



New York State Green Jobs Survey Overview

Introducing the Green Jobs Study

As part of the American Recovery and Reinvestment Act of 2009, the New York State Department of Labor was awarded a \$1.1 million grant from the United States Department of Labor to conduct research on the green labor market in New York State.

This research goes hand-in-hand with New York State's commitment to increasing energy efficiency and maximizing growth in its clean energy sector, in keeping with the Energy Efficiency Portfolio Standard; the Renewable Portfolio Standards; the Regional Greenhouse Gas Initiative; and the State Energy Plan.



As one part of the study, the New York State Department of Labor and its research partners surveyed 20,000 businesses in late 2010 to determine the number and types of green jobs in the State.

Questions Answered

Policymakers, researchers and the public have a variety of questions about the green labor market in New York State. To get answers, the Department of Labor surveyed businesses in industry clusters where green jobs were likely to be found. The Department of Labor sought out companies that produce goods or deliver services that increase energy efficiency or generate renewable energy. The resulting information was used to develop answers to the questions below.



- [How many firms in New York have green jobs?](#) 3
- [How many workers in New York have green jobs?](#) 4
- [Do firms expect their green employment to change?](#) 5
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Defining Green

While “green” touches nearly every sector of the economy (such as agriculture, education, energy, transportation, etc.), New York State’s Green Jobs Survey focused on two spheres of green economic activity: **Renewable Energy** and **Energy Efficiency**.

Here are a few definitions used in the New York State Green Jobs Survey:

- **Green economic activities:** Activities that produce goods or deliver services that increase energy efficiency or generate renewable energy.
- **Green employer:** An employer engaged in a targeted green economic activity, such as retrofitting buildings or generating power from wind energy.
- **Green employee:** A worker primarily engaged in producing green products or services, such as a photovoltaic installer, an insulation worker or a wind turbine assembler.

Future research may include other green sectors such as pollution abatement or waste remediation, which would require more expansive green definitions.

Industry Spotlight

The Green Jobs Survey was sent to firms in several industry clusters. Its findings focus on the following clusters that reported a significant green component:

- | | |
|------------------------------|----------------------------------|
| ✓ Construction Trades | ✓ Component Manufacturing |
| ✓ Building Services | ✓ Professional Services |

Research Partners

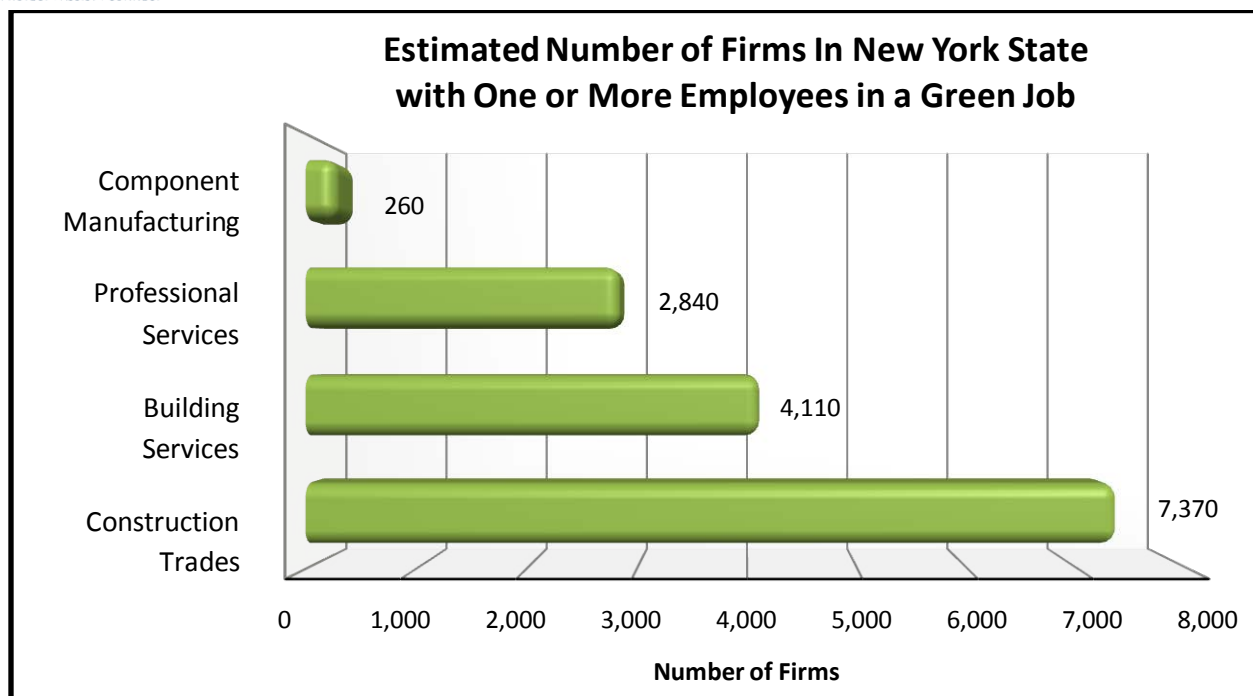
- ***The City University of New York’s Graduate Center’s New York City Labor Market Information Service (NYCLMIS)***
- ***The University at Albany’s College of Nanoscale Science and Engineering’s Energy and Environmental Technology Applications Center (E2TAC)***
- ***Stony Brook University’s Advanced Energy Center (AEC)***

Survey Conventions

While every effort was made to ensure that the survey findings are representative, please note:

- As with all surveys, results are subject to sample and non-sample sources of error
- Estimates are based on employer self-identification and have not been independently verified
- Adding regional firm and employment estimates may not equal state totals
- Firm and employment estimates are rounded to the nearest ten
- Percentages are calculated from unrounded data and rounded to the nearest percentage point

New York State Green Jobs Survey Finding 1: **How Many Firms in New York Have Green Jobs?**



Firms Statewide	Component Manufacturing	Professional Services ¹	Building Services	Construction Trades
Number with Green Jobs	260	2,840	4,110	7,370
Number in Cluster Statewide	1,660	10,300	25,540	26,980
Percent with Green Employees ²	15%	28%	16%	27%

In these four clusters alone, there are over 14,500 firms that have one or more employees primarily engaged in producing goods or delivering services that increase energy efficiency or generate renewable energy.

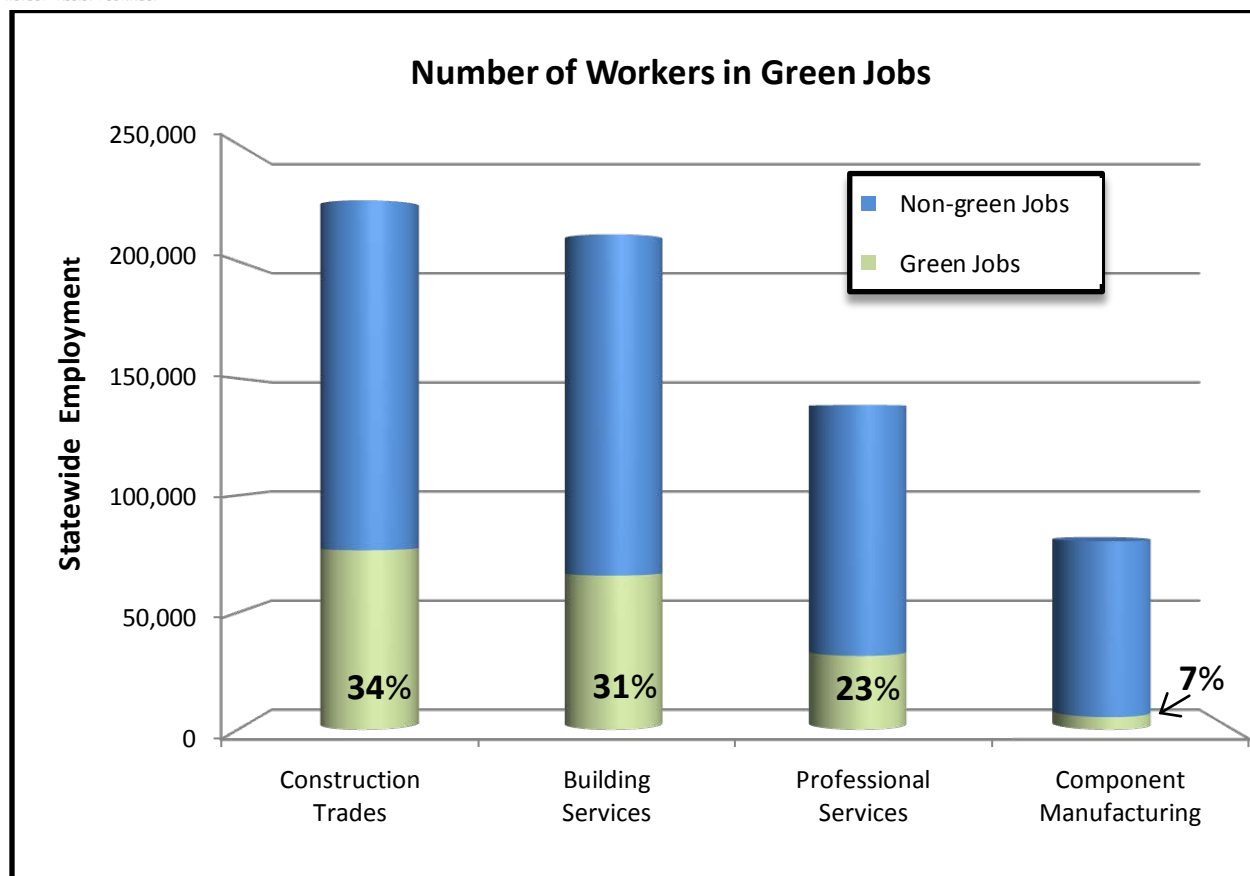
The smallest industry cluster listed above – Component Manufacturing – also has the fewest firms with green employment whereas the largest – Construction Trades – has the most. Building Services is the second largest cluster and has the second highest number of firms with green employment, while Professional Services ranks third on both measures.

A different picture emerges when clusters are ranked by share of firms with green employment. Professional Services tops the list with 28% of its firms having green employment. Construction Trades is a close second with 27%, Building Services is third at 16% and Component Manufacturing is fourth at 15%.

¹ The Professional Services industry cluster excludes legal services.

² Percentages are based on unrounded figures.

New York State Green Jobs Survey Finding 2: How Many Workers in New York Have Green Jobs?



Statewide	Construction Trades	Building Services	Professional Services	Component Manufacturing
Green Employment	76,600	65,770	31,490	5,360
Cluster Employment	226,020	211,460	138,600	80,450

Statewide, in these four clusters nearly 180,000 workers are employed in green jobs.

Among selected industry clusters, Construction Trades not only has the greatest number of workers (226,020), but also the greatest number of workers in green jobs (76,600). It also has the largest occurrence of green employment (34%).

Workers engaged in green economic activity make up 31 % (65,770) of Building Services' total employment of 211,460 and 23% (31,490) of Professional Services' total employment of 138,600.

Component Manufacturing is the smallest of the four clusters, with only 80,450 workers. This cluster also has the fewest workers employed in green jobs (5,360) and has the smallest occurrence of green employment (7%).

New York State Green Jobs Survey Finding 3: Do Firms Expect their Green Employment to Change?

Expected Over-the-Year Change in Green Employment

One Year Change	Building Services	Construction Trades	Component Manufacturing	Professional Services
For firms with green jobs, what is their expected change in green employment?				
Grow Larger	26%	30%	42%	38%
Unchanged	50%	42%	39%	45%
Become Smaller	1%	4%	3%	3%
Don't Know	23%	24%	16%	14%
Number of Firms	4,110	7,370	260	2,840
For firms without green jobs, do they expect to have green employment?				
Yes	4%	7%	3%	4%
No	71%	57%	70%	74%
Don't Know	25%	36%	27%	22%
Number of Firms	21,430	19,600	1,400	7,460

Firms with green jobs were asked if they anticipated their number of green jobs to change in the next year (grow larger, become smaller, remain unchanged). Firms which did not have green jobs were asked if they anticipate creating any green jobs in the upcoming year.

Among firms with green jobs, Component Manufacturers are most likely to anticipate an increase in green employment: 42% foresee having a larger green workforce next year. Half of these firms expect their number of workers in green jobs to be “larger” and half expect their number to be “significantly larger.”

Among firms with green jobs, 26% of Building Services, 30% of Construction Trades, and 38% of Professional Services firms expect their green employment to grow.

The most common prediction, by firms across all four industry clusters, is that their green employment will not change.

Few firms anticipate a decrease in the number of their green workers. In every cluster, less than 5% of green firms foresee a reduction in their existing green workforce.

A number of firms without green jobs expect to create their first green job within the next year. For example, 4% of 7,460 Professional Services businesses anticipate at least one green job, which could increase the number of Professional Services firms with green employment by 300 (+11%).

New York State Green Jobs Survey Finding 4: What are the Most Common Credentialing Agencies Preferred by Employers for their Green Jobs?

Leadership in Energy and Environmental Design (LEED)

Leadership in Energy and Environmental Design (LEED) is administered by the U.S. Green Building Council (USGBC). LEED offers certification for buildings and credentials for individuals. The Green Building Certification Institute (GBCI) administers LEED professional credentials in green building design, construction and maintenance, and neighborhood development. For more information about LEED credentials, visit www.gbci.org.

The Building Performance Institute, Inc. (BPI)

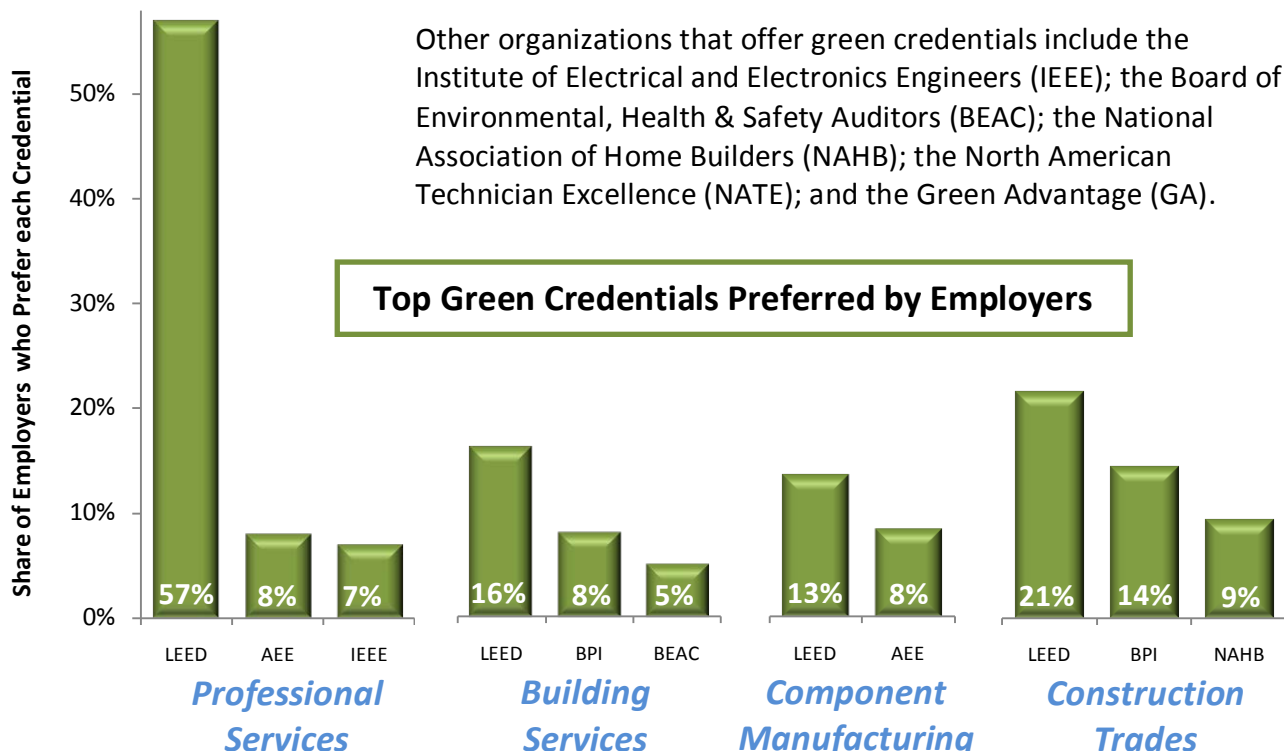
The Building Performance Institute, Inc. (BPI) is an independent non-profit organization that develops industry standards for residential energy efficiency retrofits and weatherization. BPI offers company accreditations and professional credentialing. Many professional certification types are available, including building envelope, manufactured housing, and multifamily. For more information, see www.bpi.org.

The Association of Energy Engineers (AEE)

The Association of Energy Engineers (AEE), a non-profit professional society with over 14,000 members, offers a broad range of professional certifications in the energy industry. AEE certification programs require candidates to pass written examinations as well as meet specific educational and/or experience criteria. To learn more, go to www.aeecenter.org.

Other Green Groups

Other organizations that offer green credentials include the Institute of Electrical and Electronics Engineers (IEEE); the Board of Environmental, Health & Safety Auditors (BEAC); the National Association of Home Builders (NAHB); the North American Technician Excellence (NATE); and the Green Advantage (GA).



New York State Green Jobs Survey Finding 5: Which Occupations are Green, or Greening?

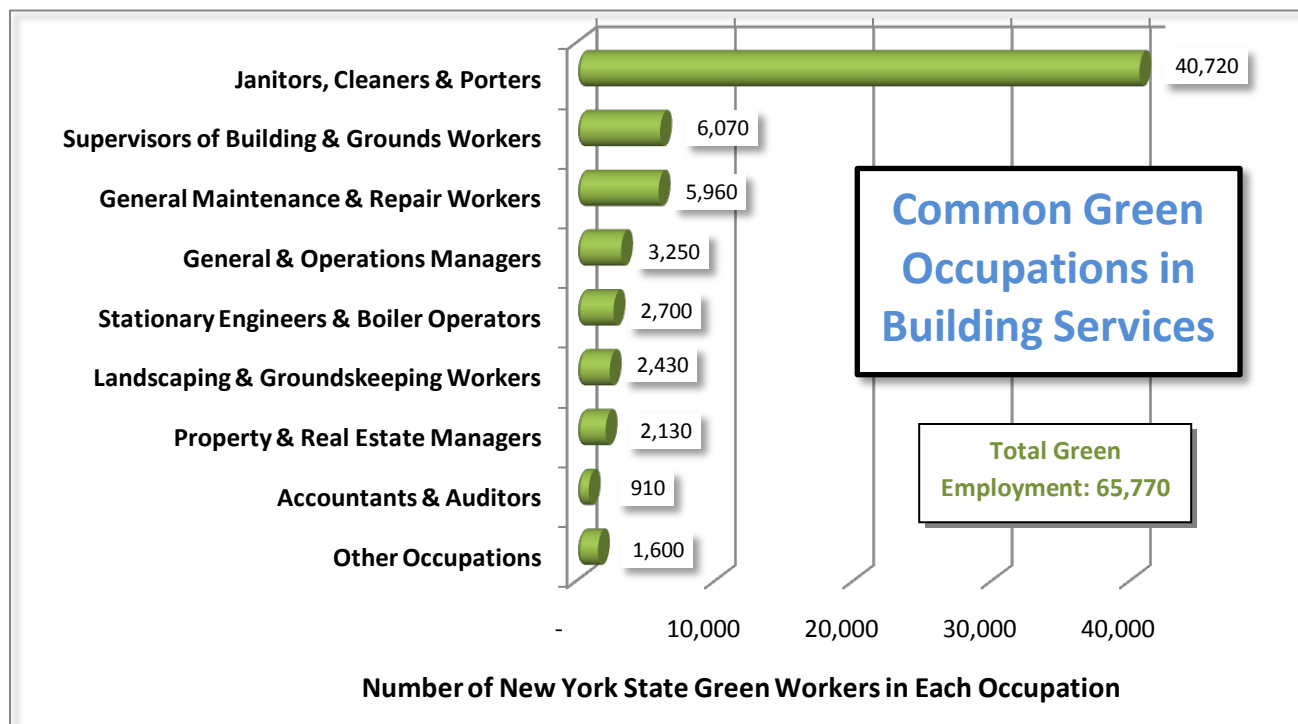


Many different occupations are involved in producing goods or delivering services that increase energy efficiency or generate renewable energy. Construction workers, for example, engage in new construction or retrofitting to improve the energy efficiency of residential and commercial buildings.

In Construction Trades, the five most common green occupations are Heating and Air Conditioning Mechanics and Installers, Carpenters, Plumbers, Electricians, and Supervisors of Construction Workers. These five occupations constitute over 50% of this industry cluster's green employment.

Green Heating and Air Conditioning Mechanics and Installers install energy-efficient heating and air conditioning systems in residences and commercial establishments. Green Electricians install and maintain energy-efficient electrical equipment.

New York State Green Jobs Survey Finding 5: Which Occupations are Green, or Greening?



The most common green occupations in Building Services (Janitors, Maintenance and Repair Workers, First Line Supervisors, General Managers, etc.) are involved not only in energy-efficiency activities, but also in recycling and green cleaning. Recycling and green cleaning contribute to environmental sustainability (see below).

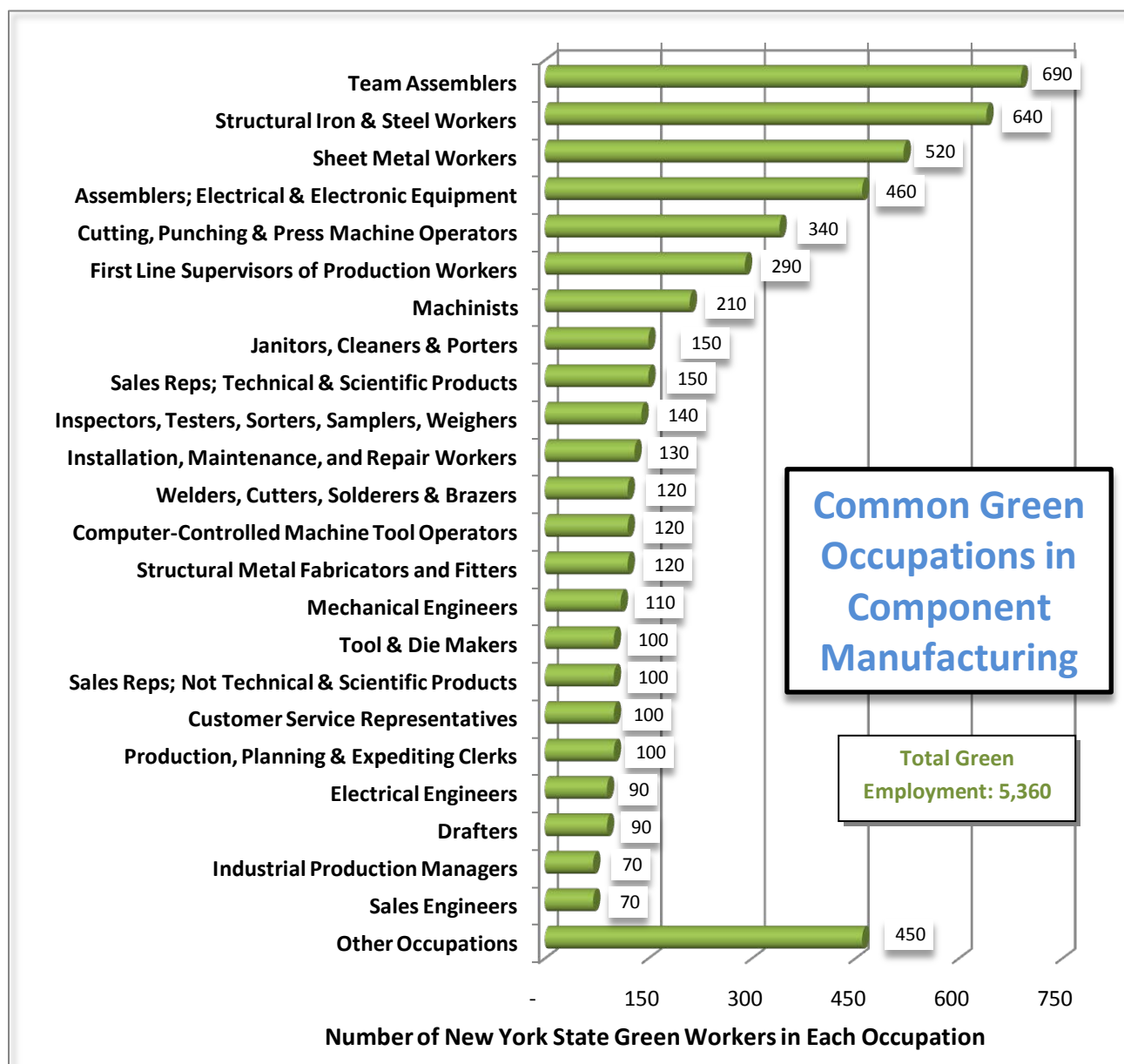
More than 60% of the cluster's green employment is in one occupation: Janitors, Cleaners and Porters. Green Janitors are primarily involved in recycling and green cleaning.

Green General Maintenance and Repair Workers keep the energy-efficient mechanical equipment and the structure of an establishment in repair. They also perform routine preventive maintenance to ensure that machines and equipment continue to run smoothly.

How is Green Defined Differently in Building Services?

In Building Services, green is defined 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 workers in the Green Jobs Survey.

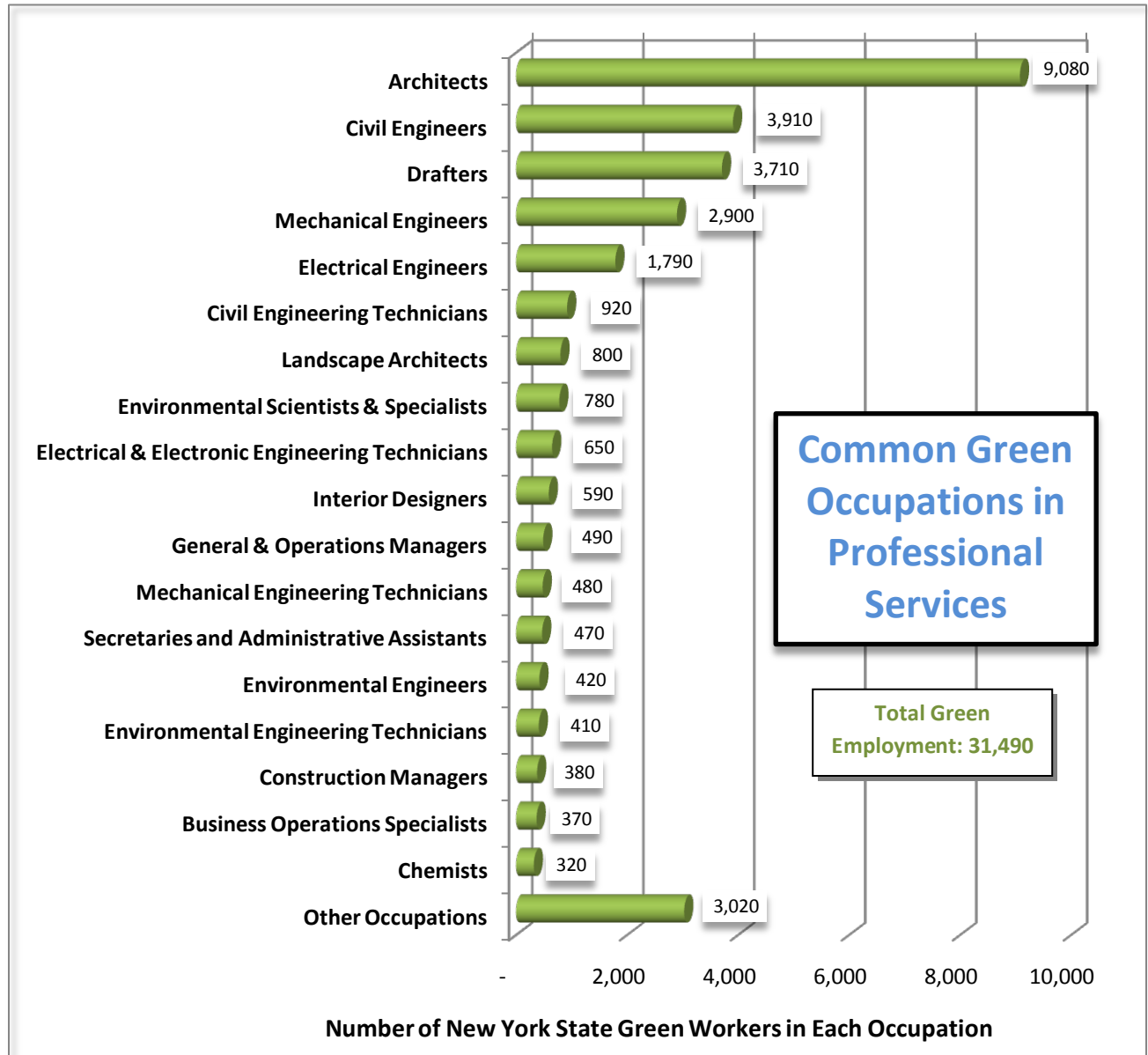
New York State Green Jobs Survey Finding 5: Which Occupations are Green, or Greening?



The five most common green occupations in the Component Manufacturing Cluster are Team Assemblers; Structural Iron and Steel Workers; Sheet Metal Workers; Electrical and Electronic Equipment Assemblers; and Cutting, Punching and Press Machine Operators (Metal and Plastic). These five occupations account for approximately half of the cluster's green employment.

Green Team Assemblers perform all the normal tasks of the assembly process, but fabricate energy efficient or renewable energy equipment. Most of the green occupations in Component Manufacturing are green because of the products they produce, though some are counted because they use energy efficient or other green methods of production.

New York State Green Jobs Survey Finding 5: Which Occupations are Green, or Greening?

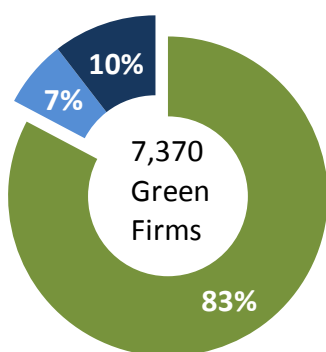


Green employment in the Professional Services cluster is concentrated in a few occupations. The five most common green occupations -- Architects, Civil Engineers, Drafters, Mechanical Engineers and Electrical Engineers -- account for over two-thirds of the cluster's green employment. All of these occupations are involved in delivering energy efficiency products and services.

Architects design energy-efficient private residences, office buildings, schools, factories, and other buildings. Civil Engineers plan, design, and oversee the construction and maintenance of buildings and other facilities, often improving their energy efficiency in the process.

New York State Green Jobs Survey Finding 6: **Are Firms Able to Fill All Their Green Jobs?**

The short answer – “In most cases, there's no problem.”
In New York State, most businesses have little difficulty
finding and hiring qualified employees for their green jobs.

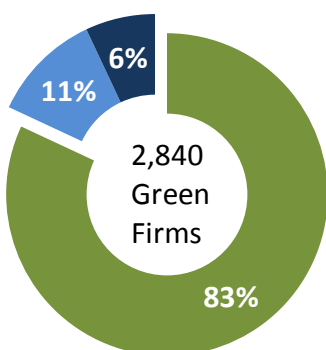
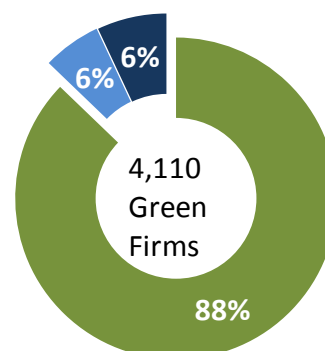


Construction Trades

Of the 7,370 green firms in Construction Trades in New York State, 83% (6,110) have no difficulty recruiting green workers. 17% have difficulty recruiting qualified green workers; 10% have difficulty recruiting for more than one green occupation.

Building Services

Of the 4,110 green firms in Building Services in New York State, 88% (3,630) have no difficulty recruiting green workers. 12% have difficulty recruiting qualified green workers; 6% have difficulty recruiting for more than one green occupation.

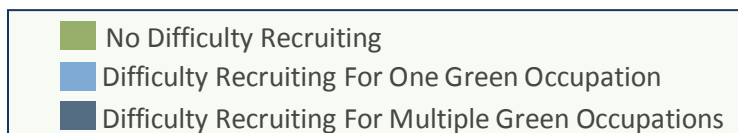
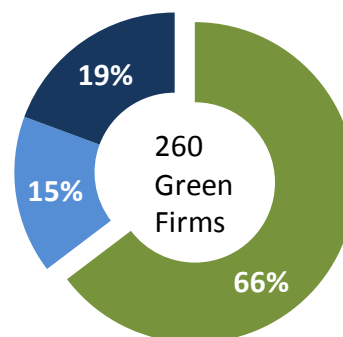


Professional Services

Of the 2,840 green firms in Professional Services in New York State, 83% (2,350) have no difficulty recruiting green workers. 17% have difficulty recruiting qualified green workers; 6% have difficulty recruiting for more than one green occupation.

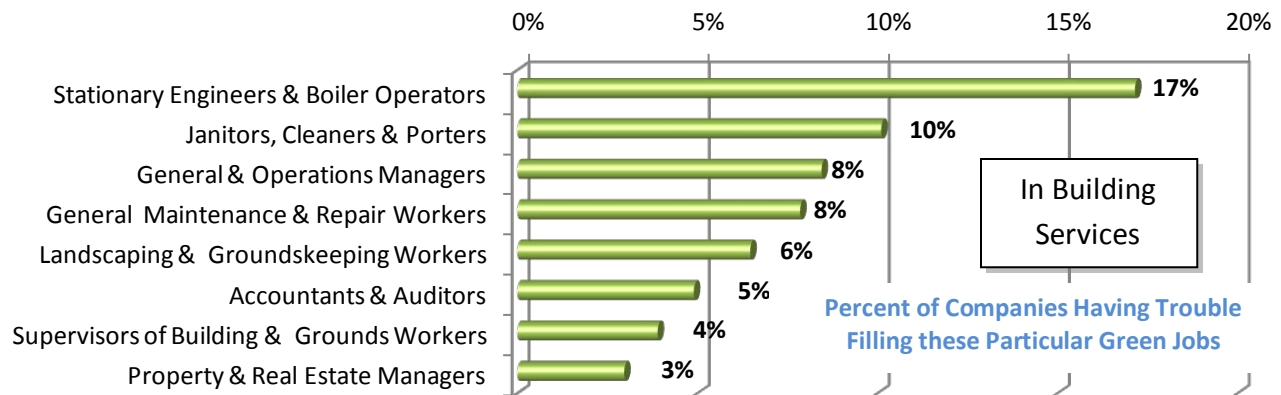
Component Manufacturing

Of the 260 green firms in Component Manufacturing in New York State, 66% (170) have no difficulty recruiting green workers. 34% have difficulty recruiting qualified green workers; 19% have difficulty recruiting for more than one green occupation.



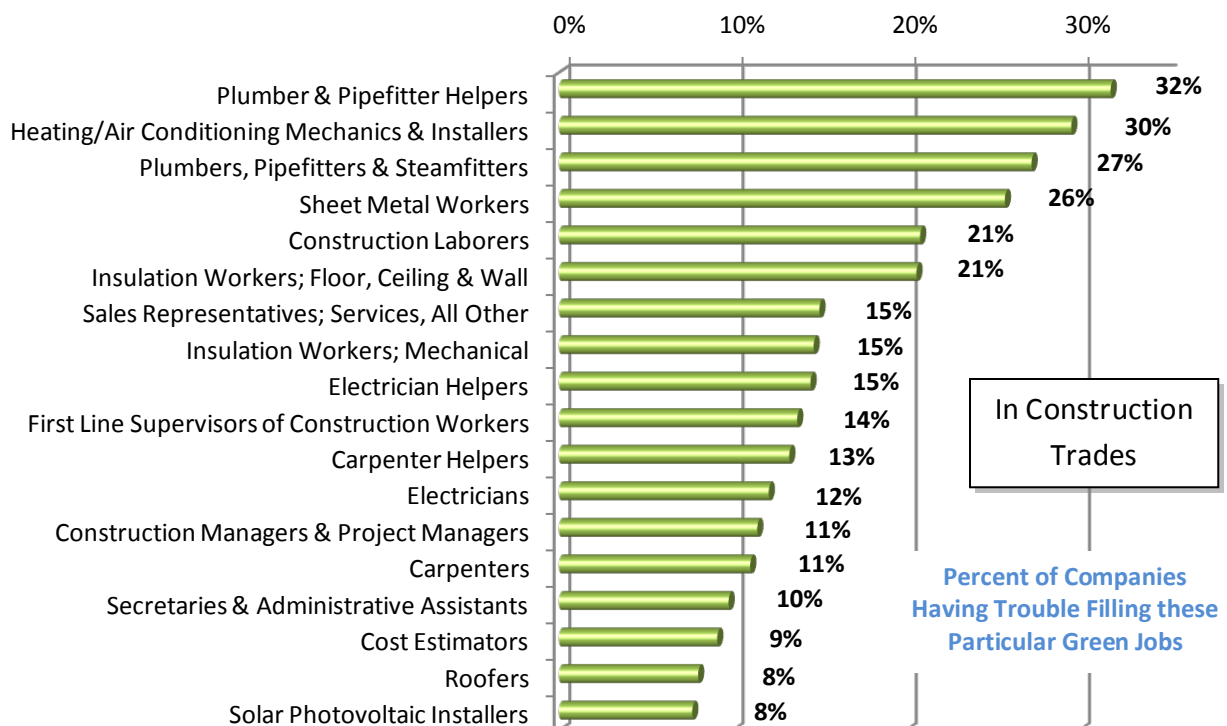
New York State Green Jobs Survey Finding 7: Which Green Job Occupations are in Demand?

Green Job Occupations Currently in High Demand



Of the building services companies statewide that employ or are looking to employ green stationary engineers and boiler operators, 17% are having difficulty filling these positions. These workers operate and maintain utility systems for buildings or industrial processes; they are responsible for the efficient use of energy and the maintenance of green energy systems.

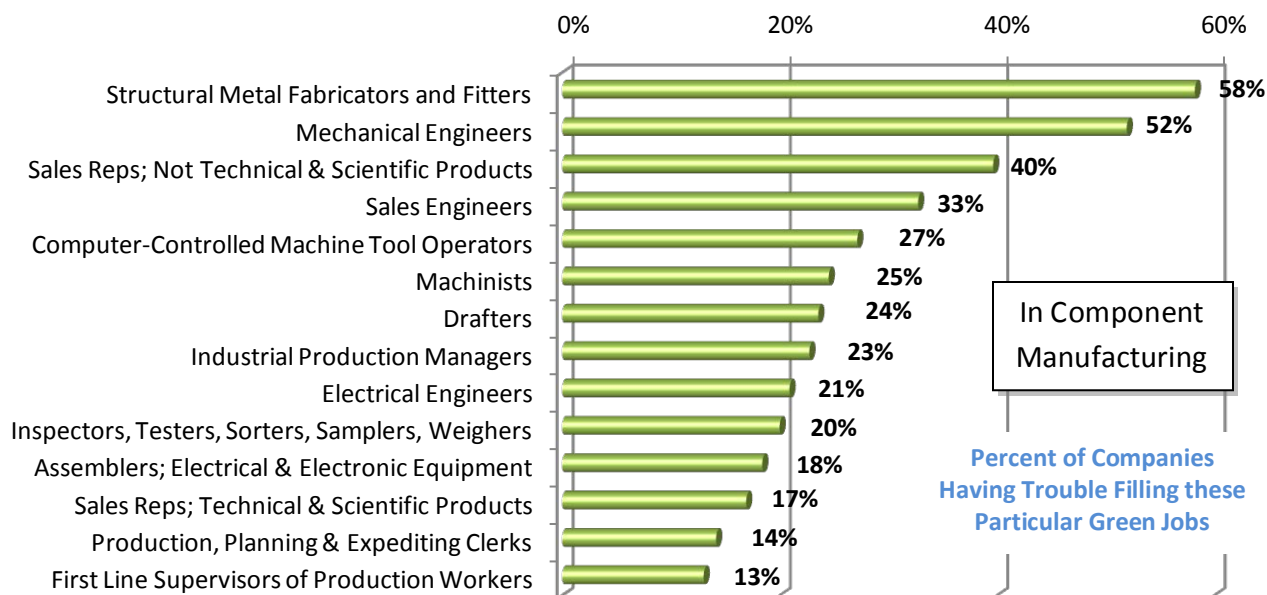
Green Job Occupations Currently in High Demand



30% of the Construction Trades firms that employ or seek to employ green heating and air conditioning mechanics and installers have difficulty recruiting qualified green workers for these jobs. These workers maintain and install new energy-efficient heating systems.

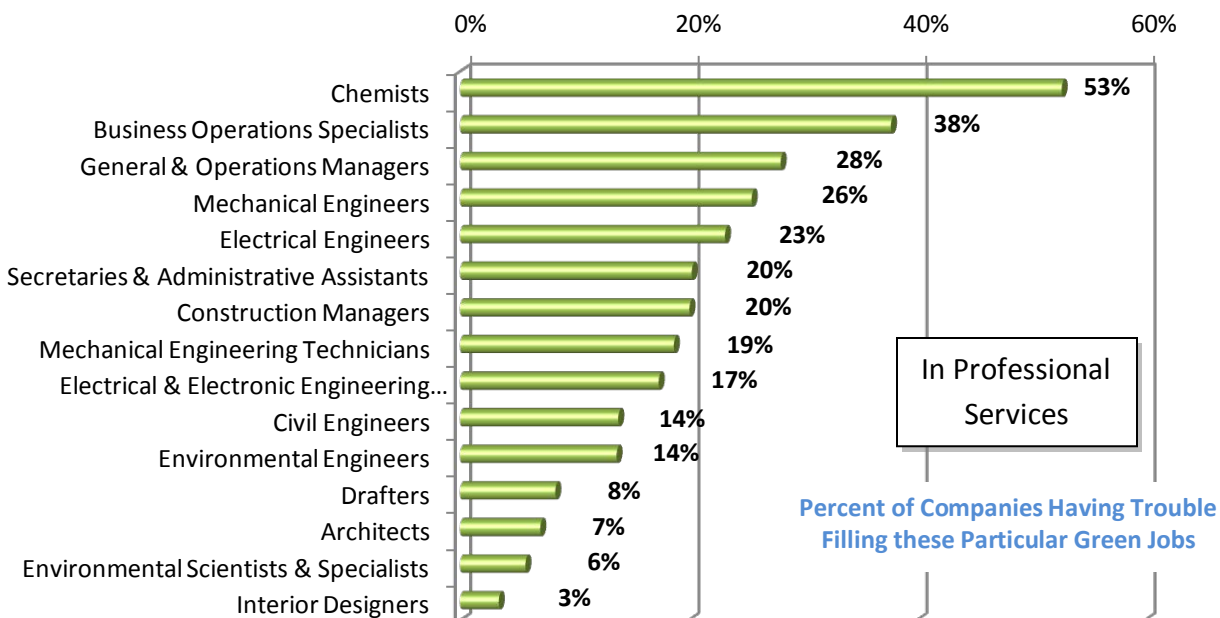
New York State Green Jobs Survey Finding 7: Which Green Job Occupations are in Demand?

Green Job Occupations Currently in High Demand



58% of Component Manufacturing firms employing or seeking to employ green structural metal fabricators and fitters are having trouble filling these positions. These workers produce manufactured green products such as the frames used in the construction of windmills.

Green Job Occupations Currently in High Demand

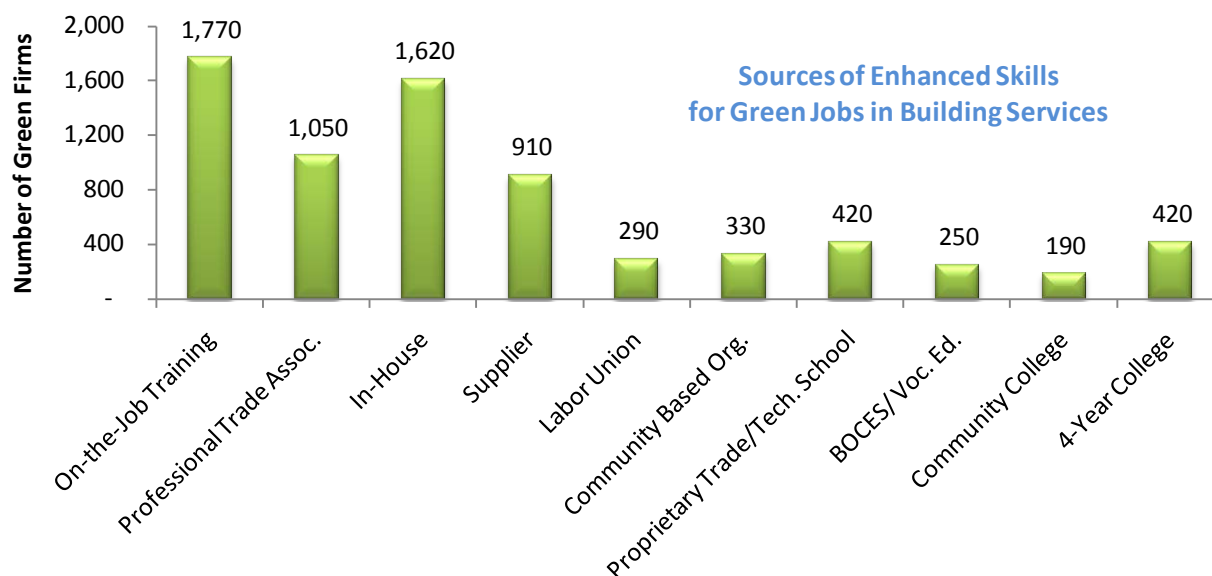


53% of Professional Services firms employing or seeking to employ green chemists are having trouble filling these positions. These workers may be developing viable bio-fuels, or designing additives to help fuel burn more cleanly.

New York State Green Jobs Survey Finding 8: What is the Need for Additional Training?

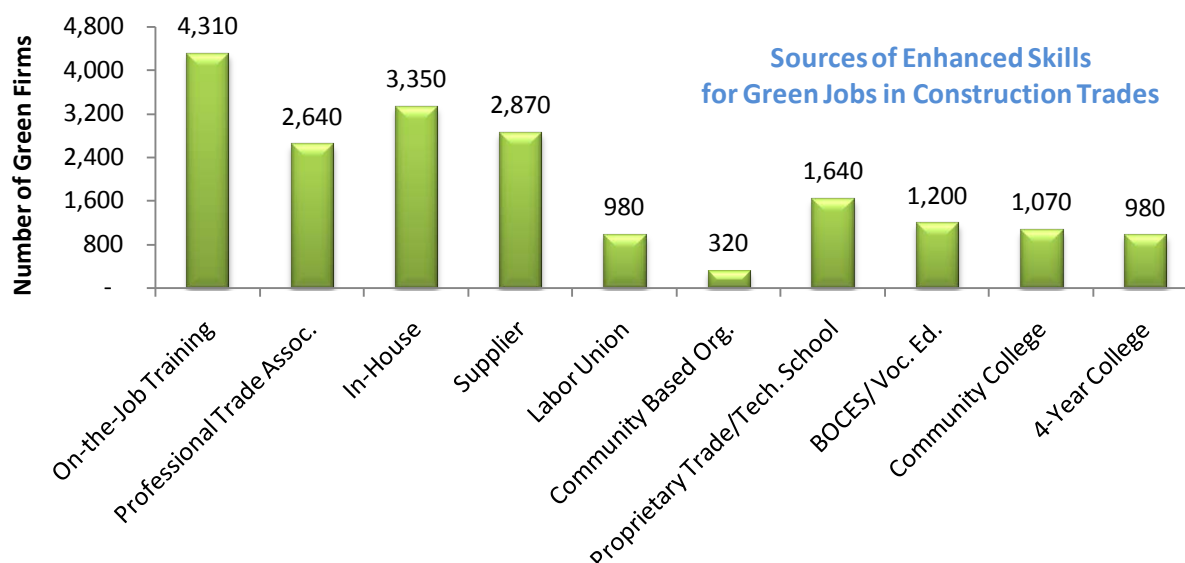
Building Services

In Building Services, 65% (2,680) of green firms require that their employees have some form of enhanced skills to deliver green services. To train their employees, firms most often utilize on-the-job training and/or in-house training programs.



Construction Trades

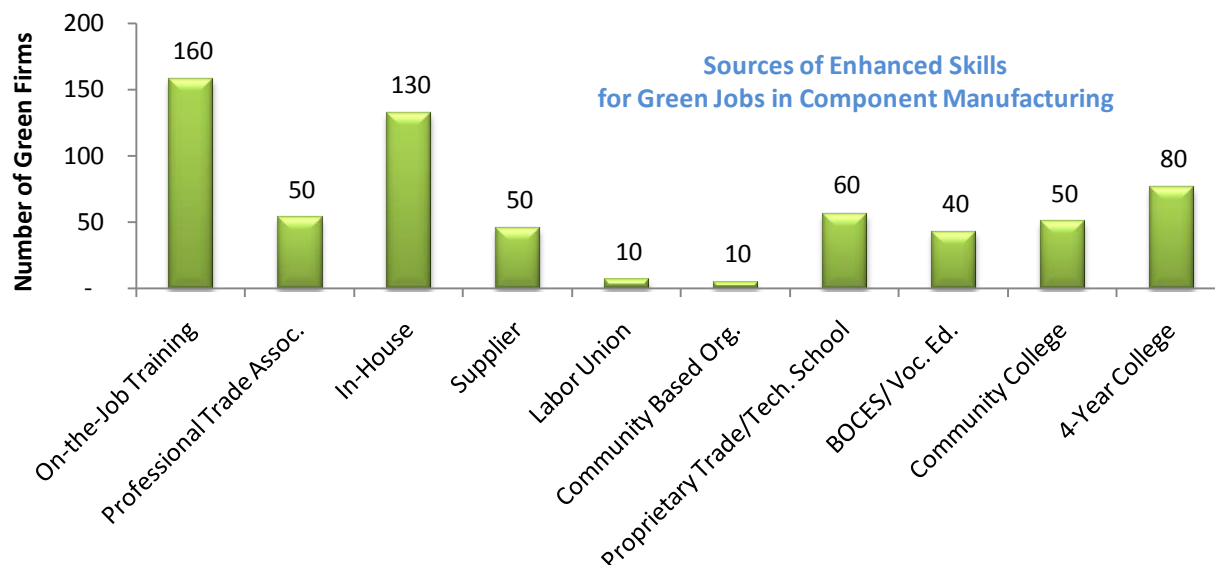
Approximately 77% (5,660) of green firms in Construction Trades require employees to have enhanced skills in order to produce green products or services. To train their employees, firms most often utilize on-the-job training and/or in-house training programs.



New York State Green Jobs Survey Finding 8: **What is the Need for Additional Training?**

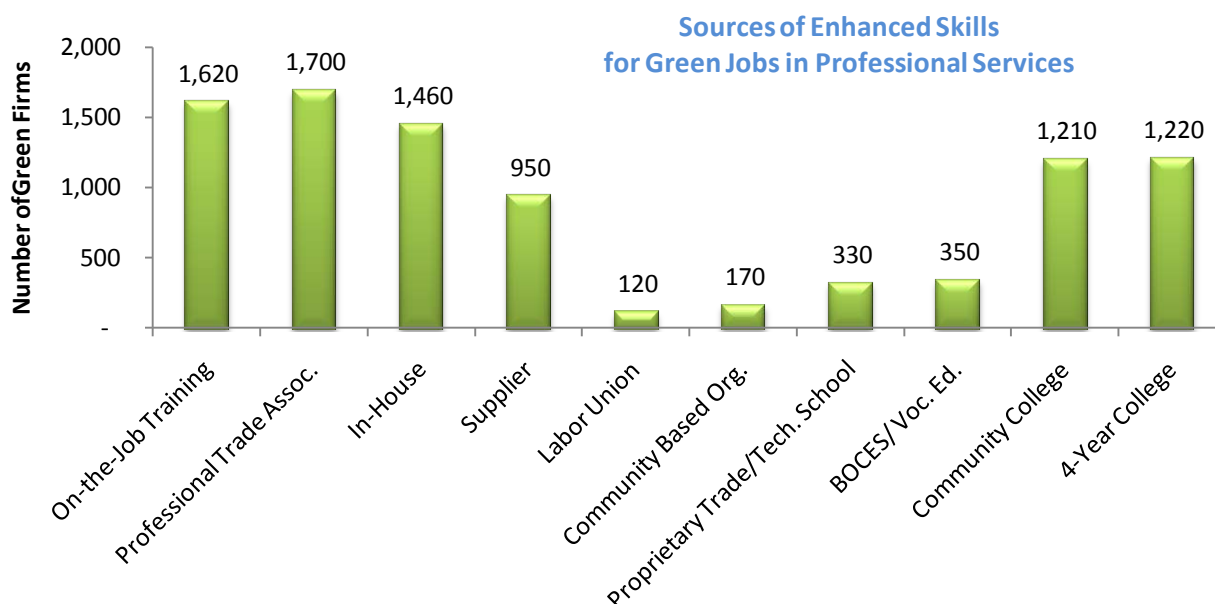
Component Manufacturing

The share of green Component Manufacturing firms requiring that employees have enhanced skills to produce green products or services is 81% (210). To train their employees, firms most often utilize on-the-job training and/or in-house training programs.



Professional Services

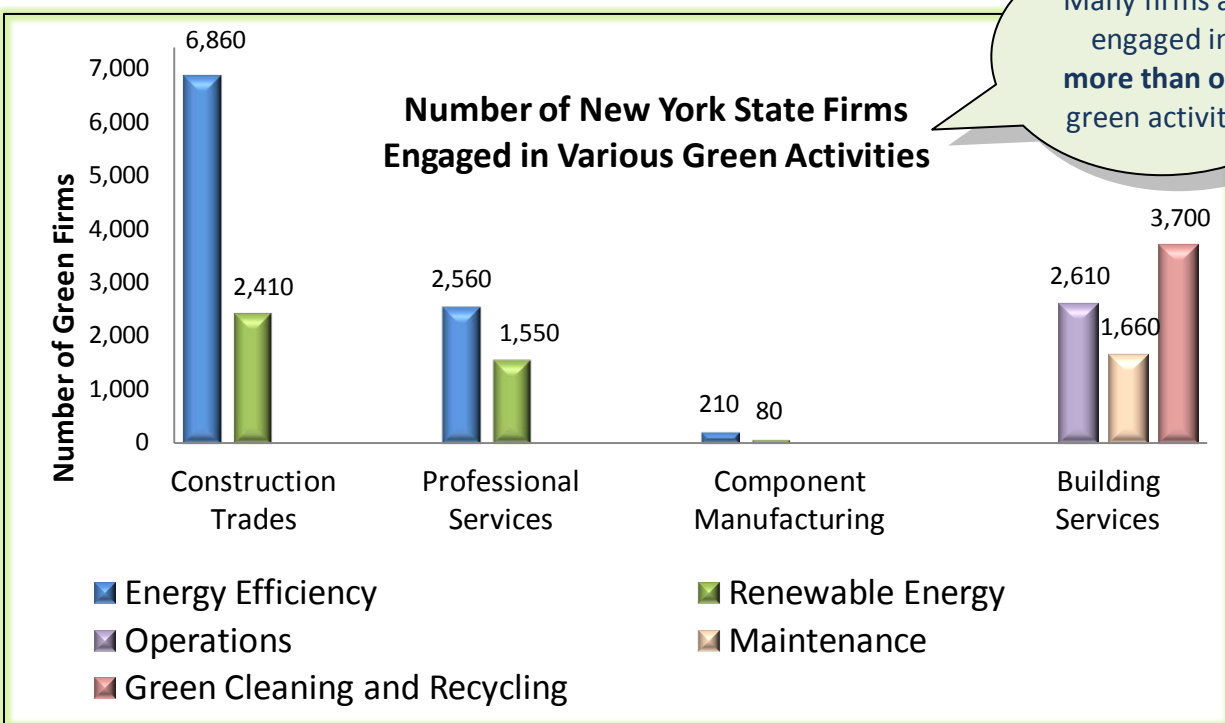
89% of green employers in Professional Services require that employees have enhanced skills to produce green products or services. To train their employees, firms most often utilize professional trade associations and/or on-the-job training.



New York State Green Jobs Survey Finding 9: Which Green Activities are Businesses Engaging In?

Companies may participate in a wide variety of green activities, even within the same industry cluster. For example, of the 7,370 construction firms in New York State with green jobs (see page 3), the overwhelming majority (6,860) are engaged in energy efficiency activities such as retrofitting or new green construction.

However, some of those same firms are also among the 2,410 green construction firms doing projects that generate or support renewable energy, such as wind mill construction or hydroelectric power upgrades.



*Since the categories are not mutually exclusive (some workers fall into both the Energy Efficiency and Renewable Energy categories), the green firm counts cannot be added together to get a total employment figure for an occupation. Rather, the sum of the green firm counts would overestimate the total number of green firms. Jobs Survey Finding #1 contains green firm estimates.

Green Activity Groups and Subgroups

Energy Efficiency includes Retrofitting and/or New Construction.

Renewable Energy includes Solar PV, Solar Thermal, Wind, Biomass, Geothermal and Hydro.

Operations includes Meter Reading/Reporting, Performance Monitoring/Optimization, Retro-Commissioning and New Technologies.

Maintenance includes Renewable Energy Systems, Green Roofs/Landscaping and Indoor Air Quality.

Green Cleaning & Recycling has Green Cleaning and Recycling as distinct subgroups.