

Digest of Green Reports and Studies

Title	Clean Technology Workforce Challenges and Opportunities
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Organization	Los Angeles/Orange County Regional Consortium & Los Angeles Trade-Technical College
Author Contact	(760) 730-9325
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URL	http://www.lattc.edu/dept/lattc/acaaffairs/files/Clean_Technology_Report.pdf
Summary	<p>In November 2007, on behalf of the Los Angeles/Orange County Regional Consortium, BW Research conducted a workforce demand study of employers in the clean technology cluster by conducting phone interviews and surveys. The research objectives were:</p> <ul style="list-style-type: none"> • Describe the clean technology cluster and its current and potential impact upon the region's economy; • Assess current and emerging clean technology workforce needs with the Los Angeles and Orange County region, as well as some of the trends with the State of California; • Develop profiles of employers, hiring and occupational skills with clean technology; and • Identify potential solutions to workforce challenges that can be addressed by the community colleges.
Key Findings	<p>The research indicates a substantial increase in clean technology employment in the upcoming year, along with changes to the composition of the workforce. The study conducted shows:</p> <ul style="list-style-type: none"> • Three out of four clean technology employers will increase employment by 25 percent in the next 12 months; • Over half of clean technology employers indicate some change (40 percent) if not substantial change (26 percent) in the compositions of their workforce in the next 12 to 24 months; and • Approximately 60 percent of employers indicate that they are having some difficulty recruiting qualified applicants with appropriate training and education. <p>Increasing venture capital investments is also a key indicator of growing employment for clean technology. In 2006, 36 percent of US venture capital for energy technology was invested in California. By the first half of 2007, 49 percent of venture capital investments in the US were in California. The addition of legislation targeting global warming and increased energy efficiency, and the costs of traditional fossil fuels, are all important drivers of the growth of clean technology.</p> <p>When considering the many occupations associated with clean technology, survey results show that almost half of employers value working knowledge of Good Manufacturing Practices (GMP). Additional skill sets deemed beneficial were electrical knowledge and soldering skills (42.6 percent), working knowledge of renewable energy (38.9 percent), and knowledge or regulatory issues (33.3 percent). The occupations that employers expect to hire that do not require an advanced college degree are: assembler; customer service representative; manufacturing technician; operations and maintenance technician or engineer; research and development assistant or technician; and quality control technician.</p>
Recommendations	<p>Clean technology shows dynamic economic growth, supports environmental sustainability and provides equitable opportunities for individuals without a bachelor's degree, or higher, to participate in a high-technology cluster that generates economic dividends. With the potential benefits of a growing industry, community colleges can play a critical role by training and educating an emerging workforce to support employment in clean technology. In the survey, over half of the employers indicated that they were interested in degree or certificate programs in clean technology provided by community colleges. The three areas of employer needs are:</p> <ul style="list-style-type: none"> • Energy – to include energy efficiency and renewable energy • Environmental Technology – to focus on environmental analysis and compliance issues • Clean Manufacturing – to include environmental compliance and sustainability, energy efficiency, and advanced manufacturing, with emphasis on GMP principles, electrical and soldering skills, and basic tool skills <p>Any program developed should be done in collaboration with employers currently in the clean technology industry.</p>

Definition of "Green"	Green Economy – products and services that are being developed and produced to lower greenhouse gas (GHG) emissions, improve air and water quality, provide more sustainable development alternatives, or provide cleaner and more efficient energy options.
Methodology	The data for the study was obtained in two phases of research conducted from November 29, 2007, to December 21, 2007. The first phase, a qualitative aspect, consisted of interviews with employers, industry leaders, and educators in clean technology. The second phase, a quantitative analysis, included telephone surveys of 82 clean technology employers throughout California, though primarily concentrated in the Los Angeles and Orange County region.
Data Sources Cited	California Green Innovation Index, 2008 Inaugural Issue; Energy Information Administration; www.inflationdata.com ; US Department of Commerce; California Progress Report, August 29, 2007; and Bureau of Labor Statistics, US Department of Labor.
Report Geography	California, with emphasis in Los Angeles and Orange Counties
Green Occupations Cited	<ul style="list-style-type: none"> • Manufacturing Technician ~ Industrial Engineering Technician (SOC 17-3026) • Research and Development Assistant or Technician ~ Biological Technician (SOC 19-4021), Chemical Technician (SOC 19-4031) and Environmental Science and Protection Technician (SOC 19-4091) • Quality Control Technician ~ Inspectors, Testers and Grader (SOC 51-9061) • Assembler ~ Electrical and Engineer Equipment Assemblers (SOC 51-2022), Engine and Other Machine Assemblers (SOC 51-2031) and Electromechanical Equipment Assemblers (SOC 51-2023) • Renewable Energy Technician ~ Environmental Science and Protection Technician (SOC 19-4091) and Electricians (SOC 47-2111) • Customer Service Representative (SOC 43-4051) • Operations and Maintenance Technician or Engineer ~ Maintenance and Repair Workers, General (SOC 49-9042) and Machinery Maintenance Workers (SOC 49-9043)
Green Industries Cited	<ul style="list-style-type: none"> • Energy (Generation and Efficiency) • Transportation • Recycling and Waste • Water and Wastewater • Agriculture
Keywords	Clean technology; community college; venture capital investments; clean technology – education and training; clean technology – employment opportunities;
Legislation Cited	<ul style="list-style-type: none"> • CA AB 32 – The Global Warming Solutions Act of 2006 • CA SB 1 – The Million Solar Roofs Bill • CA AB 118 – Low Carbon Transportation and Energy Efficiency
Bibliography (Y/N)	Y
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