

# California's Green Economy



Innovating the Green Economy

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# Understanding the Green Economy

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## 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

# Our Working Definition of Green

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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>

Preliminary data as of October 8, 2009

# Sustainable Practices Increase Demand

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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

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- 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

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- Over 15,000 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

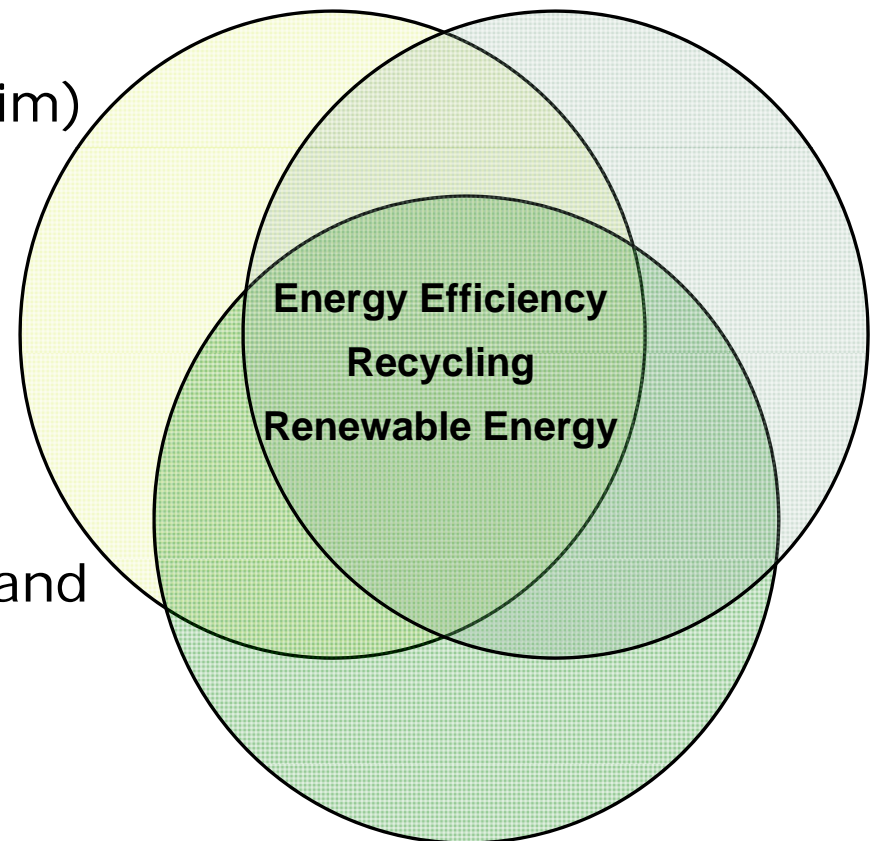
Preliminary data as of October 8, 2009

# 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 %

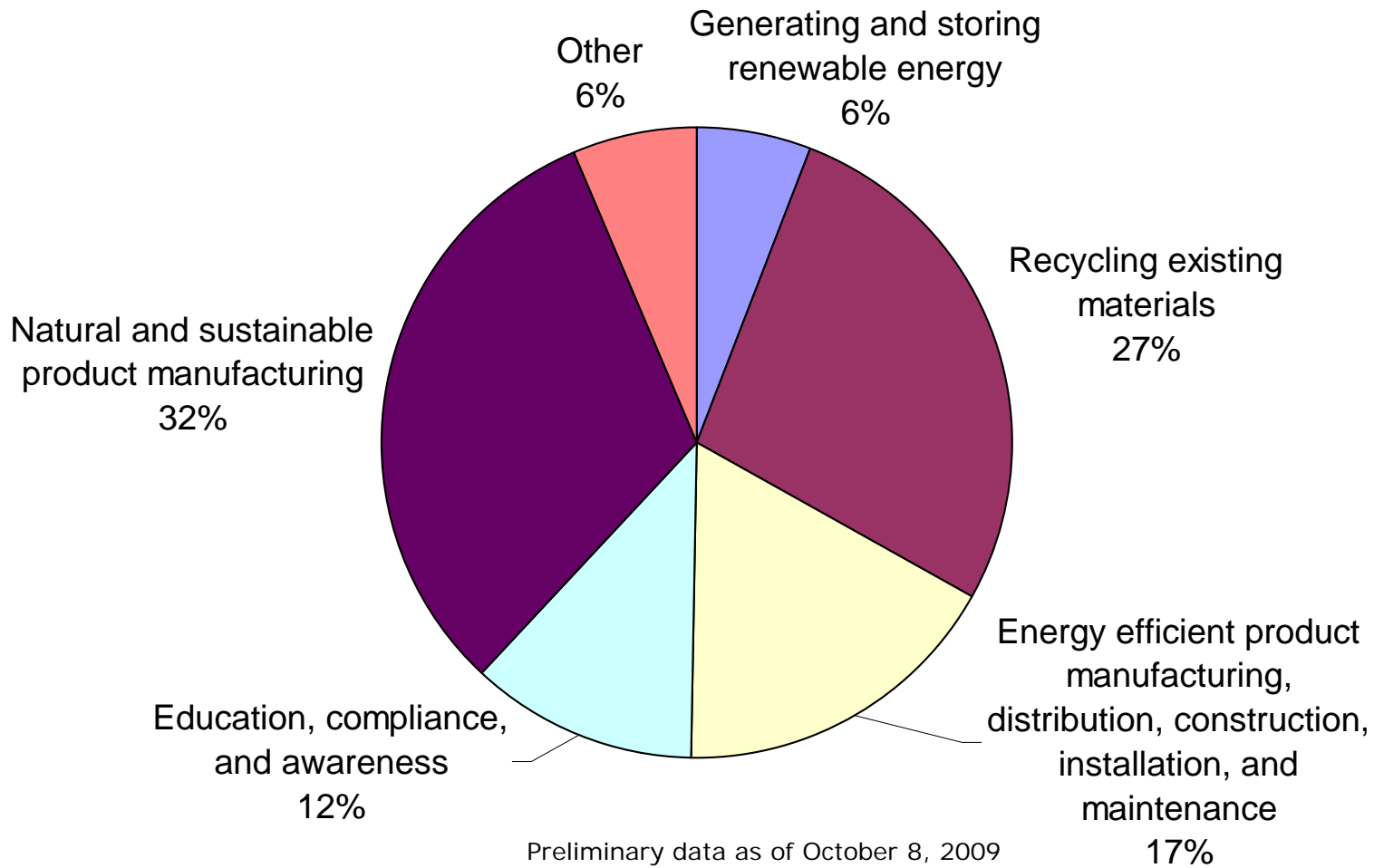
- Caveat...Definitions vary somewhat between states...
- Renewable energy, recycling, and energy efficiency are in each states definition



Preliminary data as of October 8, 2009

# Green Workers Reported

Total Green Employment Reported by Category





# Generating and storing renewable energy

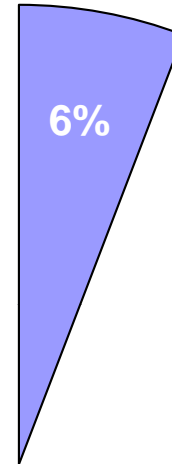
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## ■ Top industries

- 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



Preliminary data as of October 8, 2009

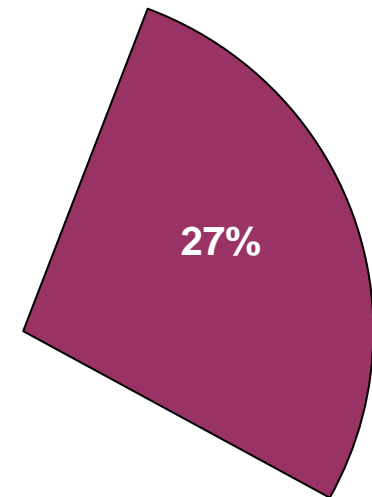
# Recycling existing materials

## □ 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

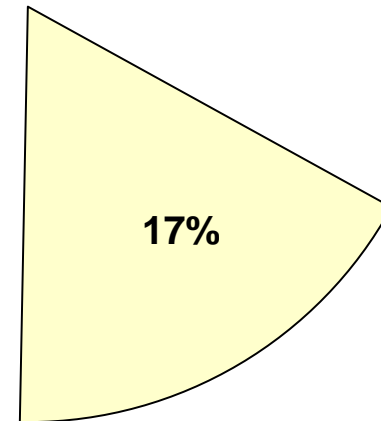
## ■ Top industries

- 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

Preliminary data as of October 8, 2009



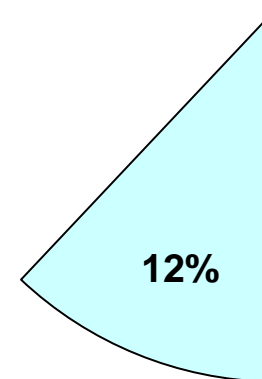
# Education, compliance and awareness

## ■ 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



Preliminary data as of October 8, 2009

# Natural and sustainable product mfg

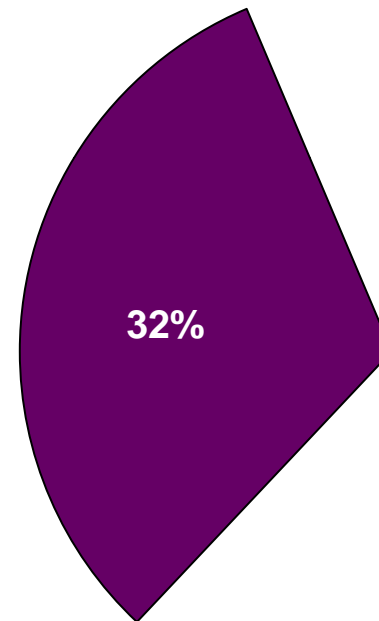
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## ■ Top industries

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

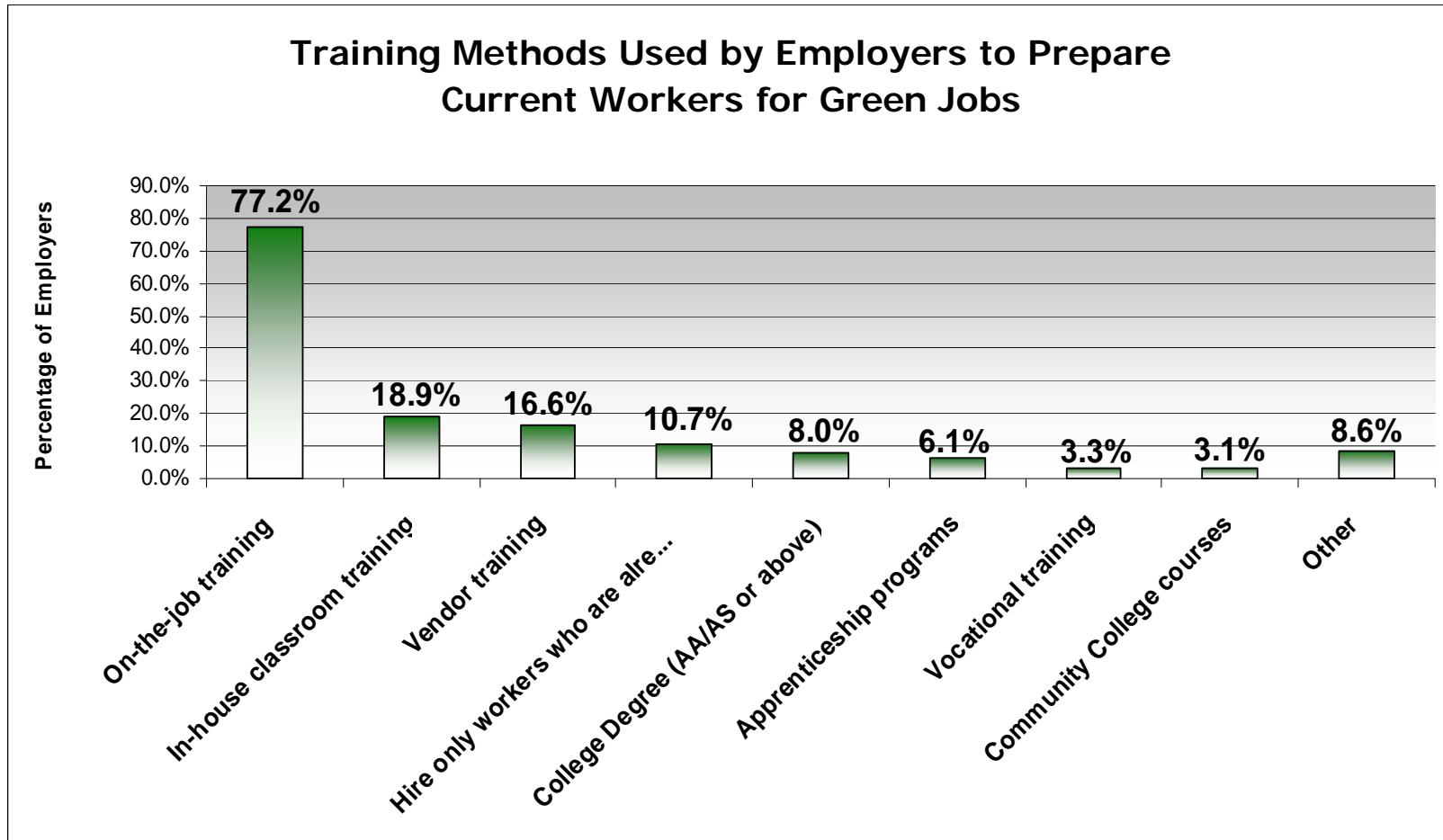
## ■ Top occupations

- 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



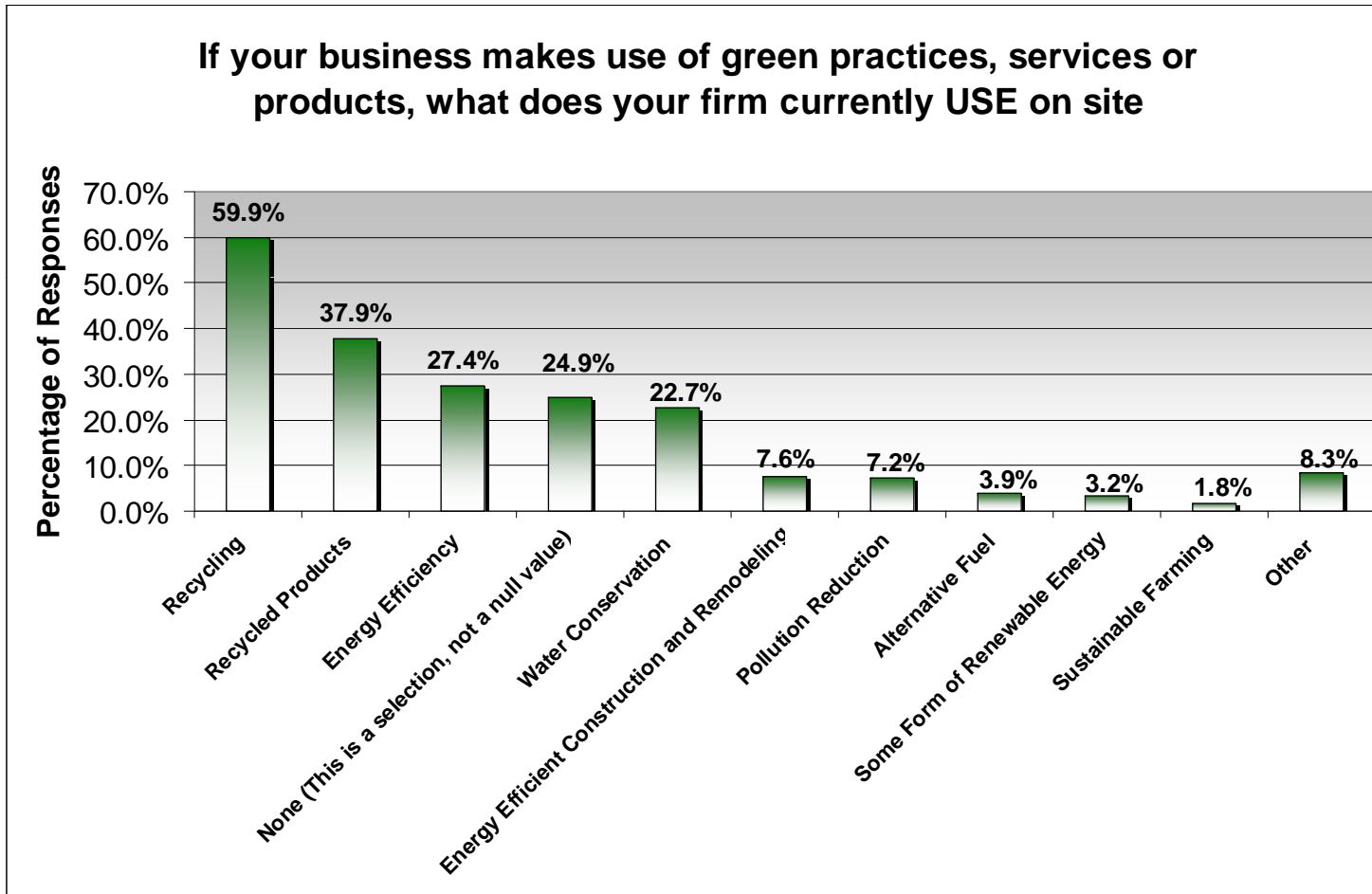
Preliminary data as of October 8, 2009

# Preparation of Current Green Workers – OJT!



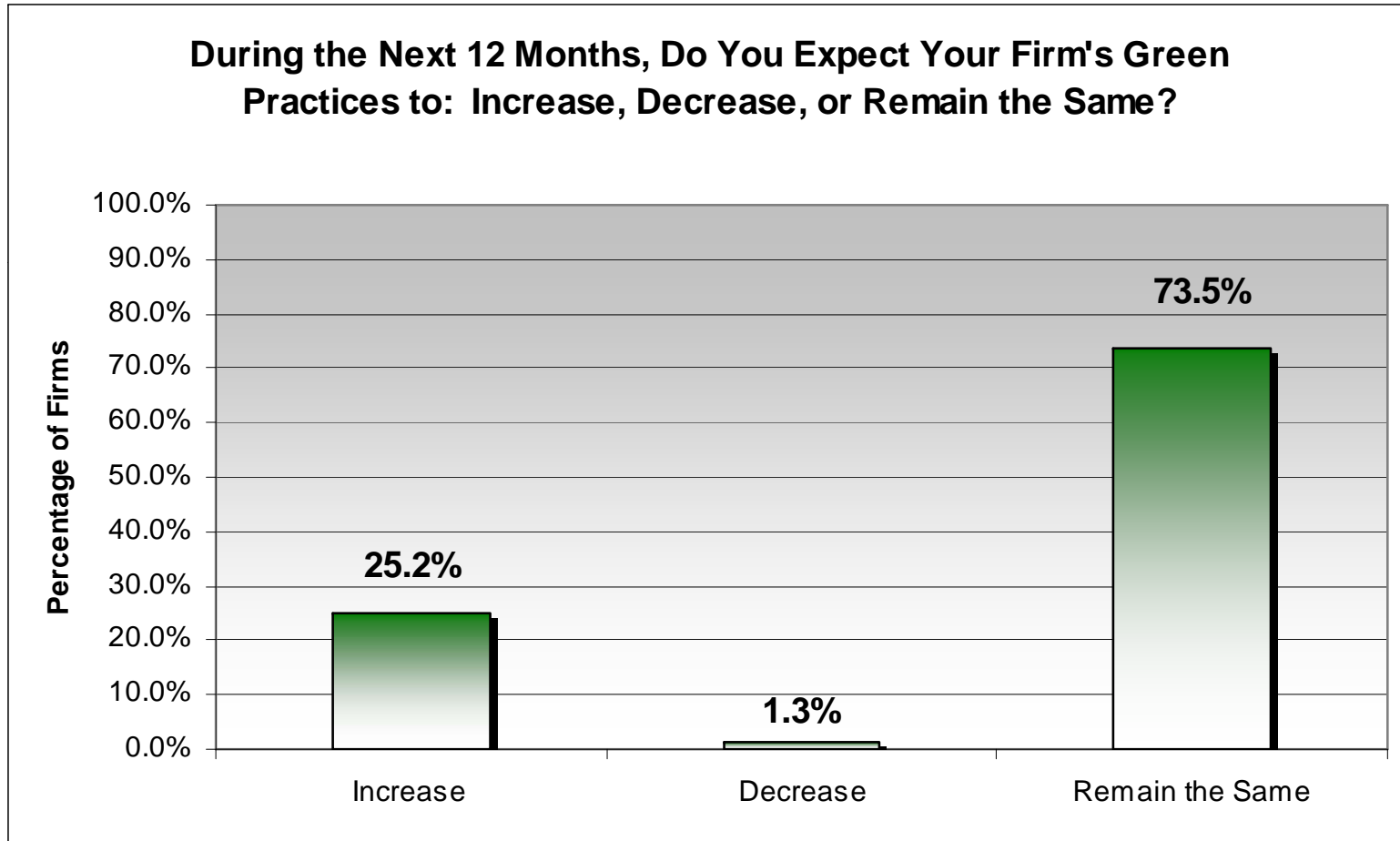
Preliminary data as of October 8, 2009

# Sustainable Practices – Current



Preliminary data as of October 8, 2009

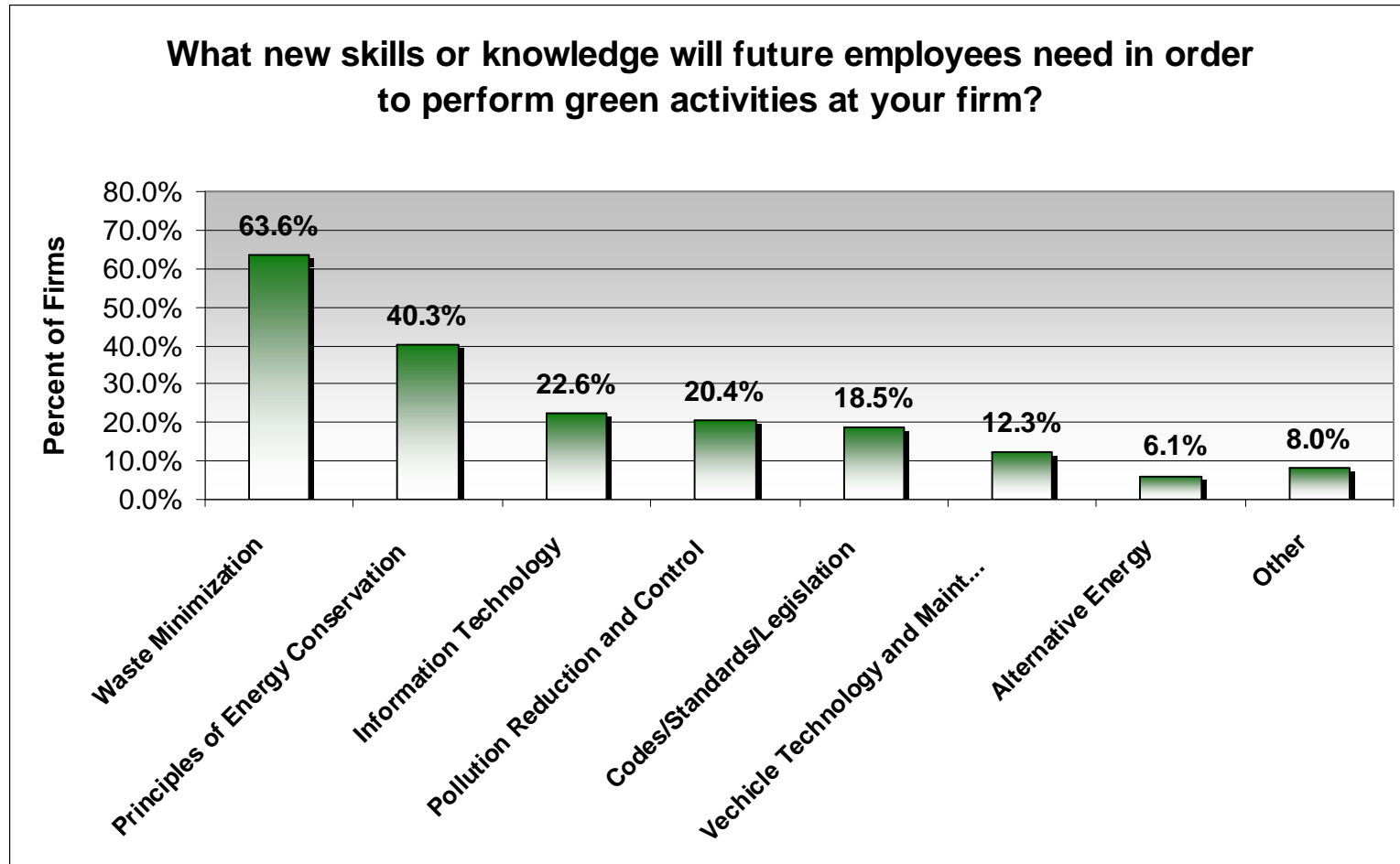
# Sustainable Practices – Expectations



Preliminary data as of October 8, 2009

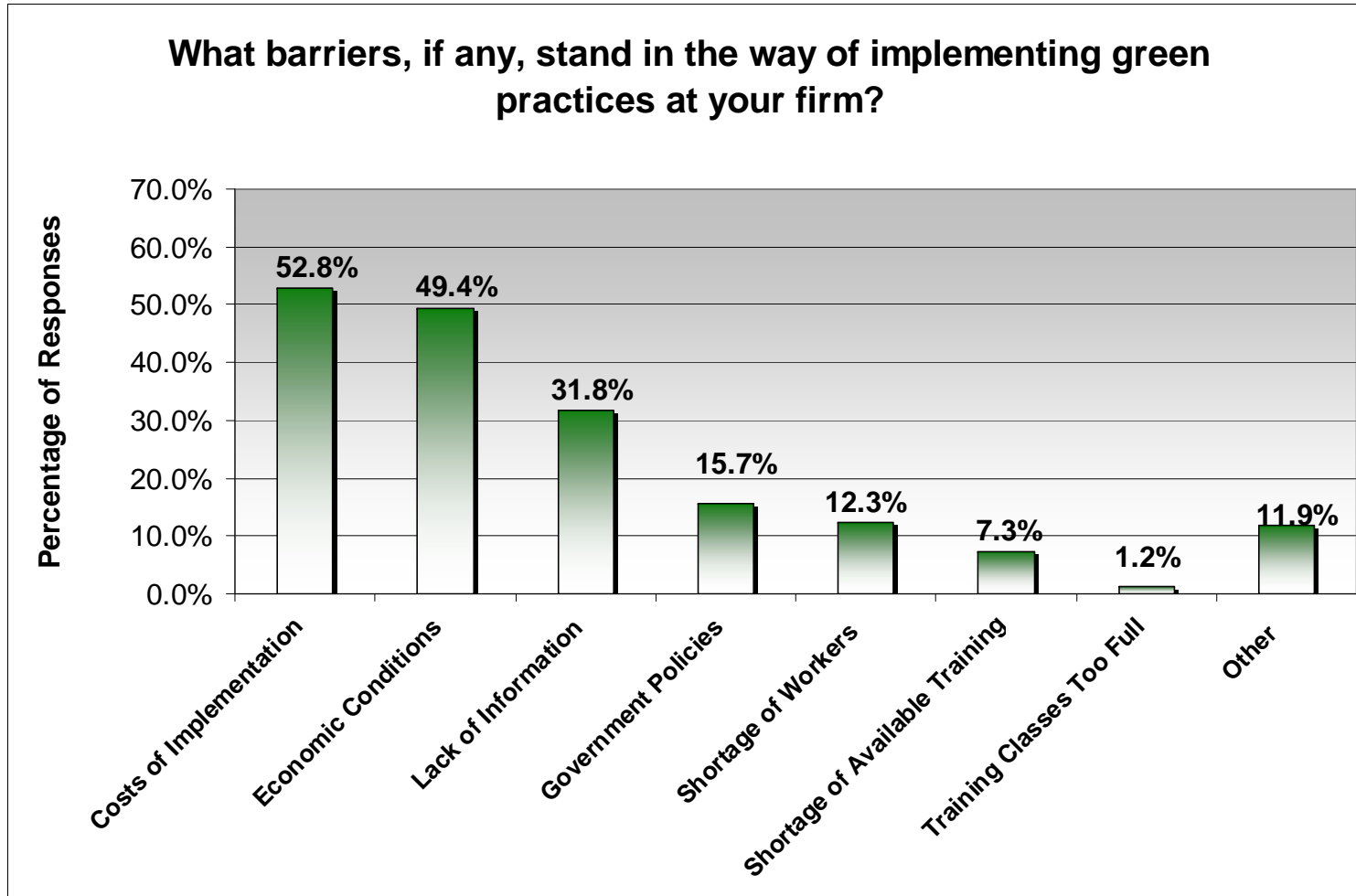


# Sustainable Practices – Skill Needs



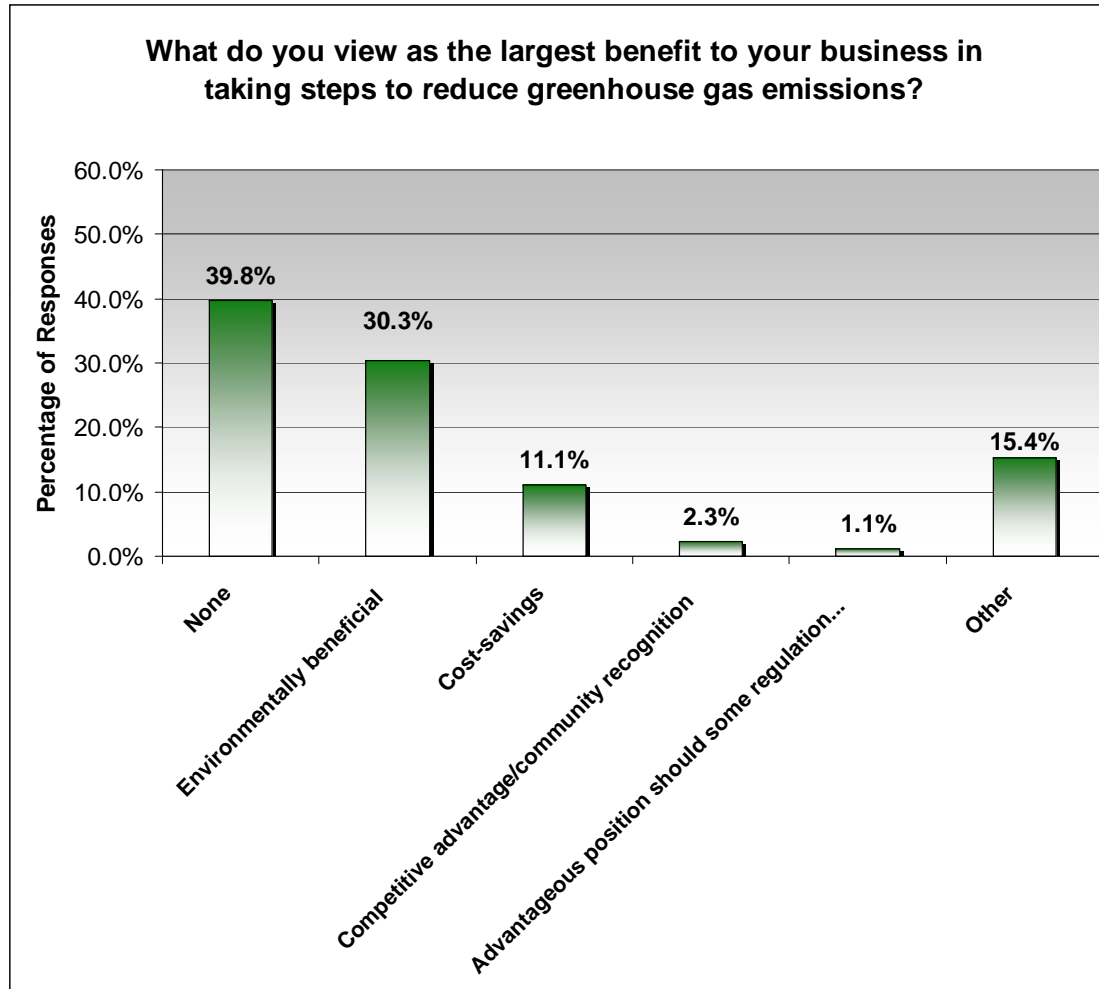
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# Sustainable Practices – Barriers



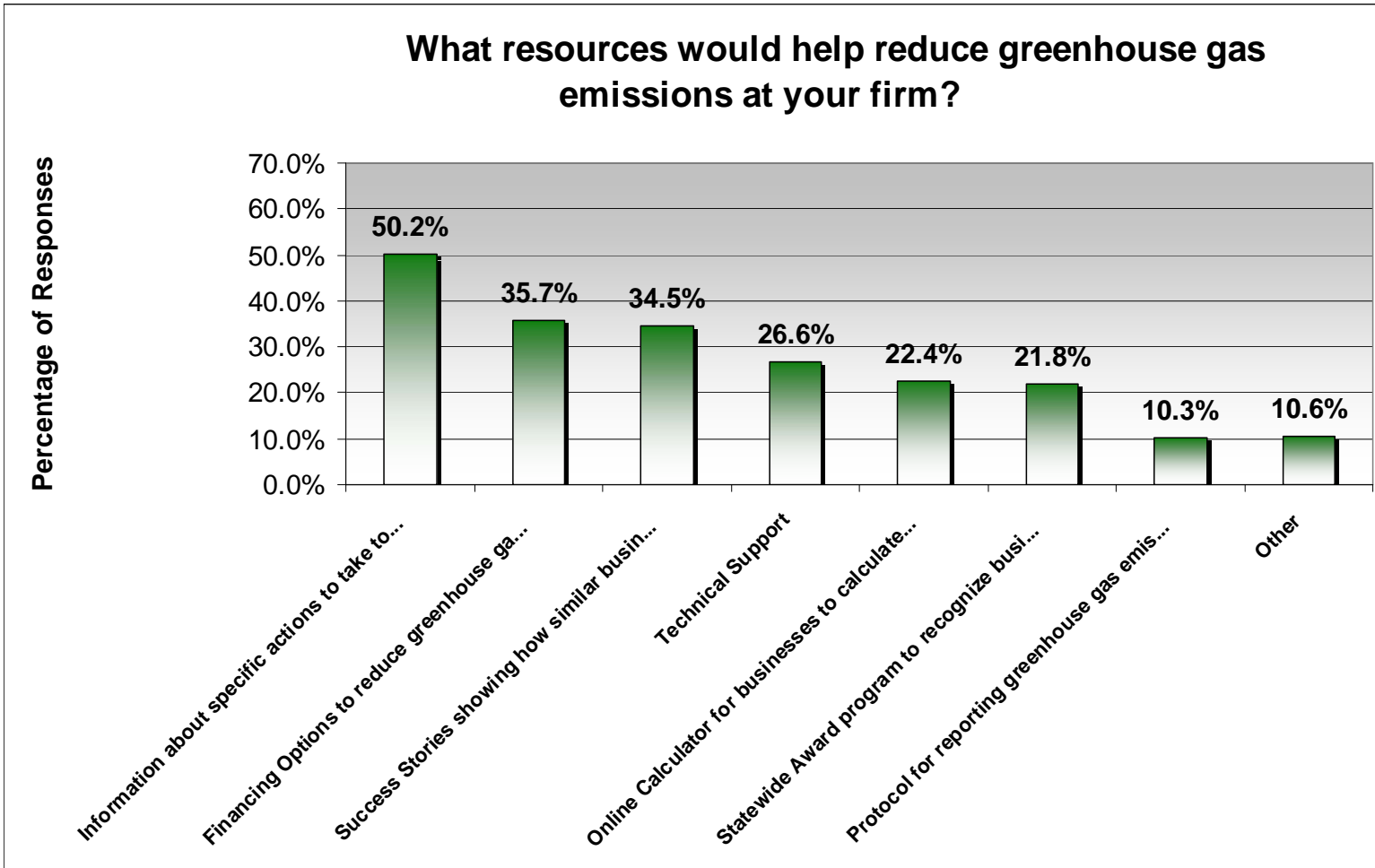
Preliminary data as of October 8, 2009

# Sustainable Practices – Benefits



Preliminary data as of October 8, 2009

# Sustainable Practices – Resources



Preliminary data as of October 8, 2009

# Preliminary Occupational Findings

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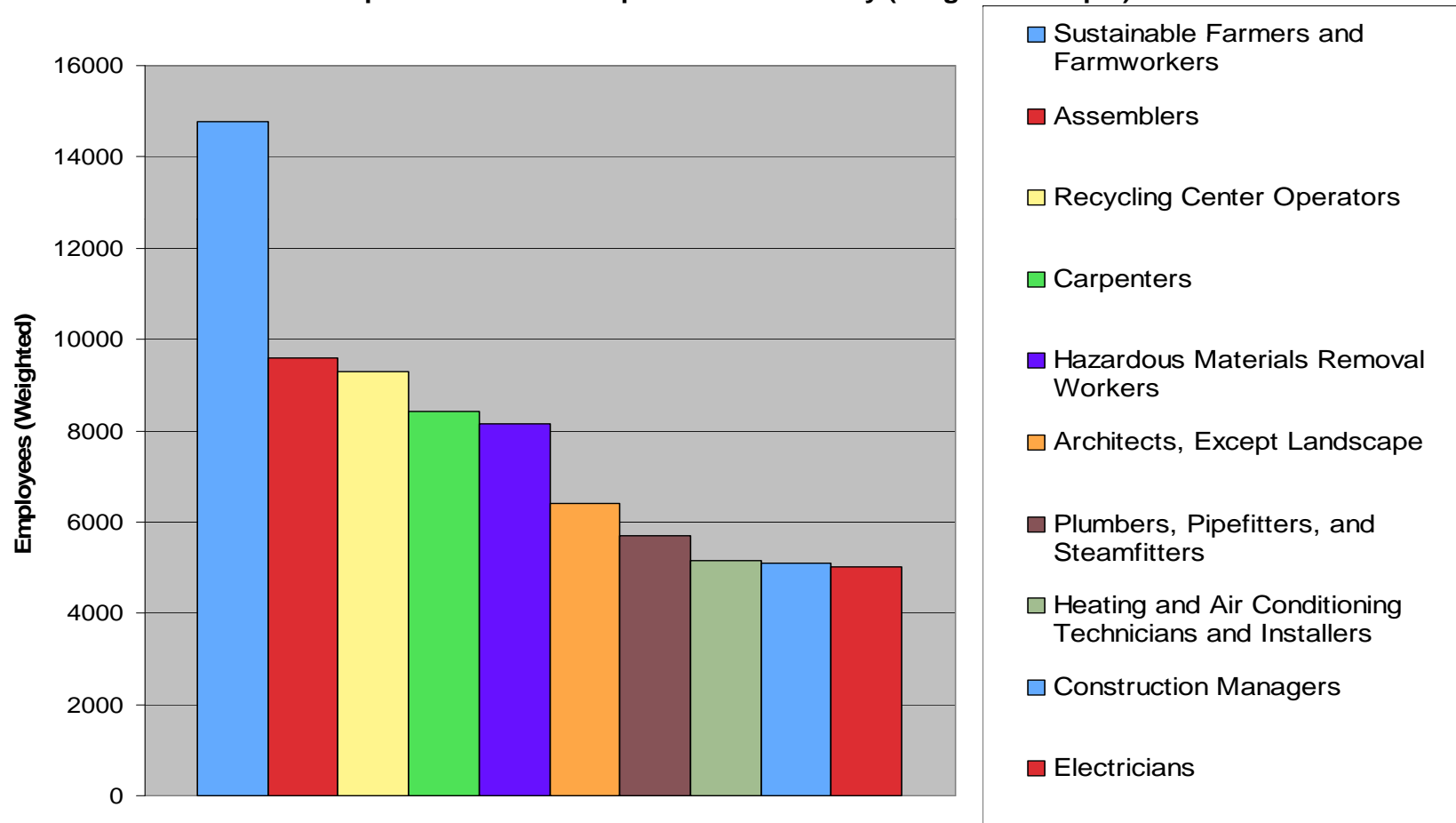
- Employers categorized **127,800 green employees within the 34 green jobs** described on the survey. An additional 15,600 workers were reported under about 300 “Other Green Job Titles”
- **Write ins–include:**
  - Janitors and Cleaners,
  - Sustainability Assistants,
  - LEED Accredited Professionals,
  - Mobile Heavy Equipment Mechanics (maintaining electric forklifts),
  - Recyclers (reprocessing on site materials)
- Greater detail will be collected in a subsequent occupational skills survey.

Preliminary data as of October 8, 2009

# Survey respondents' top green jobs...

## Farmers, Assemblers, Recyclers, Carpenters ...

Top 10 Green Jobs Reported - Preliminary (Weighted Sample)



Top Occupations

Preliminary data as of October 8, 2009

# Next Steps

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- 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!

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Feel free to get in touch

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# Top Surveyed Green Jobs

OES median wage\* by training level

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- **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!

# National Partnerships and Learning

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- National Workforce Information Council (WIC) **Green Jobs Study Group**
  - WIC commissioned the Green Jobs Study Group to define and recommend methods for measuring green jobs
  - Eight states including California, BLS, O\*NET (briefly)
  - (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

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

- “Green Economy Sector”

- Green enhanced skills
  - Green increased demand
  - New and emerging green occupations

- <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 Refile Survey
  - Occupational survey adapted from Occupational Employment Statistics (OES) survey
  - Develop career information materials
  - Beginning in 2010- 2011

# New Resources and Opportunities

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## Employment and Training Administration Green Economy **LMI Improvement Grant Competition**

- Notified in mid November 2009 that our state proposal would be funded. Planned activities include:
  - Analyzing and publishing the results of our green employer survey
  - 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.