



# NEW YORK STATE GREEN JOBS STUDY

## KEY STATEWIDE FINDINGS

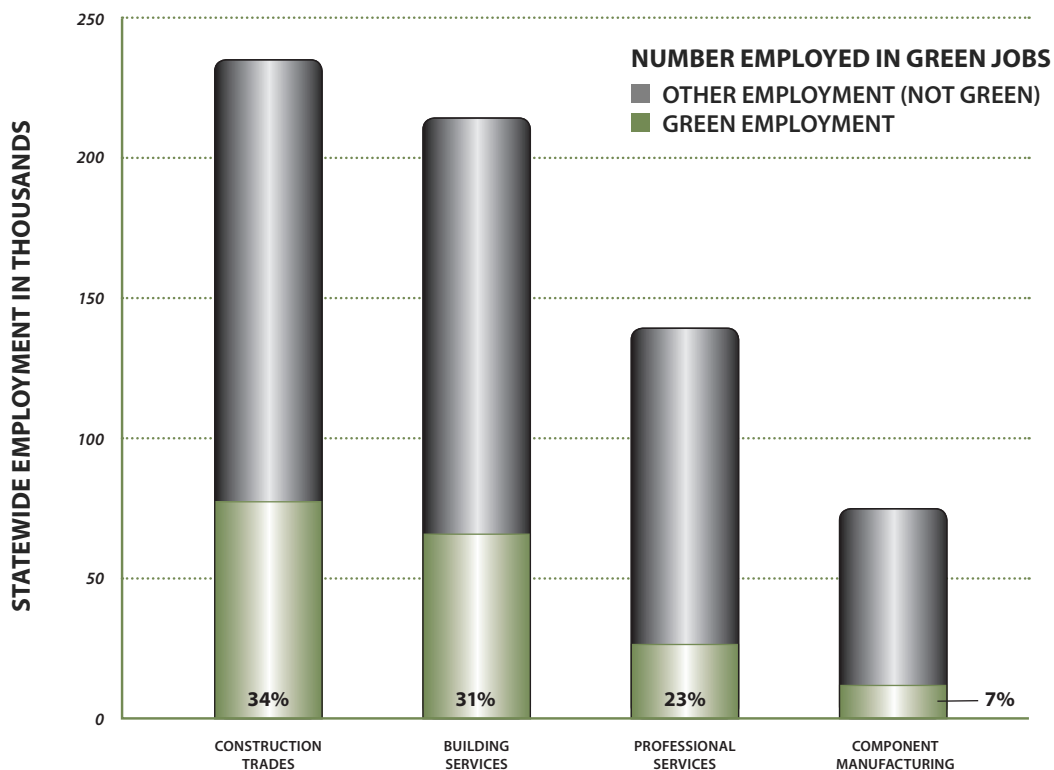
### NOVEMBER 2011



### *Where are New York State's green jobs and what training and skills do people need?*

The New York City Labor Market Information Service, along with the New York State Department of Labor and other research partners\* just completed a groundbreaking study to answer these questions. The results are in. Here are some of the major findings:

1. **The largest industry clusters studied are greening substantially.** These industries are transforming from within. Although existing jobs may be greening, overall job growth is expected to be limited in the near term due to the slow recovery from the recent recession.
  - **The Construction Cluster (commercial and residential construction, and electric power construction):** Examples of green economic activity in this cluster include new construction, retrofitting, and the installation of renewable energy systems. Construction firms were asked to indicate the number and types of employees that were primarily engaged in these activities. The top green occupations reported were jobs like heating/air conditioning mechanics and installers, carpenters, plumbers, pipefitters and steamfitters, electricians, and first-line supervisors of construction workers. Together these





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occupations make up more than half of the state's green jobs in construction. Many of these are traditional construction jobs that have added a new layer of skills for green construction activity. Newer green job titles include solar photovoltaic and solar thermal installers, insulation workers and expeditors. New York's largest commercial construction firms say that energy efficient and sustainably designed construction is firmly in place, and not a trend waiting to happen some time in the future. It is being driven both by customer preference and leadership from the public sector, both regulatory and role modeling. Virtually all Class A commercial office space and new major publicly financed construction projects are being built to green standards.

- **The Building Services Cluster (large segments of the real estate industry and services to buildings):** Green employment in this cluster is concentrated in New York City, with 58 percent of the State's total. The most common occupations in which green employment was reported were janitors/cleaners/porters, supervisors of building and grounds workers, and general maintenance and repair workers. Industry employers report that some of their most critical green employees are stationary engineers and boiler operators and professionals in new energy and sustainable services departments.

#### How was "green" defined in this study?

While the green economy touches nearly every sector of the economy, including transportation, environmental remediation, waste removal, agriculture and many others, this green jobs research focused on two spheres of green economic activity: Energy Efficiency and Renewable Energy. Within this area of interest, the following definitions were used:

- **Green economic activities** produce goods or deliver services that increase energy efficiency or generate renewable energy.
- **Green employers** are engaged in a targeted green economic activity, such as retrofitting buildings or generating power from wind energy.
- **Green employees** are primarily engaged in producing green products or delivering green services, such as photovoltaic installers, insulation workers, or energy auditors.

For Building Services, green was defined somewhat differently, as helping buildings and facilities achieve greater energy efficiency, use new energy technologies, or achieve other environmental sustainability goals. For this cluster, people engaged in recycling and green cleaning were counted as green employees.



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These professionals include engineers and architects, people who procure energy, and staff involved with retro-commissioning. New and emerging green job titles include energy manager, commissioning/retro-commissioning agent, energy auditor, and head of sustainability. Energy retrofits and energy monitoring appear to be progressing more quickly in the commercial and large residential sectors, with the smaller residential market less active.

- **The Professional Services Cluster (architecture, engineering, consulting, IT):** The top green job was architect. A number of architects interviewed for the study reported that the industry has moved dramatically in the direction of sustainability within the last 5 years. Other jobs with significant green employment are civil engineer, drafter, mechanical engineer and electrical engineer. All of these occupations are involved in designing sustainable buildings or providing consulting services that facilitate energy efficiency or use of renewable energy by clients. More than half of all green employment in the cluster was found in New York City, with 15,050 out of 31,490 green employees statewide.
  - **The Component Manufacturing Cluster (components of energy efficiency or renewable energy, such as heating equipment, photovoltaic panels, and energy storage systems):** This is the smallest of those included in the green jobs study and has the least green employment. Green employment was predominantly concentrated upstate, where there are also a number of positive new developments.
- 2. General economic conditions and financing issues may be the greatest challenges to expansion of the green sector.**
- The green economy is embedded within the general economy and therefore influenced by its condition and its impact on overall customer demand.
  - There are many efforts underway to prove the cost-benefit of energy efficiency and green building investments and practices. These analyses focus on both energy usage and cost before and after energy retrofits, and on the costs of renewable vs. fossil fuel energy. Early findings suggest returns are greater from retrofits related to heating than they are for electrical retrofits.
  - The recently enacted State law allowing on-bill financing for energy efficiency retrofits will provide a vehicle for repaying loans. On-bill financing has the potential to expand the residential market.
- 3. There is important green-related technological innovation within some sectors studied.** Sophisticated building management systems and energy information portals are becoming more common among real estate companies and larger buildings. This movement has



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been described as a “convergence of IT, telecommunications and energy data management, meeting a world with a need for lower carbon footprints and higher energy efficiency standards.” Important research and development efforts are also underway to improve the respective capacities of energy storage systems and photovoltaic cells.

4. **A significant number of companies that already have green employment expect to have more green employment a year later.** The proportions ranged from 26 percent of building services companies to 42 percent of manufacturing companies. This could mean that businesses expect to involve more of their current workforces in green activity or that businesses will hire additional workers.
5. **The credential type most valued by employers is the U.S. Green Building Council’s LEED (Leadership in Energy and Environmental Design),** where 57 percent of professional service firms (74% in New York City), 21 percent of construction firms (34% in New York City), 16 percent of building services firms and 13 percent of component manufacturing firms prefer that green employees have this type of professional credential.
6. **Most companies that employ green workers indicated that their green jobs require enhanced skills.** The largest source of this skill development is on-the-job training, followed by in-house training, professional organizations and supplier training.
7. **Significant training efforts are targeted to upgrading currently employed workers within certain sectors.** Examples include the Thomas Shortman Fund’s 1000 Superintendents Program, the CUNY Institute for Urban Systems Building Performance Lab training for Operating Engineers and New York City Public School Custodians, and the Urban Green Council’s G-PRO program, developed in cooperation with a number of labor unions, targeted to construction and building services workers.
8. **Many community colleges and non-profit organizations are offering green related education, often in collaborative relationships that take advantage of each organization’s particular expertise.** While many non-profit organizations are involved in green training, the majority of green programs and courses are offered by the community colleges and universities.
9. **It appears that the biggest drivers of the greening of the industry clusters studied are public sector leadership and customer demand.** Public sector leadership includes federal, state and city policies and laws, and utility programs. The New York State Energy Research and Development Authority (NYSERDA) plays a large role in stimulating and guiding the green economy in New York State. Significant green-related customer demand drives the market for professional services, construction, building services, and, to some extent,



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manufacturing. However, firms complain that green economic activity is sometimes inhibited by the bureaucratic requirements and practices of some regulatory agencies.

**10. Employers are clear on their advice to education and training providers.** They want:

- **More hands-on education and more experience for students in the work world—** whether through co-op programs, internships or similar approaches.
- **Cross-functional training**, i.e., sales/communication/teamwork/interpersonal skills along with technical training; more interdisciplinary work between architects and engineers.
- **Quality training and the right match of the person for the job.** In the “mad rush” to get people trained, sometimes the quality of training can suffer, people may be enrolled who cannot benefit fully from the training, and trainees might not be fully prepared with the skills needed for the job.



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#### **\*About New York State's Green Jobs Study**

This document presents findings in brief from a larger study, conducted by the New York State Department of Labor in collaboration with three research partners—the New York City Labor Market Information Service (NYCLMIS) at the CUNY Graduate Center, the Advanced Energy Center (AEC) at Stony Brook University and the Energy and Environmental Technical Applications Center (E2TAC) at the University at Albany. The study was funded by the U.S. Department of Labor through the American Recovery and Reinvestment Act of 2009 with assistance from CUNY and the New York City Workforce Investment Board. All of the findings from this study are addressed in a detailed technical report, available on the NYCLMIS website.

In keeping with the priorities of New York State's Energy Plan, the Green Jobs Study focused on the industry clusters that are most involved in energy efficiency and renewable energy: Construction, Building Services, Professional Services and Manufacturing.

The research activities included a survey of approximately 20,000 employers statewide (with a 43% response rate), including every firm in the selected industries with 26 or more employees, and a 20 percent sample of those with 25 or fewer. Other research activities were focus groups with leading-edge firms, interviews with industry experts and a catalogue of educational opportunities both degree and nondegree programs. These findings can be used by firms, education and training providers, and policy-makers seeking to further understand and operate strategically within the green economy.

#### **For the full report, other project materials, and further information, contact:**

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Visit the New York State Department of Labor's [www.greencareersny.org](http://www.greencareersny.org)

Visit the NYC Labor Market Information's Website [www.urbanresearch.org](http://www.urbanresearch.org)