

Key Findings, 2009



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Energy Efficiency Occupations



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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.



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

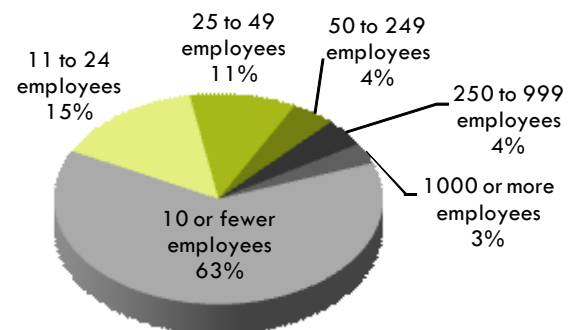
Firms that hire energy efficiency workers are found in different industries. This study focused on employers in the following three industry groups.



- In the 4-county Northern Coastal Region, approximately 374 firms were identified as employing energy efficiency workers in one or more of the eight occupations studied.¹
- Half of the 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 these employers include consulting, construction, lighting, project management, engineering, HVAC installation and repair, and electrical.

Size of Firm

The data compiled on the size of firms reveals that most of the firms are relatively small – 78% employ less than 25 employees – with a majority (63%) employing 10 or fewer employees.



Occupational Employment

Eight energy efficiency occupations were identified as high-growth and align with community college education programs. The combined employment in the Northern Coastal Region for the eight occupations totals at least 376 jobs (known employment from survey respondents) and could be as high as 1,550 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. Seven occupations show growth over the next 12 months and all eight show growth over the next three years.

- In the next 12 months, the largest growth is projected for project managers for construction or design work with 40 new jobs (6.7% growth) and building performance or retrofitting specialists with 30 new jobs (13.1% growth).
- Over the next three years, the fastest growing occupations are resource conservation or energy efficiency managers (45.2% growth) and energy auditors or home energy raters (39.8% growth).

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

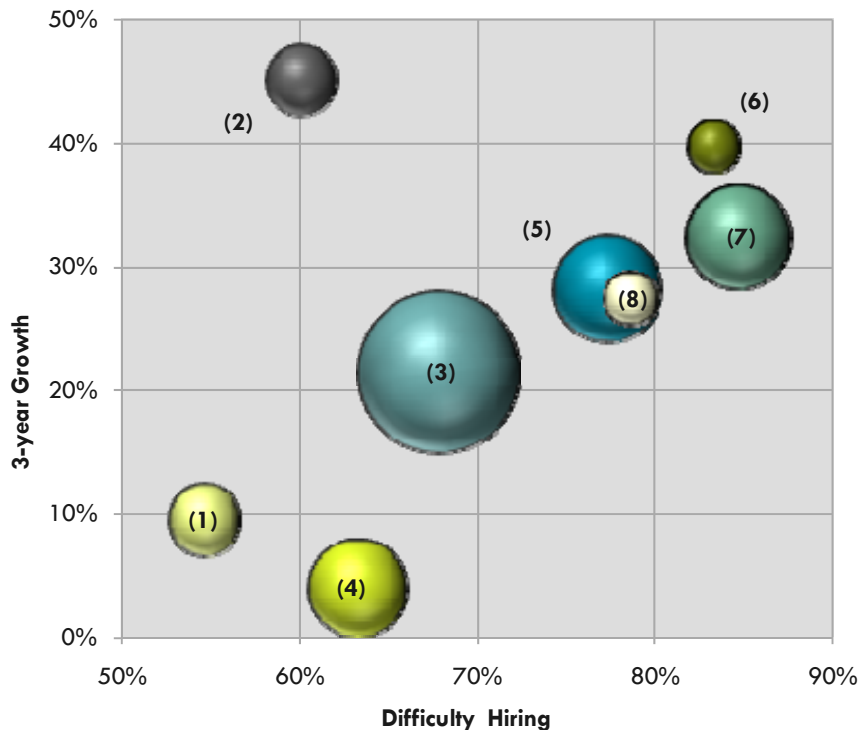
¹Of the estimated 374 energy efficiency firms in the region, 95 firms participated in the survey (a response rate of 25%).

Occupational Employment

Energy Efficiency Occupations	Estimated 2009 Employment	3-Year Projected Growth	Growth Rate
Building controls systems technicians combine traditional skill sets of building technicians with advanced skills in controls programming, networking and systems integration. ²	60	20	27.4%
Building operators or building engineers troubleshoot, install, replace, and repair building energy systems and controls to optimize energy efficiency. ²	110	10	9.4%
Building performance or retrofitting specialists are improve the efficiency of homes or buildings by installing insulation, windows, lighting and other energy efficient products.	230	80	32.4%
Compliance analyst or energy regulation specialists evaluate if projects are meeting regulatory requirements and/or incentives and provide recommendations as needed to meet compliance.	200	10	4.0%
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. ²	60	20	39.8%
HVAC mechanics, technicians or installers install, repair and maintain heating, ventilation, air-conditioning and refrigeration systems.	240	70	28.2%
Project managers for construction or design work are responsible for communicating with project partners and ensuring the work is completed in a timely manner and on budget.	540	120	21.5%
Resource conservation or energy efficiency managers assess current energy and resource consumption and develop strategies to reduce usage.	100	40	45.2%
Total, All Occupations (totals may not add due to rounding)	1,550	360	

Workforce Challenges

Employers indicate difficulty in hiring for all eight occupations. The chart below shows the 3-year 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.



- More than 55% of employers surveyed reported great or some difficulty finding qualified applicants for all eight occupations.
- More than 80% of employers surveyed reported difficulty finding qualified building performance or retrofitting specialists and energy auditors or home energy raters.

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

²The number of surveyed firms that employ this occupation in the Northern Coastal Region fell below the statistical criteria for this study (20 employer responses per occupation).

Education, Training, and Skill Requirements

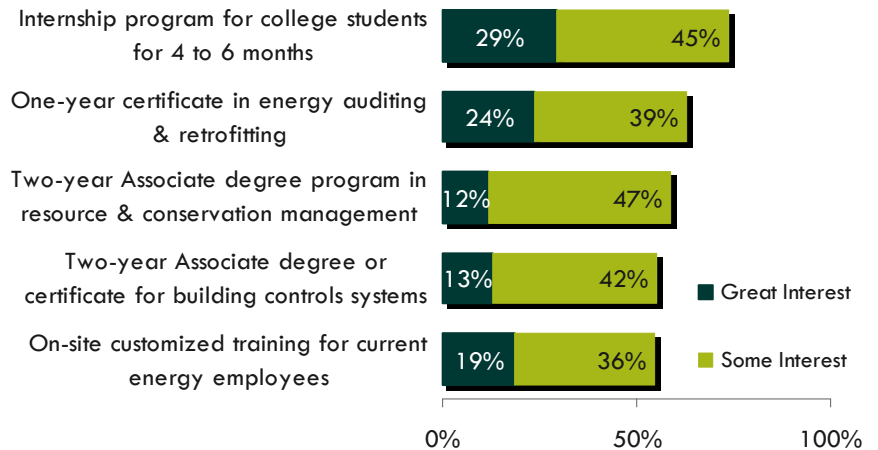
Employers expressed great interest in education and training programs that can be developed by community colleges:

- Three out of four employers expressed great or some interest in an internship program for community college students.
- Nearly two-thirds of employers surveyed expressed interest in a one-year certificate program in energy auditing and retrofitting.
- More than half of employers expressed great or some interest in a two-year Associate degree program for resource & conservation management and building controls systems.

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

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

Research Partners



Industry Partners

