

# Key Findings, 2009

## Energy Efficiency Occupations

### in the South Central 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.



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#### 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

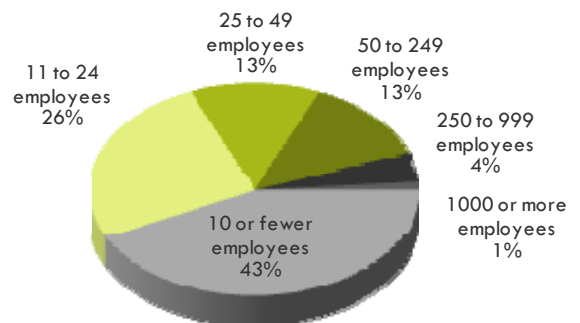
Firms that hire energy efficiency workers are found in different industries. This study focused on employers in the following three industry groups.



- In the South Central Region, serving the eight community colleges in San Luis Obispo, Santa Barbara, Ventura and north Los Angeles counties, approximately 1,100 firms were identified as employing energy efficiency workers in one or more of the eight occupations studied.<sup>1</sup>
- Fifty-five 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 consulting, construction, project management, lighting, architecture, electrical, engineering and HVAC installation and repair.

### Size of Firm

The data compiled on the size of firms reveals that most of the firms are relatively small – 69% employ fewer than 25 employees – with a significant portion (43%) 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 South Central Region for the eight occupations totals at least 1,225 jobs (known employment from survey respondents) and could be as high as 5,770 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.

- In the next three years, a total of 2,300 new jobs may be created in the region, representing the combined growth of the eight occupations.
- The highest growth, both in terms of jobs created and fastest growth rate, is for project managers of construction or design work. This occupation is projected to add 1,060 new jobs (51% growth) in the next three years.

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

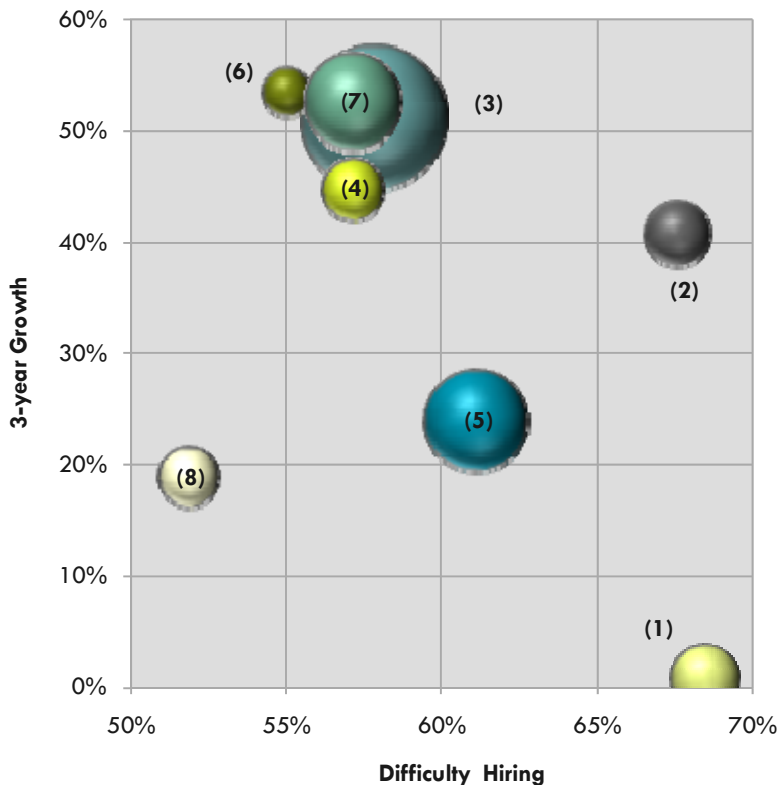
<sup>1</sup>Margin of error for the 163 survey respondents (out of the universe of 1,108) is  $\pm 7.09$  percent.

## Occupational Employment

Energy Efficiency Occupations	Estimated 2009 Employment	3-year Projected Growth	Growth Rate
<b>Resource conservation or energy efficiency managers</b> assess current energy and resource consumption and develop strategies to reduce usage.	410	170	41%
<b>Project managers for construction or design work</b> are responsible for communicating with project partners and ensuring the project is completed in a timely manner and on budget.	2,060	1,060	51%
<b>HVAC mechanics, technicians or installers</b> install, repair and maintain heating, ventilation, air-conditioning and refrigeration systems.	1,020	240	24%
<b>Building performance or retrofitting specialists</b> are contractors who improve the energy efficiency of homes or buildings by installing insulation, windows, lighting and other energy efficient products.	890	470	53%
<b>Building operators or building engineers</b> troubleshoot, install, replace, and repair building energy systems and controls to optimize energy efficiency.	430	<10	1%
<b>Energy auditors or home energy raters</b> are responsible for collecting, analyzing and validating energy usage in the field and preparing reports on a commercial building or home's total energy profile.	240	130	54%
<b>Compliance analyst or energy regulation specialists</b> evaluate if projects are meeting regulatory requirements and/or incentives and provide recommendations as needed to meet compliance.	370	170	45%
<b>Building controls systems technician</b> combine traditional skill sets of building technicians with advanced skills in controls programming, networking and systems integration.	340	60	19%
<b>Total, All Occupations</b> (totals may not add due to rounding)	<b>5,770</b>	<b>2,300</b>	

## 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.



- A majority of employers surveyed reported difficulty finding qualified applicants for all eight occupations.
- Almost 70% have difficulty finding resource conservation or energy efficiency managers.
- Three out of five employers indicated they experience difficulty finding qualified HVAC mechanics, technicians, or installers.

- (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

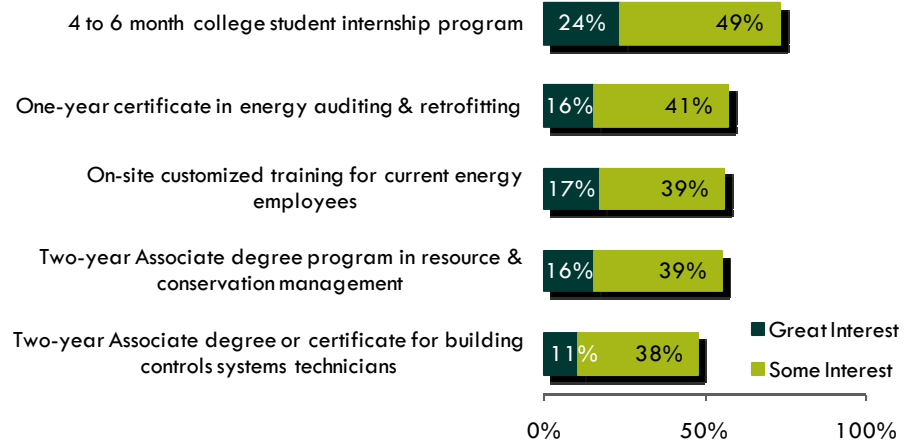
Employers expressed great interest in education and training programs that can be developed by community colleges:

- The majority of surveyed employers (55%) prefer energy auditors or home energy raters to have an associate degree or program certificate specific to the position.
- Forty-one percent of employers prefer building controls systems technicians to have an associate degree or program certificate.
- Employers expressed the most interest (73%) in a 4 to 6 month student internship program administered by their local 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 codes and standards 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:

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Coming soon! The South Central Region Energy Efficiency Occupations environmental scan will be available to download at [www.coecc.net/energy](http://www.coecc.net/energy) in September, 2009.

## Research Partners



## Industry Partners

