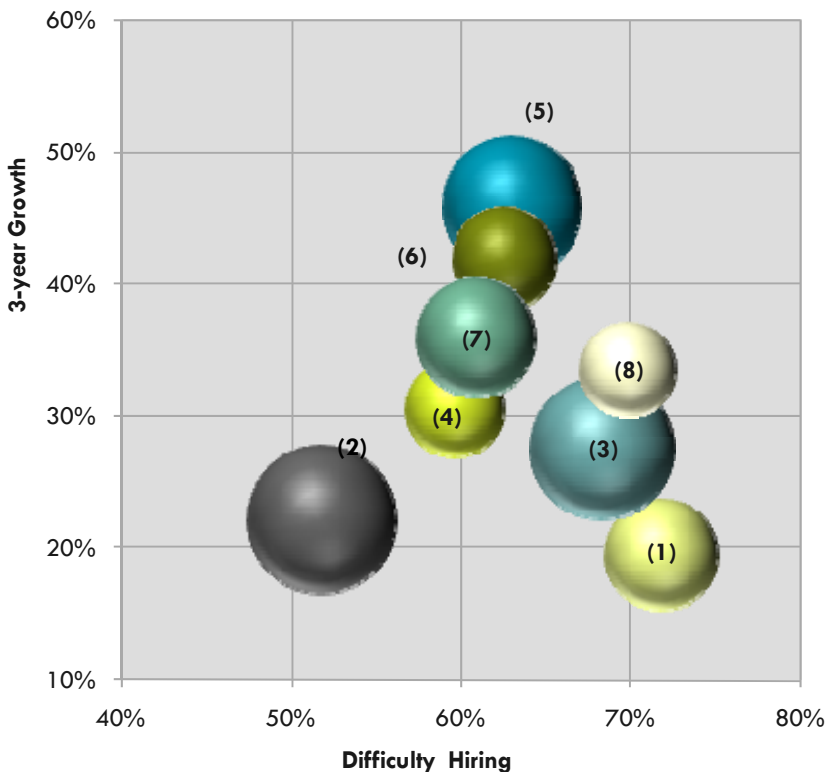
¹Margin of error for the 214 survey respondents (out of the universe of 1,330) is ± 6.14 percent.

Occupational Employment

Energy Efficiency Occupations	Estimated 2009 Employment	3-year Projected Growth	Growth Rate
Resource conservation or energy efficiency managers assess current energy and resource consumption and develop strategies to reduce usage.	2,000	440	22%
Project managers for construction or design work are responsible for communicating with project partners and ensuring the project is completed in a timely manner and on budget.	1,890	520	28%
HVAC mechanics, technicians or installers install, repair and maintain heating, ventilation, air-conditioning and refrigeration systems.	1,780	820	46%
Building performance or retrofitting specialists are contractors who improve the energy efficiency of homes or buildings by installing insulation, windows, lighting and other energy efficient products.	1,290	460	36%
Building operators or building engineers troubleshoot, install, replace, and repair building energy systems and controls to optimize energy efficiency.	1,140	220	19%
Energy auditors or home energy raters are responsible for collecting, analyzing and validating energy usage in the field and preparing reports on a building or home's total energy profile.	1,000	420	42%
Compliance analyst or energy regulation specialists evaluate if projects are meeting regulatory requirements and/or incentives and provide recommendations as needed to meet compliance.	870	260	30%
Building controls systems technician combine traditional skill sets of building technicians with advanced skills in controls programming, networking and systems integration.	820	280	33%
Total, All Occupations (totals may not add due to rounding)	10,790	3,420	

Workforce Challenges

Employers indicate difficulty in hiring for all eight occupations. The chart below shows the 12-month projected growth rate of the eight occupations in relationship to the level of difficulty hiring. The area of each bubble represents the size of current employment for each occupation.



- Over half of employers surveyed reported difficulty finding qualified applicants for all eight occupations.
- More than 70% have difficulty finding building operators or engineers and building controls systems technicians.
- Two out of three employers indicated they experience difficulty finding qualified project managers for construction/design work.

- (1) Building operators or building engineers
- (2) Resource conservation or energy efficiency managers
- (3) Project managers for construction or design work
- (4) Compliance analysts or energy regulation specialists
- (5) HVAC mechanics, technicians or installers
- (6) Energy auditors or home energy raters
- (7) Building performance or retrofitting specialists
- (8) Building controls systems technicians

Education, Training, and Skill Requirements

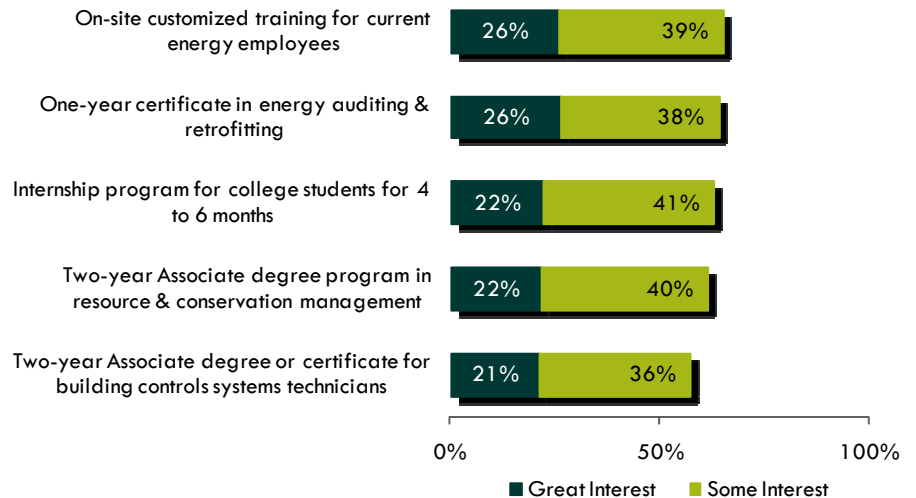
Employers expressed great interest in education and training programs that can be developed by community colleges:

- Over one-third of employers prefer an Associate degree or certificate program for compliance analysts or energy regulation specialists.
- Close to 50% of the employers surveyed prefer HVAC technicians to have experience in the industry.
- More than half of employers expressed interest for each type of energy efficiency training program offered by community colleges.

Employers' Top 3 Most Important Knowledge and Skill Areas

1. Ability to communicate with customers, in writing and in person.
2. Understanding of local and state energy efficiency requirements and incentives for new and existing buildings.
3. General understanding of the mechanics and engineering of energy systems, including HVAC, lighting, and renewable energy systems.

Employer Interest in Community College Programs



For More Information

For more information on this study, contact:

Michelle Marquez, Center Director
 Central Valley Region
 (209) 575-6908
marquezm@mjc.edu

Coming soon! The Central Valley Region Energy Efficiency Occupations environmental scan will be available to download at www.coecc.net/energy in September, 2009.

Research Partners



Industry Partners

