



# THE CLEAN ECONOMY *in the* PHILADELPHIA REGION

FALL 2014



## KEY FINDINGS

### SURVEY RESULTS SHOW THAT IN PHILADELPHIA:

Companies in sectors not traditionally considered green are participating in the clean economy at high rates

12,681 employees spend at least half of their time producing green goods and services

12,079 employees spend at least half of their time using green technologies and practices

## Background

**SINCE THE GREEN JOBS MOVEMENT BEGAN IN THE EARLY 2000'S, SUSTAINABLE ECONOMIC DEVELOPMENT POLICIES HAVE EVOLVED TO INCLUDE A MORE EXPANSIVE CLEAN ECONOMY SECTOR.** The Mayor's Office of Sustainability (MOS) partnered with PhiladelphiaWorks to take a new look at the clean economy. The survey focused on employment, industry, and workplace practices that support a sustainable environment, workforce, and economy. This new sector expands on previous narrow green job definitions that included only full-time workers who produce green goods and provide green services. The clean economy also includes organizations that use green technologies and practices and employees who spend part of their time making green products, providing green services, and using green technologies.

To establish a 2012 baseline of the size of the clean economy, MOS and PhiladelphiaWorks worked with reedgroup to administer a regional workforce survey that used a transparent, replicable methodology to document the number of workers and types of businesses participating in the clean economy. A more accurate gauge of the size and scale of clean economy activity in the region and identification of the most common clean economy occupations and industries will allow workforce organizations to make informed decisions in efforts to sustain clean economy growth.

## Previous Research

Previous research by the Apollo Alliance, the Brookings Institution (Brookings), U.S. Bureau of Labor Statistics (BLS), and the Pennsylvania Department of Labor & Industry (PA L&I) contained useful general results and methodologies, but no detailed information specific to the Greater Philadelphia region and obtained with a replicable method. BLS and PA L&I research produced clean economy data with a common and replicable approach for the state of Pennsylvania, but not the Philadelphia region. Brookings used a regional approach, but defined the region as the Philadelphia-Camden-Wilmington metropolitan region, which is larger than Greater Philadelphia, and used proprietary data and definitions not comparable to BLS and PA L&I surveys. Detailed information on geography, industry, specific clean economy practices, and whether clean economy participants self-identify as such for Philadelphia and the surrounding five counties was unavailable in the previous research outlined below.

### APOLLO ALLIANCE

In 2009 *Greenworks*, Philadelphia's comprehensive sustainability plan, based its clean economy goal baseline numbers on the U.S. Conference of Mayors and Apollo Alliance's green jobs definition:

[A]ny activity that generates electricity using renewable or nuclear fuels, agriculture jobs supplying corn or soy for transportation fuel, manufacturing jobs producing goods used in renewable power generation, equipment dealers and wholesalers specializing in renewable energy or energy-efficiency products, construction and installation of energy and pollution management systems, government administration of environmental programs, and supporting jobs in the engineering, legal, research and consulting fields.

By that definition, the Philadelphia-Camden-Wilmington Metropolitan Statistical Area (MSA) included 14,379 green jobs in 2006, representing 0.5% of all jobs in the MSA. *Greenworks* set a goal in 2009 to double the number of green jobs in the Philadelphia region by the year 2015. As discussed above, the green jobs definition used to establish this baseline is now outdated, and the data was for a larger geographic area than City of Philadelphia economic policies can influence.



### PENNSYLVANIA DEPARTMENT OF LABOR & INDUSTRY

The Pennsylvania Department of Labor & Industry Green Jobs Report defines green jobs as “jobs that employ workers in producing or offering products or services that promote energy efficiency, contribute to the sustainable use of resources, prevent pollution, clean up the environment, and promote the reduction of harmful emissions.” The report found that in 2008 6% of all employees and 8% of all workplaces in Pennsylvania met this definition.

### BROOKINGS INSTITUTION

The 2011 Brookings Institution report *Sizing the Clean Economy* defines the clean economy as “economic activity—measured in terms of establishments and the jobs associated with them—that produces goods and services with an environmental benefit or adds value to such products using skills or technologies that are uniquely applied to those products.” Brookings explicitly excludes “companies that adopt internal environmental goals, reform their processes to make them more environmentally responsible, or even contribute to general public knowledge about environmental issues.” Brookings found that in 2010, 2% of jobs in the Philadelphia-Camden-Wilmington MSA met this definition.

### U.S. BUREAU OF LABOR STATISTICS

The U.S. Bureau of Labor Statistics (BLS) surveys two subsets of the clean economy, green goods and services (GGS) and green technologies and practices (GTP). BLS defines GGS as goods and services sold to customers, including research and development, installation, and maintenance services that fall into one or more of the following five categories: energy from renewable sources; energy efficiency; pollution reduction and removal, greenhouse gas reduction, and recycling and reuse; natural resources conservation; and environmental compliance, education and training, and public awareness. BLS defines GTP as jobs in which workers’ duties involve making their establishment’s production processes more environmentally friendly or use fewer natural resources by researching, developing, maintaining, using, or installing technologies or practices to lessen the environmental impact of their establishment, or training the establishment’s workers in these green technologies and practices. In 2011, BLS found that 3% of all employees in Pennsylvania produced green goods and services and that 1% of all employees in the Northeast Census region (the smallest geographic category for which BLS published data) spent at least at least 50% of their time involved in green technologies and practices.



## Philadelphia Region Clean Economy Survey

In 2012 MOS engaged reedlgroup to conduct a clean economy workforce survey of more than eight thousand businesses in Bucks, Chester, Delaware, Montgomery, and Philadelphia counties. The survey used a sampling process similar to previous BLS and PA L&I surveys, but the sample also included sole proprietors, a subset of businesses that neither BLS nor PA L&I included in their surveys. Approximately half of the surveys focused on green goods and services (GGS), and half focused on green technologies and practices (GTP), as defined by BLS. The GGS surveys asked about what types of green goods and services the businesses provide; how many people the businesses employ; and what percentage of employee time is spent on green work. The GTP surveys asked what types of green technologies and practices the businesses use; how many people the businesses employ; and what percentage of employee time is spent on green work.

In addition to information about how many employees and businesses participate in the clean economy in Greater Philadelphia, MOS also set out to learn whether smaller or larger businesses are more likely to participate in the clean economy; which sectors, particularly industries not typically considered green, use GTP; which sectors of Greater Philadelphia's clean economy might offer the region competitive advantages; and how the resulting data set can be useful beyond this report.



*Greater Philadelphia workplaces using green technologies and practices are most likely to be focusing on energy efficiency and waste reduction, while the most common green goods and services in the region are recycling, reuse, and waste reduction.*



### Survey Findings

The Philadelphia Region Clean Economy Survey produced results on the number of employees and workplaces participating in the clean economy, the sectors and business sizes most commonly participating, and the distribution of clean economy employees between Philadelphia and the surrounding counties.

Survey results were similar to previously gathered data, although new findings indicate that a large percentage of clean economy workers do not devote the majority of their time to green tasks. Greater Philadelphia workplaces using green technologies and practices are most likely to be focusing on energy efficiency and waste reduction, while the most common green goods and services in the region are recycling, reuse, and waste reduction.



## Employees

The GGS survey asked how many employees spend at least 5% of their time doing green work and how many spend more than half of their time doing green work. The GTP survey asked how many employees spend at least 5%, and how many spend more than 50% of their time involved in green technologies and practices. The surveys found that 9.3% of employees in the region produce green goods and services, and 5.5% use green technologies and practices.

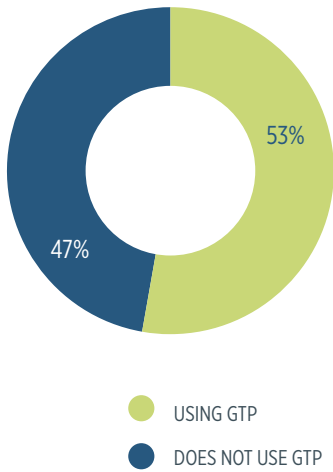
The survey found 2.7% of Greater Philadelphia employees spend more than half their time producing green goods and services (GGS), with an additional 6.7% spending 5% to 49% of their time producing them. This result suggests that the percentage of clean economy employees in the Greater Philadelphia region is similar to the percentage statewide, as the BLS found that 3% of employees in Pennsylvania spend 50% or more of their time producing GGS.

The survey found 1.5% of Greater Philadelphia employees spend 50% or more of their time using green technologies and practices (GTP), with an additional 3.9% spending 5% to 49% of their time using them. Greater Philadelphia has a slightly higher percentage of workers using GTP than the surrounding region, as BLS found that 1% of employees in the Northeast Census region spend 50% or more of their time using GTP.

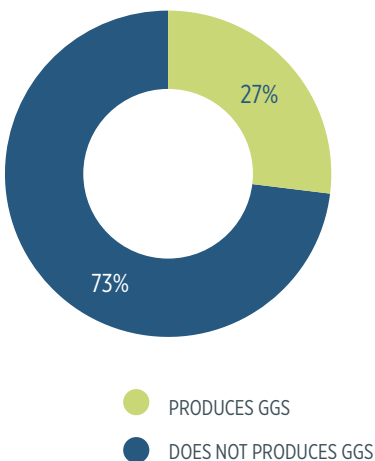
The additional information collected on employees spending 5% to 49% of their time on GGS and GTP indicates that a significant portion of clean economy work is completed by employees with additional duties beyond their green responsibilities and that companies participating in the clean economy are not only creating new, exclusively green, job opportunities, but also integrating green practices into existing job types.



PERCENT OF WORKPLACES USING GREEN TECHNOLOGIES AND PRACTICES (GTP)



PERCENT OF WORKPLACES PRODUCING GREEN GOOD AND SERVICES (GGS)

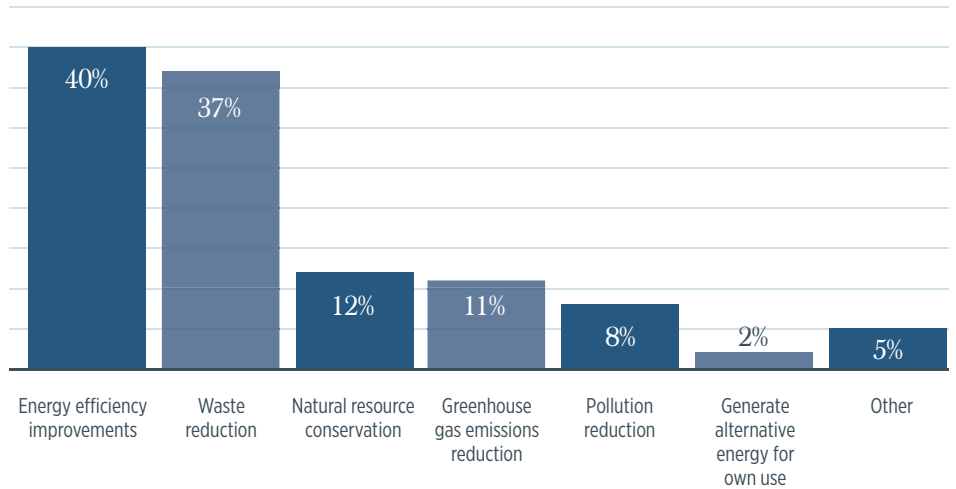


**Workplaces**

The survey found that 27% of workplaces in Greater Philadelphia produce green goods and services, while 53% of workplaces use green technologies and practices.

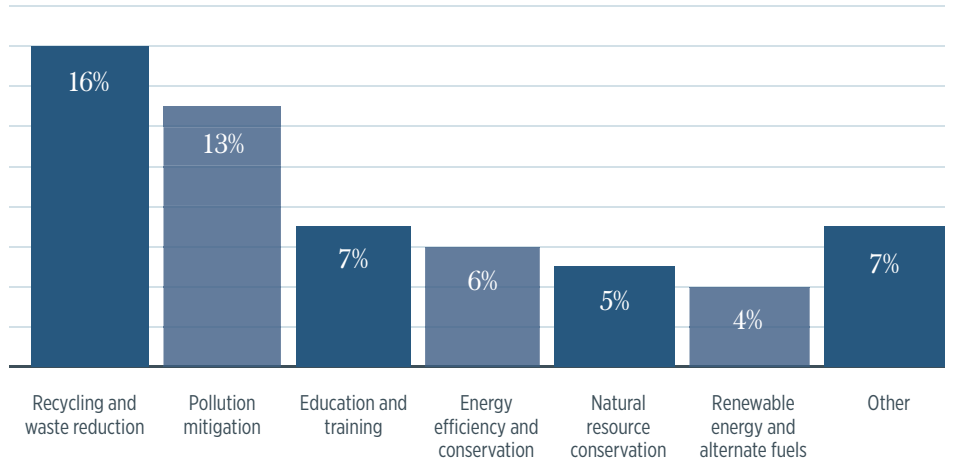
Forty percent of businesses across the region implement energy efficiency improvements and 37% practice waste reduction. Around 10% of regional businesses conserve natural resources, reduce greenhouse gas emissions, or reduce pollution, and approximately 2% of businesses generate their own electricity, heat, or fuel. Examples of GTP in the Other category include sustainable procurement and green cleaning.

PERCENT OF WORKPLACES USING SPECIFIC GREEN TECHNOLOGIES AND PRACTICES



Sixteen percent of regional workplaces provide recycling, re-use, and waste reduction services, the most common GGS in the Philadelphia area. A further 13% of businesses provide greenhouse gas reduction or pollution mitigation and clean-up. Examples of GGS in the Other category include sustainable catering and environmental planning and design.

PERCENT OF WORKPLACES PRODUCING SPECIFIC GREEN GOODS AND SERVICES



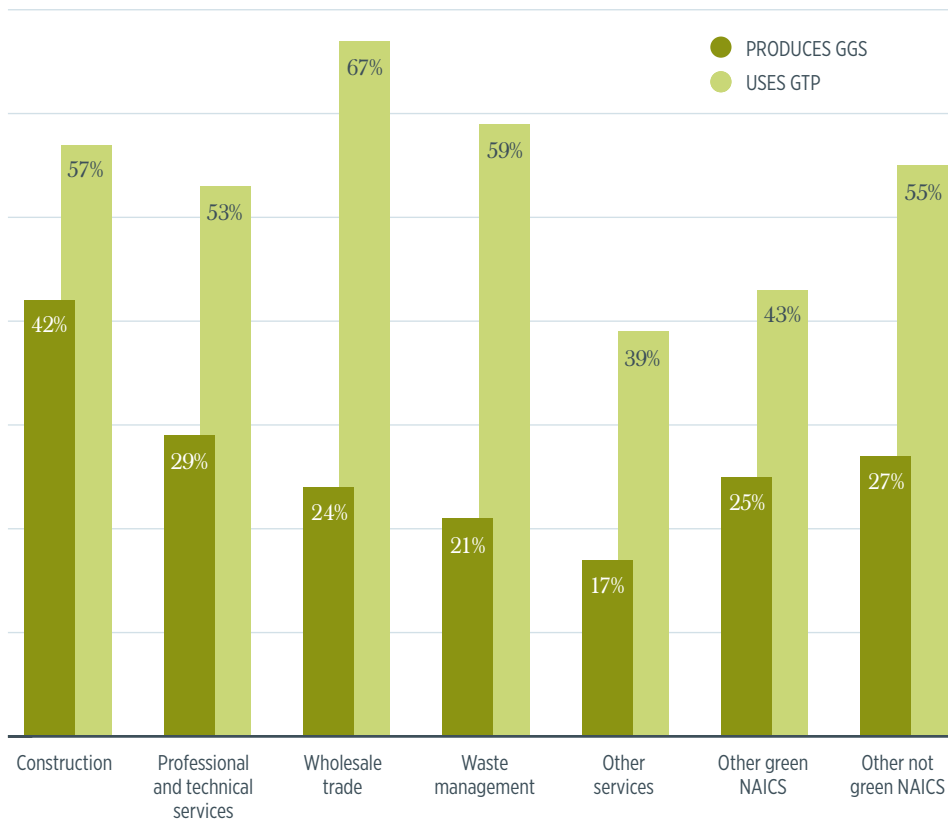
## Sectors

MOS categorized survey respondents based on their North American Industry Classification System (NAICS) codes. The Federal government creates standard NAICS codes for classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. The survey classified several NAICS codes as green (see list in Appendix A).

The survey found wide variations by sector in the percentage of workplaces engaged in the clean economy. The sector with the most workplaces producing green goods and providing green services is construction, with 42% of workplaces participating in the clean economy. Construction companies are followed by companies in the professional, scientific, or technical services sector at 29%, the wholesale trade sector at 24%, and the waste management sector at 21%.

Variations in using green technologies and practices are less dramatic across sectors. In most sectors surveyed, between 50% and 65% of companies report using green technologies or practices, led by wholesale trade at 67%. One notable exception was workplaces in the other services sector (or NAICS code 81), of which only 39% reported using a green technology or practice.

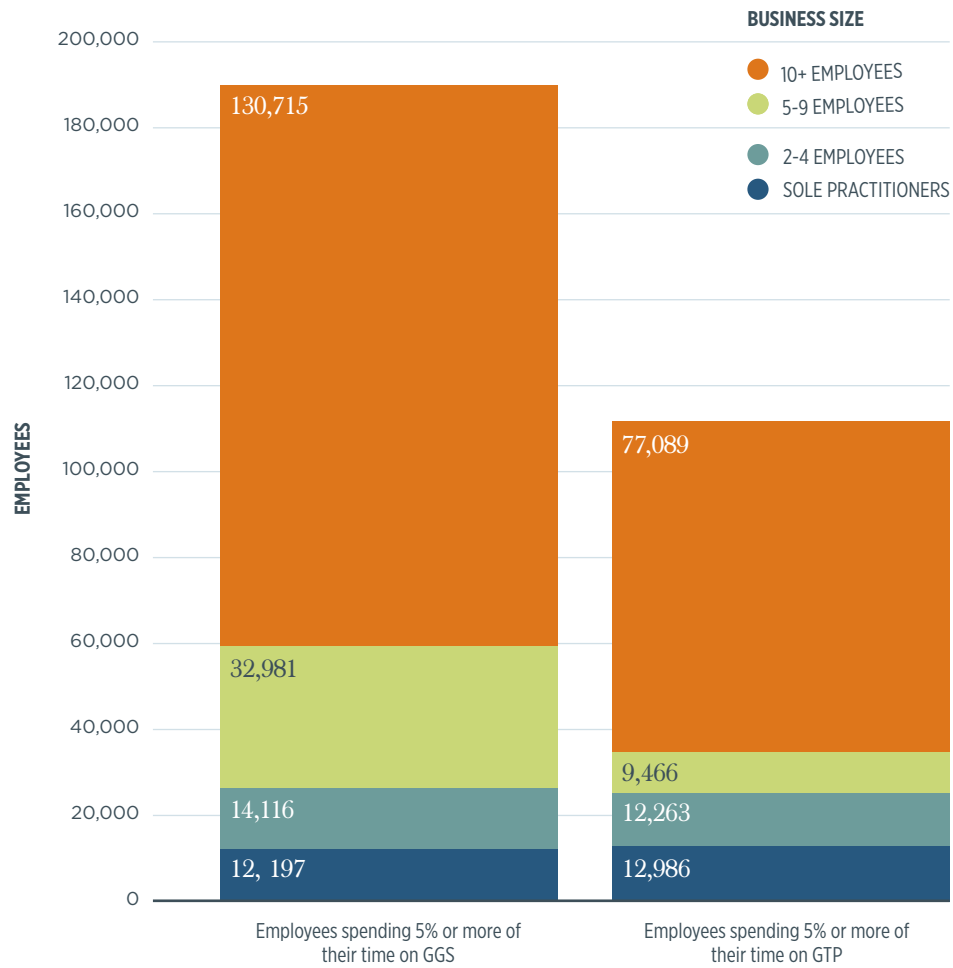
CLEAN ECONOMY WORKPLACES BY SECTOR



### Business Size

Unlike BLS and PA L&I, MOS surveyed sole practitioners to test the hypothesis that they would be active participants in the clean economy. Both the GGS and GTP surveys found that participation in the clean economy increases as business size increases.

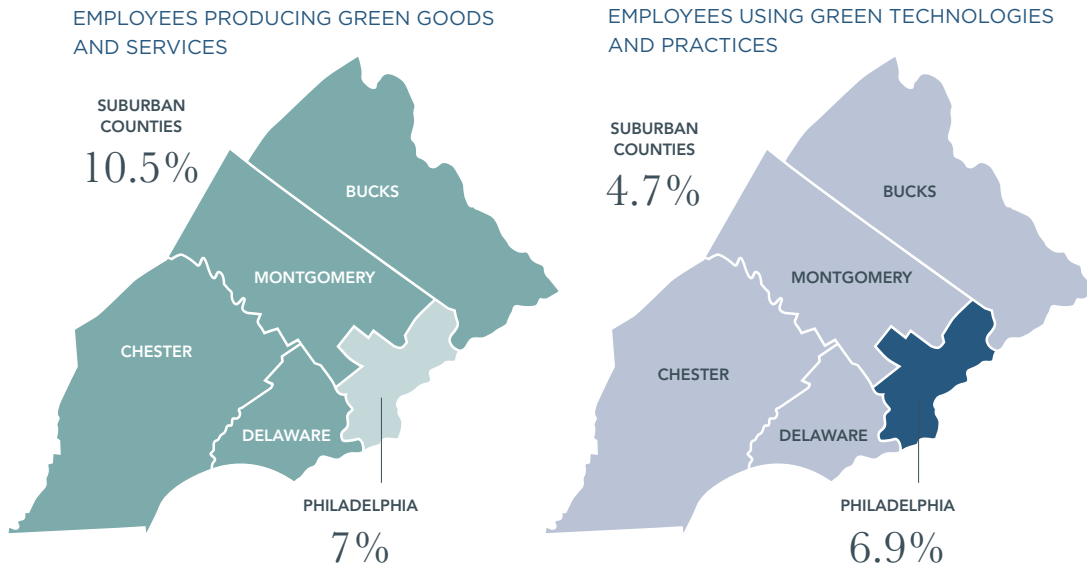
EMPLOYEES PRODUCING GREEN GOODS AND SERVICES AND USING GREEN TECHNOLOGIES AND PRACTICES IN THE PHILADELPHIA REGION





### Geographic Distribution

While participation in the clean economy did not vary significantly between Philadelphia and the suburban counties, businesses in Philadelphia have a slightly higher rate of employing green technologies and practices, while businesses in the suburban counties have a slightly higher rate of producing green goods and providing green services.



	NUMBER OF EMPLOYEES PRODUCING GREEN GOODS AND SERVICES	PERCENT OF ALL EMPLOYEES PRODUCING GREEN GOODS AND SERVICES	NUMBER OF EMPLOYEES USING GREEN TECHNOLOGIES AND PRACTICES	PERCENT OF ALL EMPLOYEES USING GREEN TECHNOLOGIES AND PRACTICES
<b>PHILADELPHIA</b>				
Employees spending more than 5% of their time	36,441	5.2%	36,501	5.2%
Employees spending 50% or more of their time	12,681	1.8%	12,079	1.7%
Total Philadelphia employees producing green goods and services	49,122	7.0 %	48,580	6.9 %
<b>SUBURBAN COUNTIES</b> (Bucks, Montgomery, Delaware and Chester)				
Employees spending 5% or more of their time	99,347	7.4%	44,031	3.3%
Employees spending 50% or more of their time	41,546	3.1%	19,170	1.4%
Total Suburban employees producing green goods and services	140,893	10.5 %	62,201	4.7%
<b>PHILADELPHIA REGION</b>				
	<b>190,065</b>	<b>9.3%</b>	<b>111,781</b>	<b>5.5%</b>

### MOST COMMON GREEN GOODS AND SERVICES IN GREATER PHILADELPHIA



#### RECYCLING



#### POLLUTION MITIGATION



#### EDUCATION AND TRAINING

## Conclusions

**THE MOST COMMON GREEN GOODS AND SERVICES PROVIDED IN GREATER PHILADELPHIA ARE RECYCLING, POLLUTION MITIGATION, AND EDUCATION AND TRAINING, WHICH ALL FALL INTO THE SERVICES SECTOR.** The region can highlight this strong sector as an attraction tool for additional green service providers. The results also indicate that the region has an opportunity to grow the number of green goods producers.

The MOS survey gathered data on the private sector, but the public sector is an important clean economy participant. Information on public sector work in the clean economy, for instance at SEPTA and the Philadelphia Water Department, would help workforce organizations make more informed clean economy decisions. Any future survey efforts should include this sector.

Another highlight was that for both GTP and GGS, NAICS codes that the survey categorized as “not green” participated in the clean economy at higher rates than NAICS codes categorized as “green.” This suggests that further investigation of the types of businesses participating in the clean economy could yield fruitful information and that participation in the clean economy is becoming common even among businesses that do not self-identify as sustainable.

The survey process identified methodology challenges and limitations. Collecting workforce data is expensive, and because the survey was grant funded, replicating it without securing additional resources will be difficult. A potential solution to minimize expense is to incorporate questions about the clean economy into existing workforce data collection efforts. The interesting information gleaned from the results indicates that despite the clean economy’s relatively small size, it is worthy of continued study.

The City of Philadelphia is committed to continuing efforts to understand the size and strength of this sector of our local economy and to encouraging its continued growth.



## APPENDIX A: NAICS Codes Sampled

NAICS	2 DIGIT NAICS DESCRIPTION	NAICS CLASSIFIED AS GREEN
11	Agriculture, Forestry, Fishing and Hunting	X
21	Mining, Quarrying and Oil & Gas Extraction	X
22	Utilities	X
23	Construction	X
31	Manufacturing (other non-green)	
32	Manufacturing	X
33	Manufacturing (other non-green)	
42	Wholesale Trade	X
45	Retail trade	X
48	Transportation and Warehousing	X
49	Transportation and Warehousing (other non-green)	
51	Information	
52	Finance and Insurance	
53	Real Estate and Rental and Leasing	X
54	Professional, Scientific, and Technical Services	X
55	Management of Companies and Enterprises	
56	Administrative & Support & Waste Management & Remediation Services	X
61	Educational Services	
62	Health Care and Social Assistance	
71	Arts, Entertainment, and Recreation	X
72	Accommodation and Food Services	
81	Other Services (Except Public Administration)	X
92	Public Administration - Administration of Environmental Quality Programs	X
92	Public Administration - Administration of Housing Programs, Urban Planning, and Community Development	X
92	Public Administration - Administration of Economic Programs	X



[www.phila.gov/green](http://www.phila.gov/green)



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