



## Industry Sector Opportunities: Women Working in Green Construction & Energy Efficiency Fact Sheet

The emerging green era offers the opportunity to build sustainable communities that are energy efficient, safe, and healthy. To reach this goal, we must be forward-thinking and strategic in engaging the diverse segments of society—consumers, business leaders, government, employers, and workers in a variety of industries. As investment, energy, and awareness surrounding the green movement grow, career paths will emerge, creating opportunities for women to become economically secure. Many of these jobs will be non-traditional occupations for women. Workforce development professionals have a unique opportunity to coalesce the interests of employers and potential employees while helping to ensure that women are poised to take full advantage of the green economy; especially in green construction and energy efficiency retrofitting, renovation, and energy sourcing.

### A Closer Look at the Sectors

**Definitions.** O\*NET, the Occupational Information Network, defines these two sectors as follows:

- **Energy Efficiency:** This sector covers activities related to increasing energy efficiency (broadly defined), making energy demand response more effective, constructing “smart grids,” and so forth.
- **Green Construction:** This sector covers activities related to constructing new green buildings, retrofitting residential and commercial buildings, and installing other green construction technology.<sup>1</sup>

**Market Drivers.** Knowing what is driving the local job market is important for women looking to take their place as entrepreneurs and employees in these emerging sectors. The American Recovery and Reinvestment Act of 2009 has sought to advance green renovation and construction by providing substantial funding for training, building retrofits, and other related investments. The renewable portfolio standards in 31 states, especially for federal and institutional buildings such as schools and libraries, are also contributing to improved training and employment outlooks in the green construction and energy efficiency sectors. The potential for expanded opportunities in this corner of the market is expected to grow through 2013 and for several years beyond, according to Pike Research, creating a \$400 billion market, with the greatest potential lying in privately owned commercial properties that total 70 billion square feet of space.<sup>2</sup> Pike also forecasts growth in the operations and maintenance “niches,” as green renovations are put into place over the next few years.<sup>3</sup> Other industry forecasters suggest that even modest actions taken toward producing energy efficiencies in residential and commercial buildings would drive investments of \$50 billion each year through 2020, creating a \$500 billion market over a ten-year span.<sup>4</sup>

Government incentives, such as tax credits, play a role in encouraging home owners and commercial property managers to take action sooner rather than later to renovate and retrofit existing buildings. They also influence consideration of new green options when undertaking the construction of either a home or commercial structure. The demand for greener options is growing naturally among owners who are actively seeking to drive down their energy costs. Green renovations currently make up 7 percent of the overall renovations market, but they are forecasted to grow to 13 percent by 2015, according to SBI Energy,<sup>5</sup> or by as much as 21% in the same period, according to McGraw-Hill Construction.<sup>6</sup>

**Labor Needs.** From research and design to electrical work and energy auditing, the possibilities for women who want to pursue green construction and energy efficiency occupations are wide and varied. For example, sources suggest that lighting retrofits may produce one of the largest opportunities among the retrofitting possibilities for both residential and commercial buildings. Lighting retrofits utilize new materials, products, and technologies, such as daylight harvesting (in which photosensors adjust the amount of artificial light being used according to the amount of natural light available). There are currently 2.2 million buildings eligible for such lighting system upgrades.<sup>7</sup>

Women can consult state and regional labor market information to determine what occupations are in demand locally. Such data is typically available from labor departments, workforce investment boards, economic development organizations, and educational institutions with relevant programs. Some states, such as Michigan, Missouri, and California, have produced studies examining state-level trends.



## Career Options

**Career Pathways.** Green construction and energy efficiency career options run the gamut of education and skill levels. One by-product of new energy technologies is the need for energy consultants who recommend energy cost-saving measures. Energy consultants currently represent 40 percent of the energy efficiency sector's jobs. Also dominating the landscape are jobs in manufacturing, design, and sales of energy-efficient technologies, as well as the operations and maintenance of such products. These will include jobs controlling building functions, analyzing energy costs, conserving resources, and enhancing sustainability. Some will be old jobs with new skills, like heating and air conditioning mechanics and installers and mechanical and electrical engineers. New or substantially unique occupations may emerge around the weatherization of residential and commercial buildings.<sup>8</sup> As demand for green retrofitting rises, demand will also rise for green building materials, thus boosting jobs in related manufacturing industries. Additionally, look for increases in occupations such as construction managers, civil engineers, and construction and building inspectors.<sup>9</sup> Thus, the credentials and skills required to work in these occupations range from those obtained through short-term training to those requiring extensive college education.

Employers are a great resource for helping to define the actual jobs that succeed one another in a career pathway and which ones are available in the area or within their firms. The realities in these sectors suggest that job progression is not truly linear and must allow for lifelong learning and movement within and among related sectors for advancement. In green construction, for instance, there are two pathways—one that moves through union apprenticeship systems and one that moves through community college or alternative training institutions. The latter may require an individual to undergo basic skills training in the field before moving to specific skills training, at which point an individual may change jobs. Subsequent movement along the green construction pathway will require extensive on-the-job training or technical diplomas, associate degrees, or advanced skills development.<sup>10</sup>

**Credentials.** Because the range of jobs in these fields spans all backgrounds and many interests, the range of credentials to be earned is also wide and varied. Several credentials are available for energy auditors, for example. Both nonprofit and for-profit enterprises offer training for positions in green construction and retrofitting requiring skilled workers. In addition, higher education institutions are expanding their offerings to meet the demand from area employers and students. Short-term training programs as well as advanced degrees are evolving based on market demand information and studies.

The Green Building Certification Institute, an arm of the U.S. Green Building Council, has developed a credential for those who want to demonstrate green building expertise in non-technical fields of practice. The Leadership in Energy and Environmental Design (LEED) Green Associate credential denotes basic knowledge of green design, construction, and operations, and serves as the first step for individuals who choose to pursue a LEED Accredited Professional (AP) specialization. To take the LEED Green Associate exam, involvement on a LEED-registered project, employment (or previous employment) in sustainability work, or an engagement in (or completion of) an education program that addresses green building principles is required.<sup>11</sup>

## Role of Workforce Professionals, Training and Education Providers, and Advocates

Those in workforce development can assist would-be green construction and energy efficiency workers in the following ways:

- *Stay abreast of changing labor market data as well as new and emerging occupations.* Monitor workforce information sites like the Workforce3One.org Community of Practice on green jobs, O\*NET, and others available at the state and regional levels. Translate and share this information with job seekers.
- *Work closely with employers in the area to understand their hiring needs and plans for growth or expansion.* Labor market projections are just that—projections. There is nothing more valuable than one-on-one discussions with employers in an area to understand their plans for the future, including their corporate projections for hiring. Supplementing labor market projections with interviews and ongoing relationships will provide a much more solid foundation from which career options can be evaluated.



- *Provide a range of green career options for job hunters that are appropriate for current or enhanced skill and education levels.* In the fields of green construction and energy efficiency, there are opportunities for women of all backgrounds, many of whom can start where they are to enter the green economy by putting a green tint on existing skills. Others can pursue additional skills and credentials to support their employment in this sector.
- *Work with training programs to address the obstacles that may arise before and during employment in a non-traditional career.* Because construction is a non-traditional field for women, workforce development professionals will want to partner with other organizations to provide the support services so often necessary for women to be successful in non-traditional occupations. Additionally, work with women entering this field to dispel the myths associated with such work and to address any gender-based stereotyping on the part of employers and fellow employees.
- *Evaluate the income needs of an individual to develop a career progression that will lead to self-sufficiency and economic security.* Not every entry-level green job is a good job in terms of earnings, benefits, or work/life balance. Understanding the income needs of job seekers, as well as the chain of jobs that will get them to a point where they are earning wages that give them the ability to fully meet the needs of their families, will contribute to the long-term success of women entering this sector. Working with partners who can provide support services or enrolling women in available programs to supplement their cash or in-kind income needs will pay great dividends for the individual and her family as they achieve economic security.
- *Link efforts with Small Business Development Centers, women's centers, and other economic development entities to meet the needs of potential entrepreneurs or future business owners.* For job seekers to find work, the jobs must first be created. Because small businesses, especially small businesses owned by women, continue to create the great majority of jobs in this country, exploring entrepreneurship with job seekers has value. Talking and working with the economic development and business development professionals in an area can provide facts for job seekers who may never have considered the possibility of creating a job, instead of just finding a job.

To listen to the teleconference that accompanies this fact sheet, and for further information about “A Woman’s Guide to Green Jobs” and other Women’s Bureau initiatives supporting green jobs, including Women and Green Jobs Roundtables and green training projects, please visit the USDOL Women’s Bureau Web site at: <http://www.dol.gov/wb/>.

## End Notes

<sup>1</sup> Dierdorff, Erich et al. “Greening of the World of Work: Implications for O\*NET-SOC and New & Emerging Occupations,” (February 2009), [http://www.onetcenter.org/dl\\_files/Green.pdf](http://www.onetcenter.org/dl_files/Green.pdf).

<sup>2</sup> “Green Building Retrofits Represent a Potential \$400B Market,” (June 2009). <http://www.environmentalleader.com/2009/06/18/green-building-retrofits-represent-a-potential-400b-market/>.

<sup>3</sup> Pike Research. “Energy Efficiency Retrofits for Commercial and Public Buildings,” (2010).

<http://www.pikeresearch.com/research/energy-efficiency-retrofits-for-commercial-and-public-buildings>.

<sup>4</sup> Pew Center on Global Climate Change. “In Brief: Clean Energy Markets: Jobs and Opportunities,” (April 2010 Update).

<http://www.pewclimate.org/publications/brief/clean-energy-markets-jobs-and-opportunities>

<sup>5</sup> SBI Energy, “Global Green Building Materials and Construction.” 2<sup>nd</sup> Edition. (April 2010).

<http://www.sbienergy.com/about/release.asp?id=1610>.

<sup>6</sup> Gorman, Vivi. “Green Retrofit Market Growing, Report Says.” (November 3, 2009). [http://www.greenandsave.com/green\\_news/green-building/green-retrofit-market-growing-report-says-5333](http://www.greenandsave.com/green_news/green-building/green-retrofit-market-growing-report-says-5333).

<sup>7</sup> Neal, Houston. “5 ‘Green’ Retrofits Electricians Should Be Pitching to Drive Business.” Emerging Energy (May 31, 2010).

<http://www.energyboom.com/emerging/5-%E2%80%9Cgreen%E2%80%9D-retrofits-electricians-should-be-pitching-drive-business>

<sup>8</sup> Ibid.

<sup>9</sup> Ibid.

<sup>10</sup> COWS Institute. “Mapping Green Career Pathways: Job Training Infrastructure and Opportunities in Wisconsin,” 4-7. (January 2010) <http://www.cows.org/pdf/rp-mappingreportWI.pdf>.

<sup>11</sup> My Green Education and Career, “Green Career Path: LEED New Professionals Certifications” (2010).

<http://www.mygreeneducation.com/green-career-path-leed-new-professional-certifications/>.



## Additional Resources

The list below provides additional resources. The list is not exhaustive, and inclusion on this list does not represent an endorsement of any institution or program. As Web links can change, further Internet searches may be necessary to find the latest information.

### Green and Non-Traditional Job Training Programs

#### Government Resources

- Green Jobs, Workforce3One Communities. This site compiles an ongoing list of training programs, evaluations, and other green economy information.  
<http://greenjobs.workforce3one.org/page/resources/1000916955604530872>

#### Non-Government Resources

- The Green Advantage. This organization offers individual green certification, including seminars and examinations.  
<http://www.greenadvantage.org/>

### Green Jobs & Labor Market Information

#### Government Resources

- National Center for O\*NET Development. The Center researched green economic sectors, demand occupations, enhanced skills occupations, and new & emerging sectors which have been added to the O\*NET system.  
<http://www.onetcenter.org/green.html> and  
<http://online.onetcenter.org/help/bright/>
- Career Information Delivery System (CIDS). State systems for information on employment opportunities. CIDS may be found at community colleges, universities or employment offices.
- CareerOneStop provides an outline of green careers.  
<http://www.careeronestop.org/GreenCareers/GreenCareers.aspx>
- U.S. Department of Labor, Bureau of Labor Statistics will begin in 2010 working with agencies across the Department to produce green jobs data.  
<http://www.bls.gov/green/home.htm>
- The U.S. Department of Labor's Women's Bureau maintains data regarding the position of women in the green workforce and highlights potential jobs, challenges, and training programs for women. <http://www.dol.gov/wb/>

#### Non-Government Resources

- *Energy Efficiency in the American Clean Energy and Security Act of 2009: Impacts of Current Provisions and Opportunities to Enhance the Legislation* looks at job creation as a result of utility investment and retrofits. Available from the American Council for an Energy-Efficient Economy:  
<http://www.aceee.org/pubs/e096.htm>
- "Green Collar" Job Creation: A Critical Analysis, Beacon Hill Institute at Suffolk University. This report reviews three studies predicting green jobs growth including reports from the U.N. Environment Programme, the Center for American Progress, and the U.S. Conference of Mayors.  
<http://www.beaconhill.org/BHStudies.html>
- *Green Recovery: A Program to Create Good Jobs and Start Building a Low-Carbon Economy*, a report produced by the Center for American Progress, provides estimates of impact of a green economic recovery.  
[http://www.americanprogress.org/issues/2008/09/pdf/green\\_recovery.pdf](http://www.americanprogress.org/issues/2008/09/pdf/green_recovery.pdf)
- *The Clean Energy Economy: Repowering Jobs, Businesses and Investments Across America*. This 2009 report from the Pew Charitable Trust Center on the States and Collaborative Economics Inc. looks at 16 economic sectors to develop an inventory of existing businesses and jobs in the US.  
[http://pewcenteronthestates.org/uploadedFiles/Clean\\_Economy\\_Report\\_Web.pdf](http://pewcenteronthestates.org/uploadedFiles/Clean_Economy_Report_Web.pdf)
- *U.S. Metro Economies: Current and Potential Green Jobs in the U.S. Economy*. The U.S. Conference of Mayors Climate Protection Center estimates job creation over a 30-year period and includes occupations such as retrofitting commercial and residential properties.  
<http://www.usmayors.org/pressreleases/uploads/GreenJobsReport.pdf>

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