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Industry Snapshots

Energy Efficiency Tools for the Program Developer

This data was prepared for California Community Colleges and those professionals that design college-level coursework and programs.



Industry Background

Several key factors have influenced the growth in this sector including the new federal legislation that President Obama signed into law (American Recovery and Reinvestment Act of 2009), which tops \$30 billion in investments in energy efficiency. This is a major commitment from the federal government — both in terms of spending on projects and tax incentives to homeowners — that will create hundreds of thousands of jobs in the U.S. and thousands of jobs in the Bay Area.

California has moved aggressively to establish a legislative and policy framework that puts energy efficiency center stage in the effort to meet the state's increasing energy needs and fight global warming. Although occupations like Resource Conservation/Energy Efficiency Manager could be found in just about any large business, this study focused on the industries with the greatest concentration of energy efficiency occupational opportunities. The following three industries fit this criterion: Building or Facility Operations and Maintenance; Building Design and Construction; and Public or Private Utilities or Agencies.

For the purposes of this study, the energy efficiency sector was defined as those firms that:

1. Deliver energy efficiency services as their primary focus, or
2. Are public or private utilities or agencies who hire energy efficiency workers, or
3. Are large customers of energy utilities who hire energy efficiency workers.

Industry Trends

12-County Bay Area Study
2008-2011



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Energy Efficiency Occupations	2008 Employment Estimate	3-year Projected Growth	Growth Rate	Entry Level Median Annual Wage	Experienced Level Median Annual Wage
Project Managers: Construction or Design http://online.onetcenter.org/link/summary/47-1011.00	10,630	2,850	27%	\$60,000	\$90,000
Building Performance or Retrofitting Specialists - Contractors who improve the energy efficiency of homes or buildings by installing insulation, windows, lighting and other energy efficient products http://online.onetcenter.org/link/summary/11-9021.00	4,630	2,690	58%	\$50,000	\$80,000
HVAC Mechanics, Technicians or Installers - Install, repair and maintain heating, ventilation, air-conditioning and refrigeration systems http://online.onetcenter.org/link/summary/49-9021.01	5,250	1,630	31%	\$41,600	\$72,800
Energy Auditors or Home Energy Raters - Collect, analyze, and validate energy usage in the field and prepare reports on a building or home's total energy profile http://online.onetcenter.org/link/summary/19-4091.00	2,980	1,470	49%	\$42,000	\$70,000
Resource Conservation or Energy Efficiency Managers - Assess current energy and resource consumption and develop strategies to reduce usage. http://online.onetcenter.org/link/summary/19-4091.00	3,080	1,400	45%	\$52,000	\$83,200
Building Controls Systems Technician - Combines some of the traditional skill sets of building technicians with advanced skills in controls programming, networking, and systems integration http://online.onetcenter.org/link/summary/51-4012.00	2,790	1,160	42%	\$50,000	\$80,000
Compliance Analyst or Energy Regulation Specialists - Evaluate if projects are meeting regulatory requirements and/or incentives and provide recommendations to meet compliance http://online.onetcenter.org/link/summary/13-1041.01	2,000	1,190	59%	\$52,000	\$76,500
Building Operators or Building Engineers - Troubleshoot, install, replace, and repair building energy systems and controls to optimize energy efficiency http://online.onetcenter.org/link/summary/47-4011.00	3,280	710	22%	\$50,000	\$79,700
Total, All Occupations (totals may not add due to rounding)	34,640	13,090			

Educational Track

Here is a listing of community colleges in the San Francisco Bay area offering Energy Efficiency Industry programs. These eight occupations require a completion of a certification and/or a degree.

COLLEGE	Energy Efficiency Occupations							
	Energy Auditor or Home Energy Rater	Building Performance or Retro-fitting Specialist	Compliance Analyst or Energy Regulation Specialist	Project Manager for Construction or Design Work	HVAC Mechanic, Technician or Installer	Resource Conservation or Energy Efficiency Manager	Building Controls Systems Technician	Building Operator or Building Engineer
	Level of Preparation for and Programs Related to Each Occupation							
Cabrillo	I – X	I – X		I – X		I – X		
Chabot		I – X		I – X	I – X		P – X	I – X
De Anza	I – C/D	I – C/D	I – C/D		I – C/D	I – C/D	I – C/D	
Diablo Valley	I – X	I – C	I – X	P – C/D	P – X	I – X	I – X	P – C/D
Foothill	I – X	P – C	I – X	I – X	P – C	I – X	P – C	I – C
Laney	P – C	P – C		P – C/D	P – C/D	I – X	P – C/D	P – C/D
Los Medanos	I – X	I – D	I – X	I – X	P – C	I – X	I – C	I – D
Merritt	I – C/D	I – C/D		I – C/D		I – C/D		
Napa Valley						I – X		
San Francisco		I – C		P – D	I – C		I – C	I – C
San Jose					P – C		P – C	P – C
San Mateo				I – X			I – C	I – X
Santa Rosa				P – C/D				

Level of Preparation

I = Introduces to Occupation ; P = Fully Prepares for Occupation

Types of Education/Training Program

X = Course; C = Certificate Program(s); D = Degree Program(s)

Conclusion and Recommendations

Employers in the Bay Area energy efficiency sector are projected to increase employment substantially over the next three years, creating thousands of jobs for each of the eight occupations studied. The survey results indicate that the majority of employers are having difficulty hiring qualified candidates in all eight energy efficiency occupations.

Although thirteen of the 26 community colleges in the Bay Area were identified as offering courses, certificates, or programs related to energy efficiency occupations, many are at (or over) capacity, with current offerings. And, there is clearly room for course and program development that will not just introduce students to energy efficiency concepts, but will fully prepare them for employment in these occupations.

Due to the existing college program infrastructure in departments such as Construction, Environmental Controls Technology, and Environmental Technology, community colleges are well positioned to build a pipeline of skilled workers, create and expand industry partnerships and provide additional professional development opportunities for college faculty who will teach energy efficiency courses.

In the past two decades, numerous reports have documented the need for more diversity among the healthcare workforce, including medical imaging technologies. Community colleges can bring a diverse student population to these occupations.



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