

Understanding the Green Economy



American Reinvestment and Recovery Act
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Understanding the Green Economy

What is California LMI Doing/Planning?

- Collaborate to expand knowledge
 - with federal/state/local research partners to review existing research and identify information gaps
 - with state and local partners to define workforce needs and support workforce development
 - with control entities and utilities responsible for bringing about climate change
- Respond to state and national information needs
 - Share knowledge across agencies and geographic areas
 - Host a shared “green web page” that addresses existing research, survey methods and tools; national, state and local activities; legislation; See our page at <http://www.labormarketinfo.edd.ca.gov/?pageid=1032>
- Survey California businesses to establish baselines of green employment and green business practices
- Conduct and publish career research to support workforce development

National Partnerships and Learning

- National Workforce Information Council (WIC) **Green Jobs Study Group.** WIC commissioned the Green Jobs Study Group
 - Define and recommend methods for measuring green jobs
 - Eight states including California, BLS, O*NET
 - (Not as easy as it sounds...)

- See Study Group reports.
 - Workforce Information Council web site “green jobs page”
<http://www.workforceinfocouncil.org/GreenJobs.asp>
 - Final report of the Workforce Information Council Green Jobs Study Group
<http://www.workforceinfocouncil.org/Documents/WICGreenJobsStudyGroupReport-2009-10-01t.pdf>

Department of Labor Learning

- **Occupational Information Network (O*NET)**

Green Economy Sector

<http://online.onetcenter.org/find/green>

- **Bureau of Labor Statistics (BLS)** plans to study the green economy include

- Industry survey adapted from Quarterly Census of Employment and Wages (QCEW) Annual Refiling Survey
- Occupational survey adapted from Occupational Employment Statistics (OES) survey
- Develop career information materials
- Beginning in 2010- 2011

WIC Green Jobs Study working definition

A green job is one in which the **work is essential** to products or services that improve energy efficiency, expand the use of renewable energy, or support environmental sustainability. The job involves work in any of these green economic activity categories:

- *Renewable Energy and Alternative Fuels*
- *Energy Efficiency and Conservation*
- *Pollution, Waste, and Greenhouse Gas (GHG) Management, Prevention, and Reduction*
- *Environmental Cleanup and Remediation and Waste Clean-up and Mitigation*
- *Sustainable Agriculture and Natural Resource Conservation*
- *Education, Regulation, Compliance, Public Awareness, and Training and Energy Trading*

Tie to Recovery Act Funding

- Smart Grid Transmission Lines
- Renewable Energy
- Energy Efficiency
- Weatherization

Recommended Strategy: Prepare dislocated workers for reemployment careers in these areas as appropriate

Green Industries tied to Recovery Act (Examples)

Energy

- Public and Private Utilities
- Power Generation plants (electric, hydroelectric, other fuels)
- Power Transmission
- Power Distribution
- Power and communication line construction

Construction

- Residential, commercial, industrial, remodeling
- Glazing contractors
- Roofing contractors

Manufacturing

- Various sectors—lighting, appliance, motor and generator, storage batteries, motor vehicle, semiconductors
- Automatic environmental controls

Moving unemployed into green jobs

“Re-skilling” (just a sampling...)

- **Professional** (BA or Advanced degree): architects, cost estimators, engineers, planners, vocational education teachers
- **Skilled workers** (AA or post secondary education): auto, bus and truck mechanics, biological and chemical technicians
- **Crafts and Trades** workers (OJT—varying durations): assemblers, carpenters, electricians, plumbers, HVAC, insulation/weatherization

New Resources and Opportunities

- Employment and Training Administration Green Economy **LMI Improvement Grant Competition**
- Notified in mid November that our proposal would be funded. Planned activities include:
 - Analyzing the results of our green employer survey currently being conducted
 - Conducting green occupational skills research;
 - Improving skills transference by evaluating occupational skill assessment tools, defining the relationships between assessment results and occupational characteristics, and automating the connection of these results to available labor market information;
 - Creating an online statewide green training inventory; and
 - Improving electronic information delivery through enhancements to the Labor Market Information Division's information technology infrastructure.

California Labor Market Information's Working Definition of Green

Green jobs produce (“supply”) goods or services that result in:

- **G**enerating and storing renewable energy
- **R**ecycling existing materials
- **E**nergy efficient product manufacturing, distribution, construction, installation, and maintenance
- **E**ducation, compliance and awareness
- **N**atural and sustainable product manufacturing

For the complete definition see:

<http://www.labormarketinfo.edd.ca.gov/contentpub/GreenDigest/Californias-Draft-Definition-Green-Industries.pdf>

Sustainable Practices Increase Demand

Important caveat...

- LMID's definition focuses on the "supply" side
- Sustainable business practices (the "demand" side) are equally important to California's green economy
- Demand leads to increased pressure for additional supply of products and services
- Survey covers "supply" and "demand" separately

Green Economy Survey Details

- First mailing in May 2009
- Over 50,000 businesses across the California economy; all industries, all sizes, all areas
- 5.2M employment in surveyed firms
- Goal is to create a baseline measure of
 - Number of workers in green or clean product manufacturing and/or services
 - Number of businesses that have adopted green practices
 - Emerging occupations for further study related to skills and workforce needs
- Partnering with Community Colleges, Air Resources Board, California Energy Commission, California Workforce Investment Board, Economic Strategy Panel, Employment Training Panel, and others

California's Preliminary Survey Responses

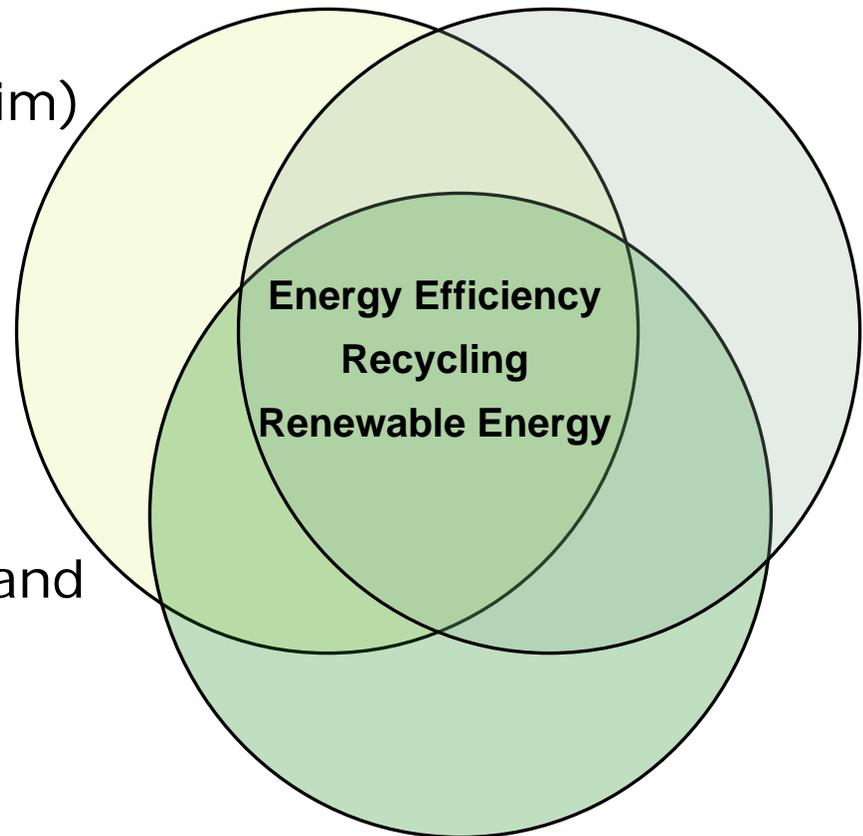
- About 13,000 employers have responded
- 9.2 percent of employers report employees working on green products and services
- About 3.7 percent of all workers are working on green products and services
- About two-thirds of green workers spend more than half time on green aspects of job
- 62 percent of employers report using at least one green business practice
- Almost 80% of current green workers were trained on the job
- About 8% of employers in our initial sample have gone out of business during this difficult time in our economy

Comparison to Other States' Recent Green Workforce Surveys?

Green as a percent of total employment

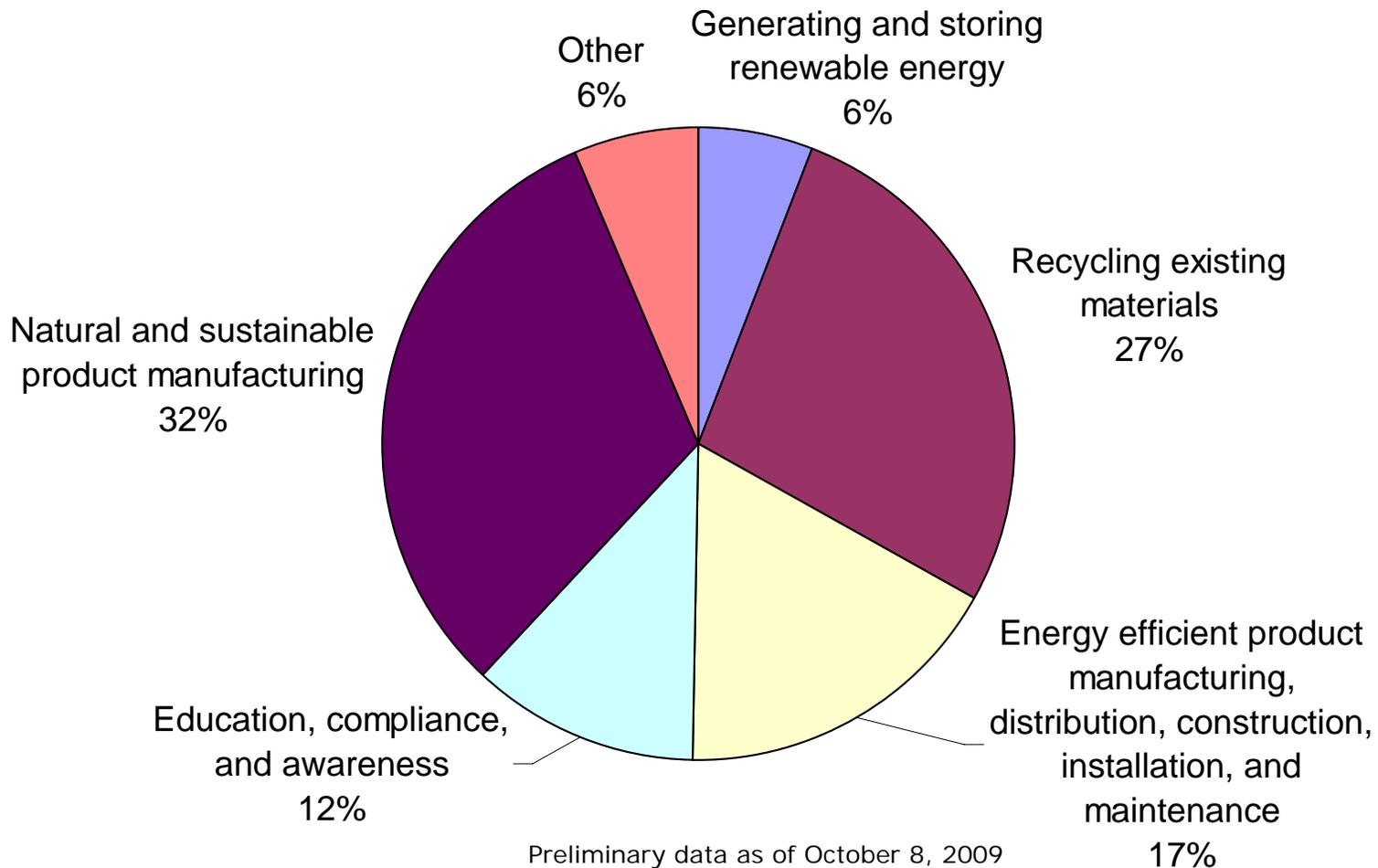
California	3.7 % (Prelim)
Washington	1.6 %
Oregon	3.0 %
Michigan	3.0 %

- Caveat...Definitions vary somewhat between states...
- Renewable energy, recycling, and energy efficiency are in each states definition



Green Workers Reported

Total Green Employment Reported by Category



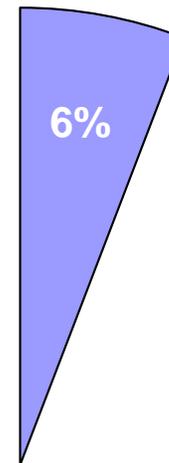
Generating and storing renewable energy

■ Top industries

- Professional and Business Services
- Utilities
- Wholesale Electronic Markets and Agents

■ Top occupations

- Architects, Except Landscape
- Alternative Energy Engineers
- Electrical Engineers
- Heating and Air Conditioning Technicians and Installers
- Wastewater Technicians and Operators
- Plumbers, Pipefitters, and Steamfitters
- Solar Photovoltaic Panel Installers and Technicians
- Air Quality Engineers; Air Pollution Specialists; Air Resources Engineers
- Building Performance or Retro-Fitting Specialists
- Electricians



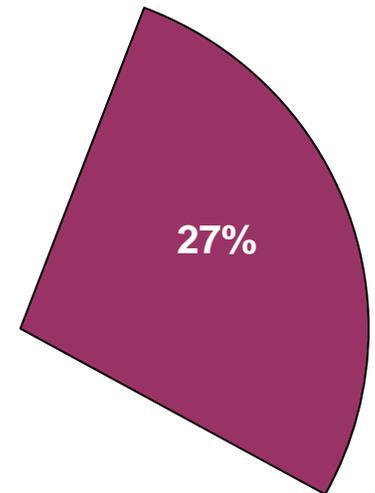
Recycling existing materials

□ Top industries

- Merchant Wholesalers, Durable Goods
- Waste Management and Remediation
- Educational Services
- Fabricated Metal Product Manufacturing
- Professional and Technical Services

□ Top occupations

- Recycling Center Operators
- Assemblers
- Hazardous Materials Removal Workers
- Heating and Air Conditioning Technicians and Installers
- Wastewater Technicians and Operators
- Construction Managers
- Sustainable Farmers and Farm workers
- Industrial Production Managers
- Plumbers, Pipefitters, and Steamfitters
- Air Quality Engineers; Air Pollution Specialist; Air Resource Engineers



Preliminary data as of October 8, 2009

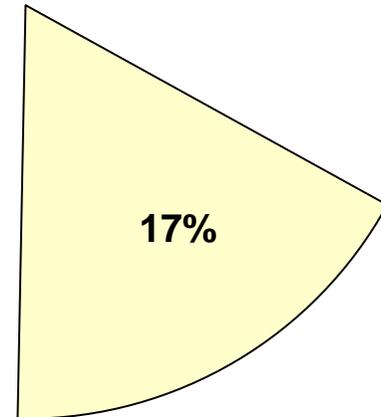
Energy efficient product manufacturing

■ Top industries

- Specialty Trade Contractors
- Computer and Electronic Product Manufacturing
- Construction of Buildings
- Professional and Technical Services
- Management of Companies and Enterprises

■ Top occupations

- Assemblers
- Heating and Air Conditioning Technicians and Installers
- Electricians
- Architects, Except Landscape
- Carpenters
- Construction Managers
- Energy Auditors, Home and Commercial
- Hazardous Materials Removal Workers
- Building Performance or Retro-Fitting Specialists
- Plumbers, Pipefitters, and Steamfitters



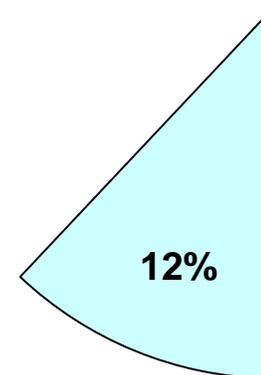
Education, compliance and awareness

■ Top industries

- Professional and Technical Services
- Educational Services
- Food Services and Drinking Places
- Membership Associations and Organizations
- Utilities

■ Top occupations

- Assemblers
- Plumbers, Pipefitters, and Steamfitters
- Heating and Air Conditioning Technicians and Installers
- Architects, Except Landscape
- Electricians
- Construction Managers
- Carpenters
- Alternative Energy Engineers
- Wastewater Technicians and Operators
- Environmental Engineers



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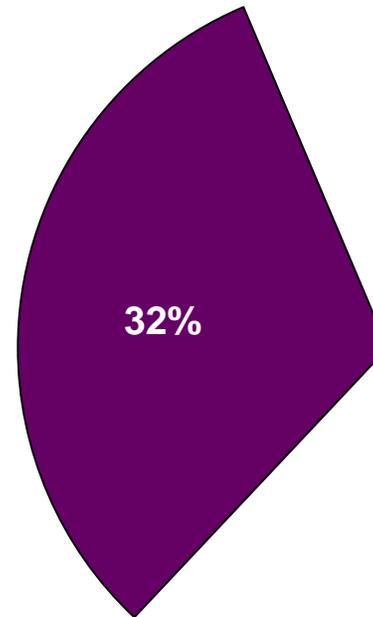
Natural and sustainable product mfg

■ Top industries

- Crop Production
- Food Manufacturing
- Paper Manufacturing
- Fabricated Metal Product Manufacturing
- Nonmetallic Mineral Product Manufacturing

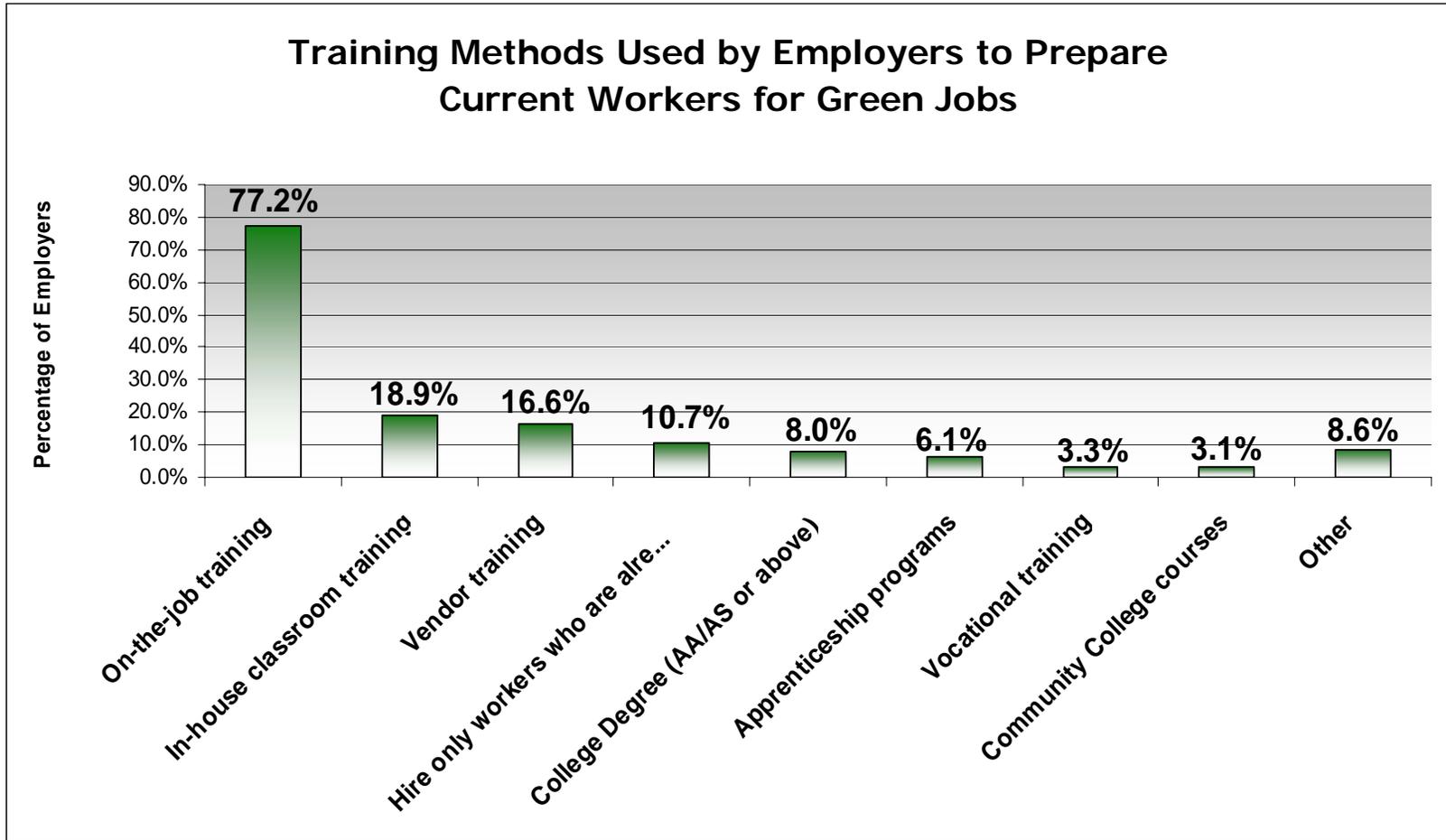
■ Top occupations

- Sustainable Farmers and Farmworkers
- Assemblers
- Recycling Center Operators
- Carpenters
- Biomass Collectors
- Industrial Production Managers
- Biological Technicians
- Construction Managers
- Soil and Plant Scientists
- Hazardous Materials Removal Workers



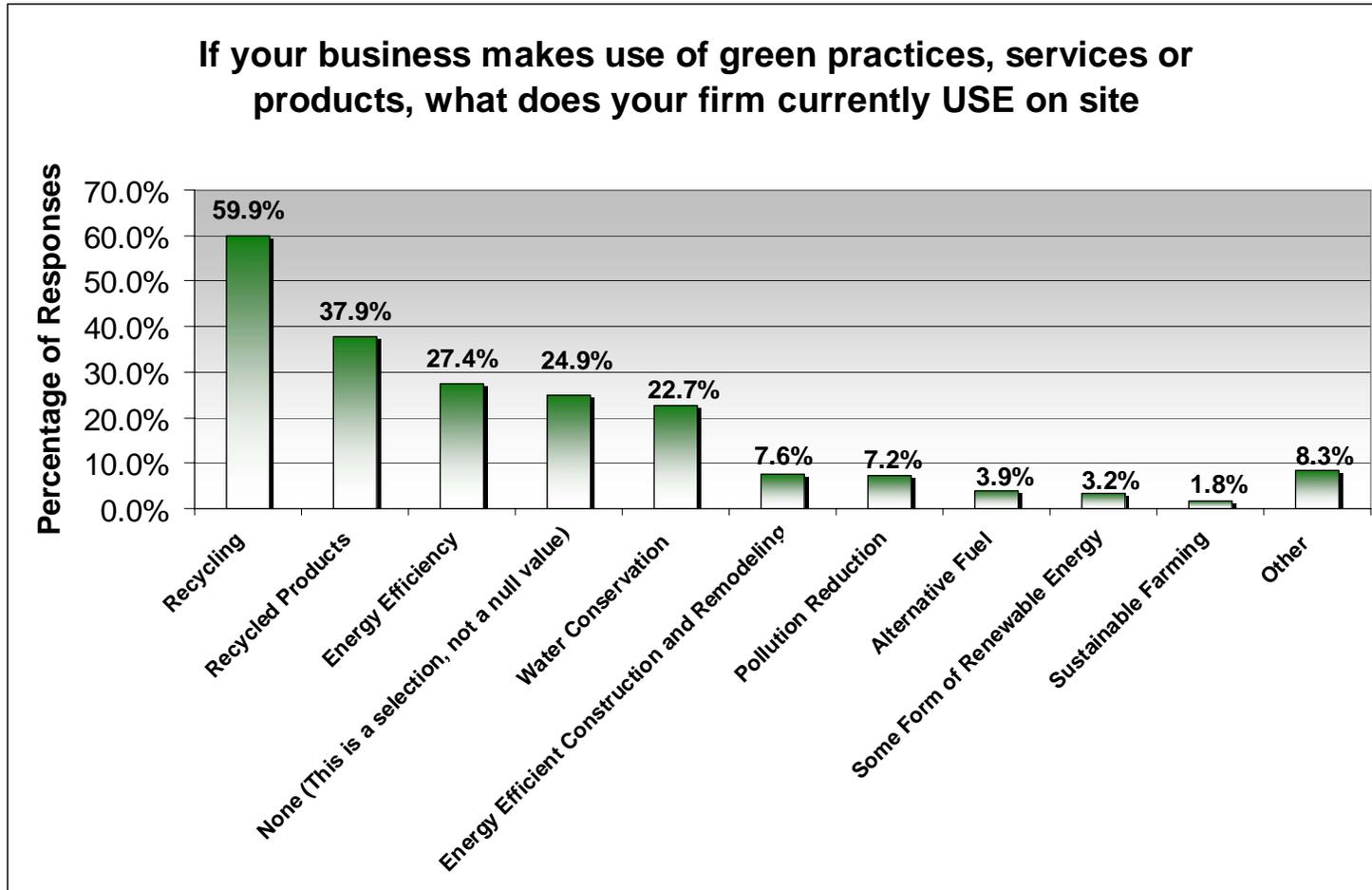
Preliminary data as of October 8, 2009

Preparation of Current Green Workers – OJT!



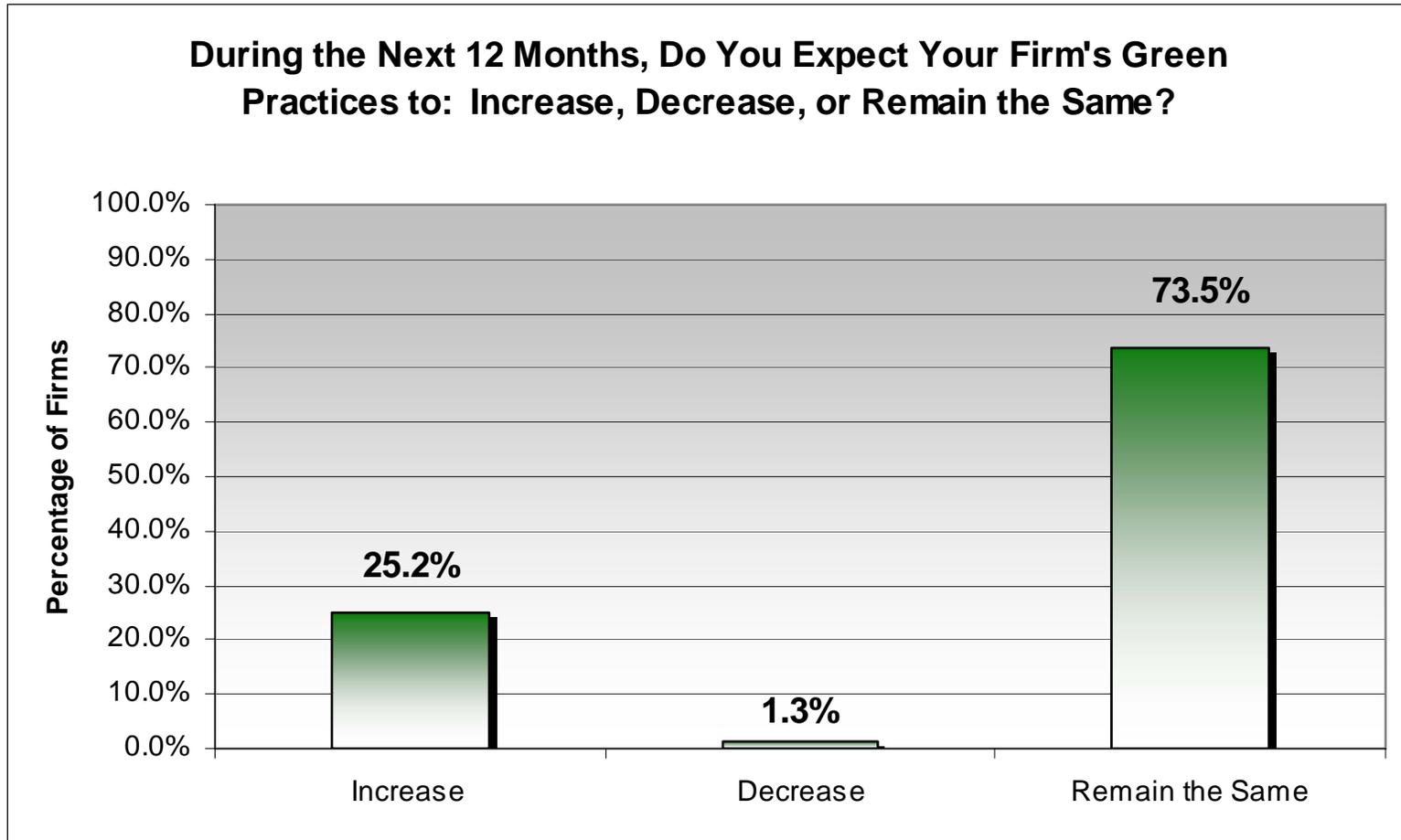
Preliminary data as of October 8, 2009

Sustainable Practices – Current



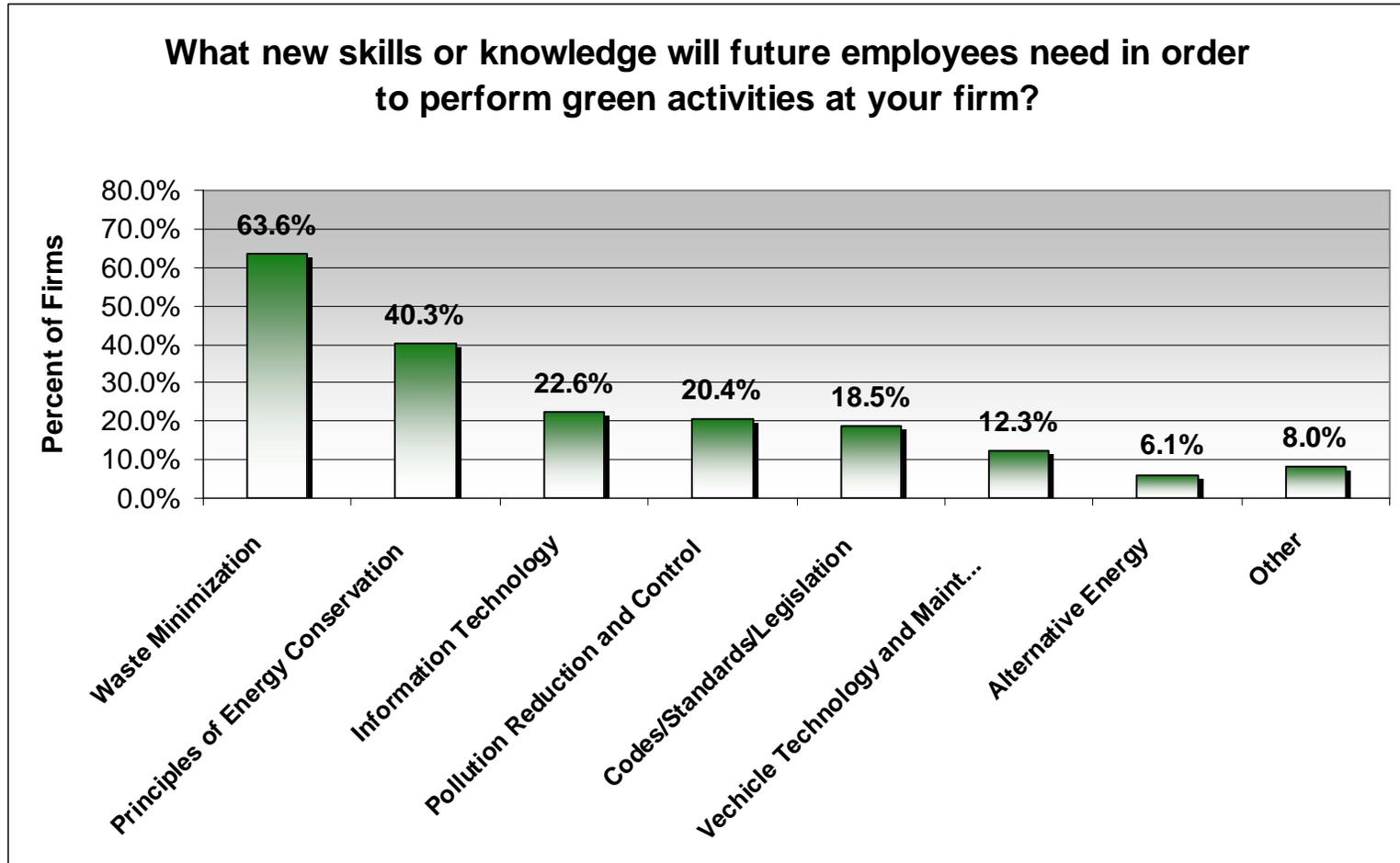
Preliminary data as of October 8, 2009

Sustainable Practices – Expectations



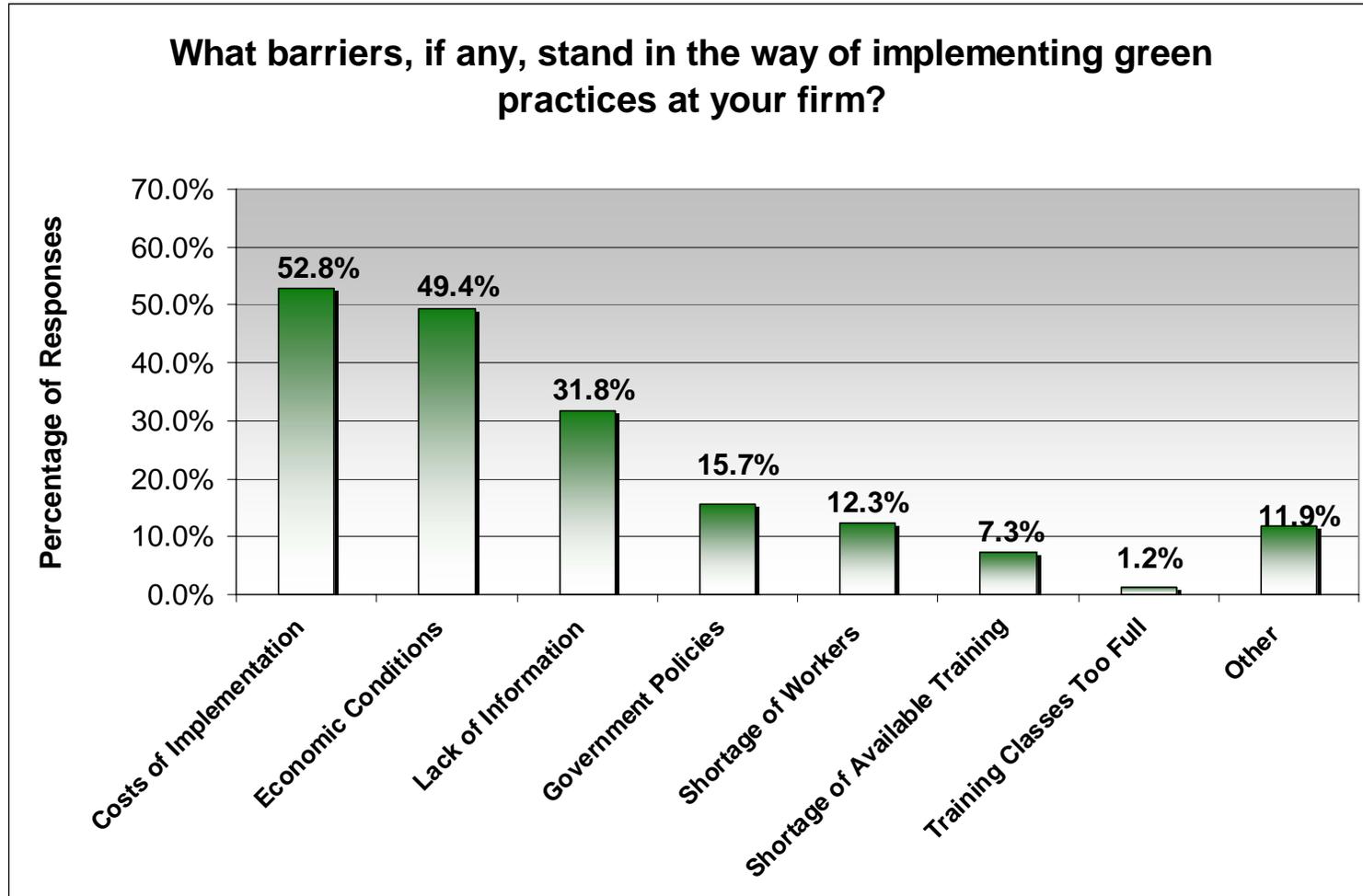
Preliminary data as of October 8, 2009

Sustainable Practices – Skill Needs



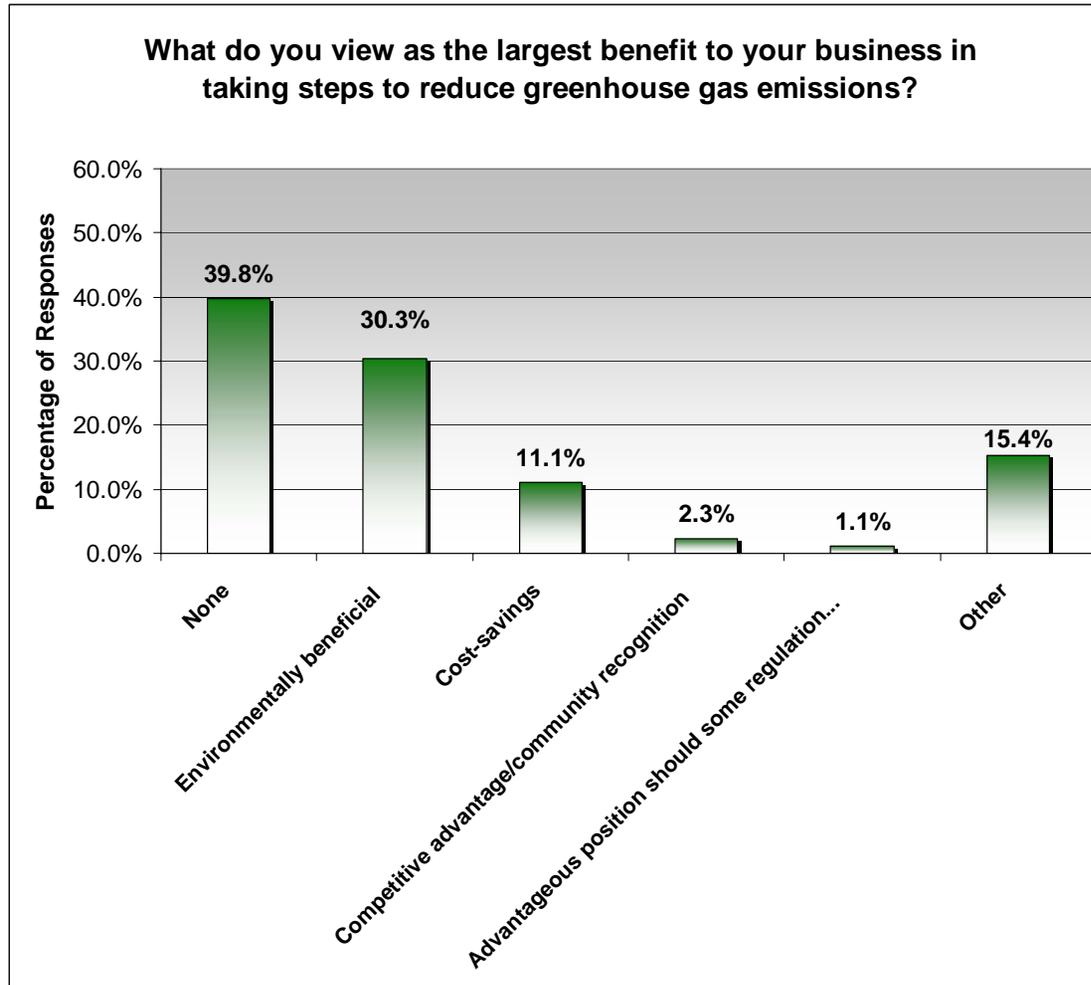
Preliminary data as of October 8, 2009

Sustainable Practices – Barriers



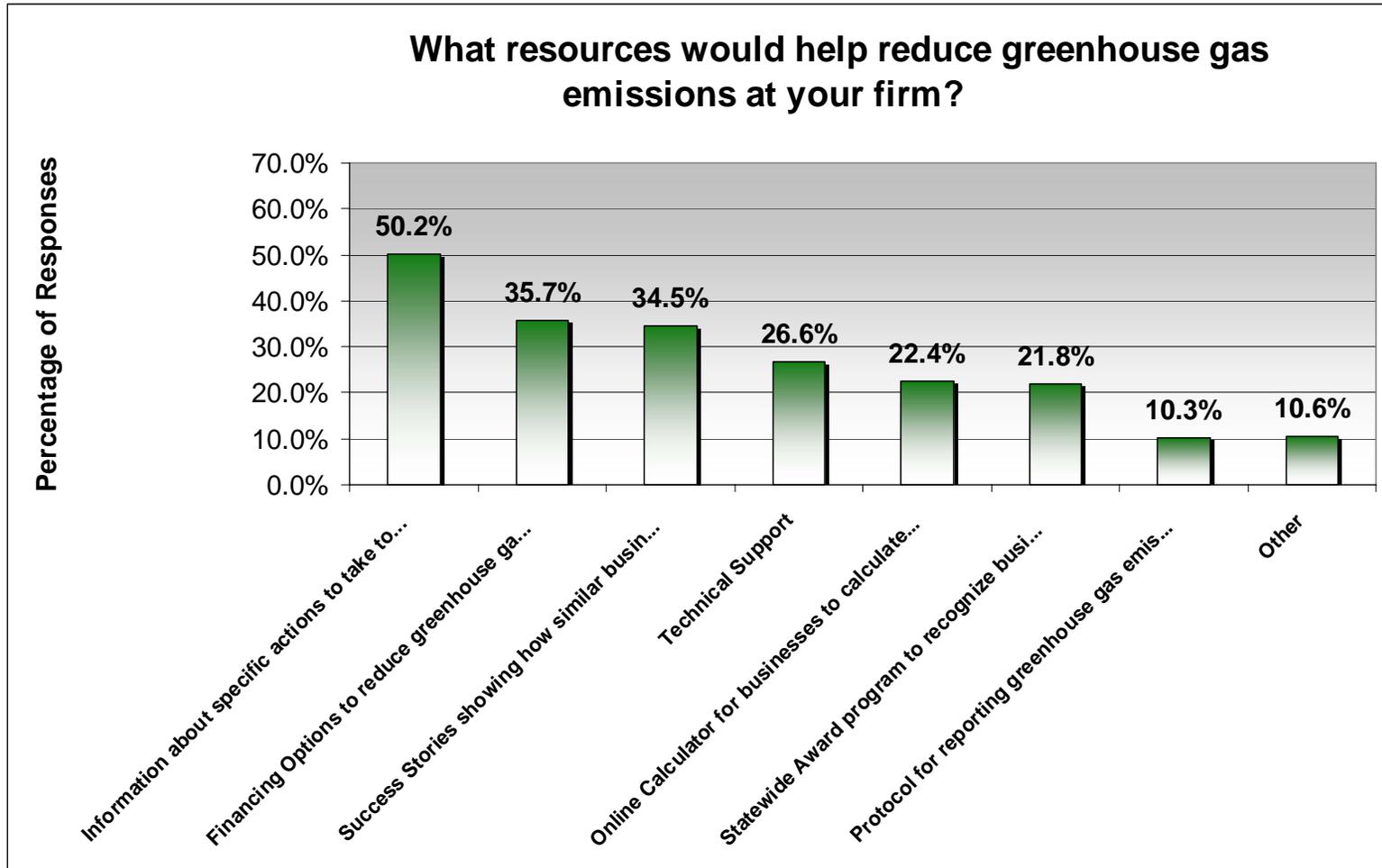
Preliminary data as of October 8, 2009

Sustainable Practices – Benefits



Preliminary data as of October 8, 2009

Sustainable Practices – Resources



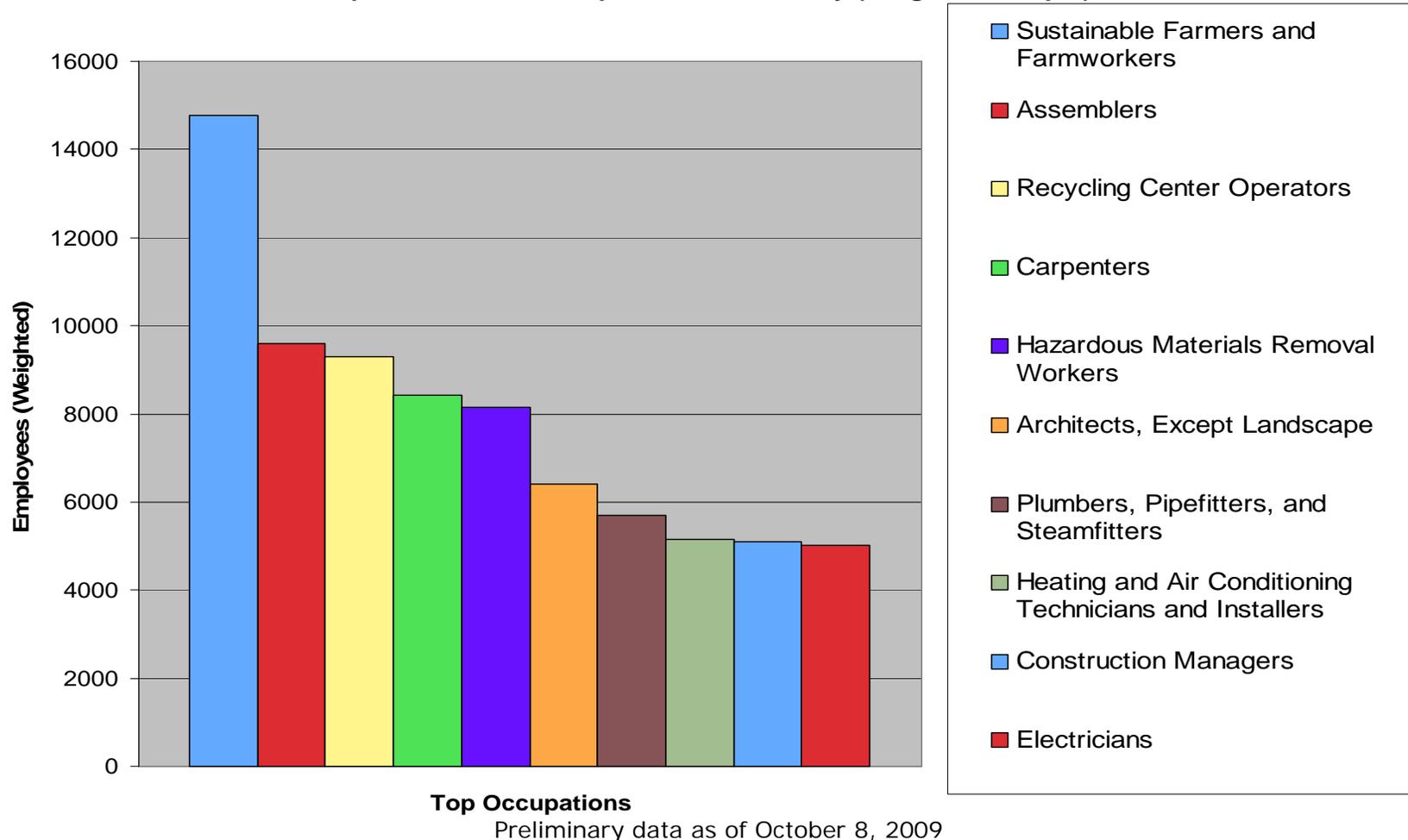
Preliminary data as of October 8, 2009

Preliminary Occupational Findings

- Employers categorized **127,800 green employees within the 34 green jobs** described on the survey. An additional 15,600 workers were reported under “Other Green Job Titles”
- **Write ins–include:**
 - Janitors and Cleaners,
 - Sustainability Assistants,
 - LEED Accredited Professionals,
 - Mobile Heavy Equipment Mechanics (maintaining electric forklifts),
 - Recyclers (reprocessing on site materials)
- Greater detail will be collected in a subsequent occupational skills survey.

Survey respondents' top green jobs—Farmers, Assemblers, Recyclers, Carpenters ...

Top 10 Green Jobs Reported - Preliminary (Weighted Sample)



Top Surveyed Green Jobs

OES median wage* by training level

□ High skill—BA or higher

- Architect \$81,105
- Construction Manager \$101,354

□ Skilled—2 years of education or training

- Carpenters \$51,839
- Electricians \$53,314
- *Farmers, Sustainable (emerging)* \$94,164
- Plumbers \$50,643
- HVAC Technicians \$46,625

□ Up to one year training

- Assemblers \$23,959
- *Farm Workers, sustainable (emerging)* \$23,476
- HAZMAT workers \$40,520
- *Recycling Center Operators (emerging)* \$39,678

*Source: 2009 Occupational Employment Statistics. Not a green survey wage!

Next Steps

- Complete data collection
- Analyze complete data
- Review findings with key players
- Prepare summary report, with regional distinctions as warranted by the data
- Prepare industry level reports
- Detailed occupational follow-up surveys and analysis
- Report on occupational skills and workforce development needs

Questions? Thank you!

Feel free to get in touch

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