

California's Green Economy



LMI Advisory Group
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Bonnie Graybill,
Deputy Division Chief
Labor Market Information Division

Understanding the Green Economy

What is California LMI Doing/Planning?

- Responding to state and national information needs
 - See our “green web page” at <http://www.labormarketinfo.edd.ca.gov/?pageid=1032>
- Collaborating 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
- Surveying California businesses to establish baselines
- Publishing career research to support workforce development

Our Working Definition of Green

Green or clean is any activity or service that performs at least one of the following:

- **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 of the economy, on businesses that produce products or service directly related to the functions described in this GREEN definition.
- ❑ Entities that have adopted sustainable business practices (the "demand" side) are equally important to California's green economy.
- ❑ Demand leads to increased pressure for additional supply.
- ❑ Sustainable business practices might include (but not limited to) entities that have adopted renewable energy, efficiency and conservation strategies.

Tie to Recovery Act Funding for “Green Activities”

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

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

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
- Collecting information on:
 - 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

Preliminary Survey Responses

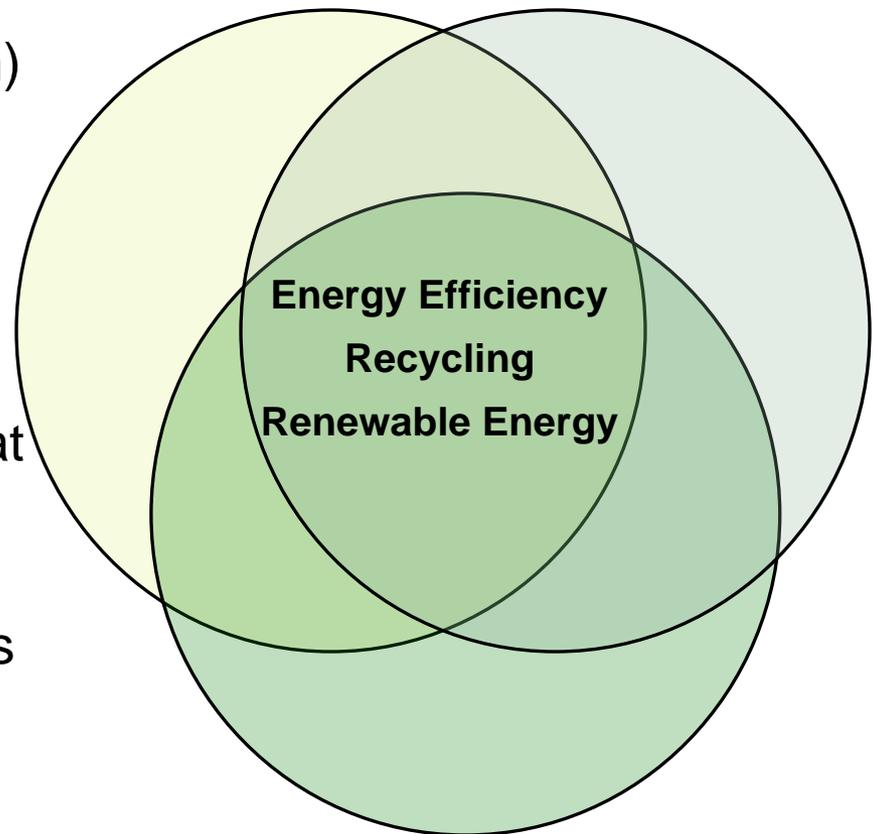
- Over 9,000 employers have responded, representing over 140,000 businesses and 3 million workers in California
- 9.2 percent of employers report employees working on green products and services
- About 3.7 percent of all workers are working on green products and services
- About two-thirds of green workers spend more than half time on green aspects of job
- 62 percent of employers report using at least one green business practice

Comparison to Other States' Recent Green Workforce Surveys?

Green as a percent of total employment

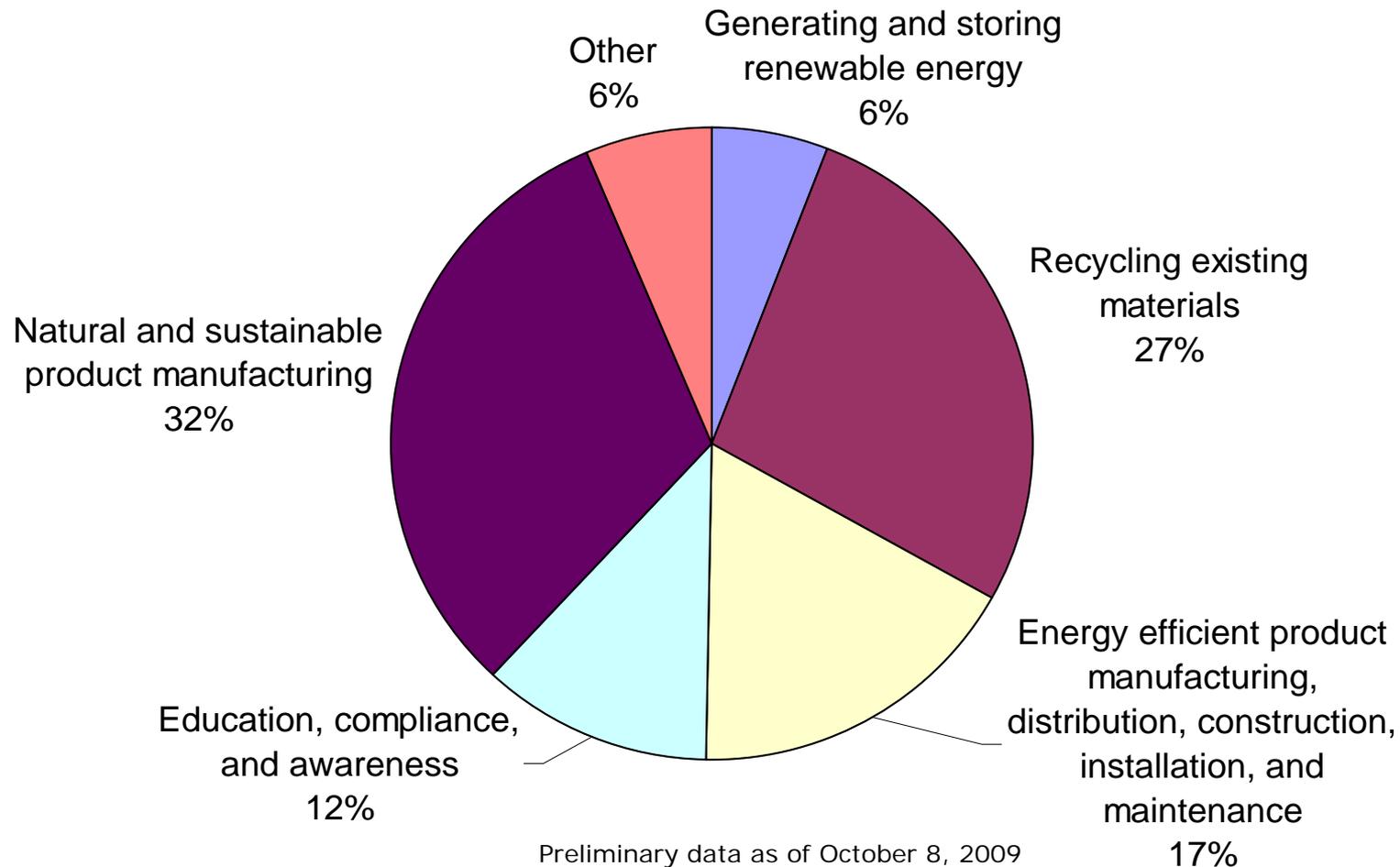
California	3.7 % (Prelim)
Washington	1.6 %
Oregon	3.0 %
Michigan	3.0 %

- 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



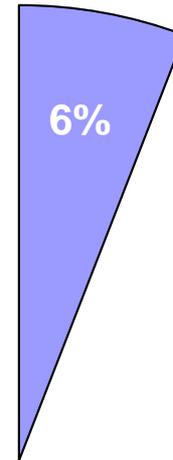
Generating and storing renewable energy

■ 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



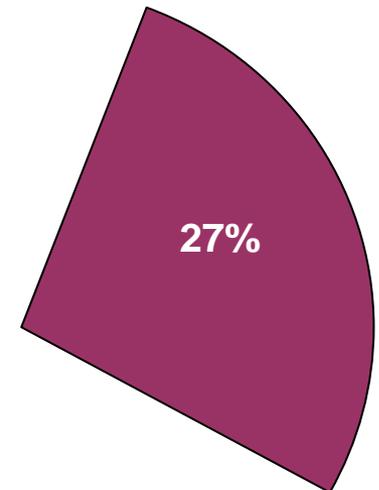
Recycling existing materials

□ 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

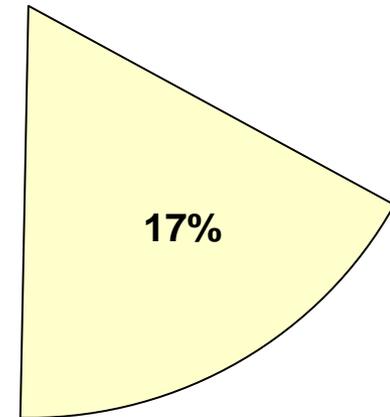
Energy efficient product manufacturing

■ 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



Preliminary data as of October 8, 2009

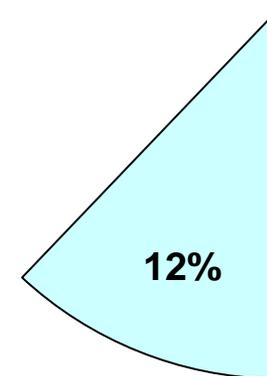
Education, compliance and awareness

■ 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



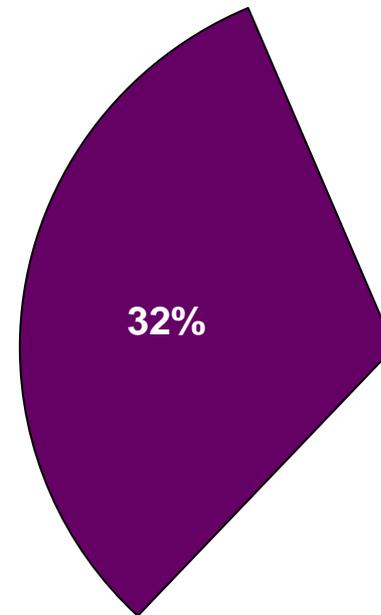
Natural and sustainable product mfg

■ 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

What Industries are green?

- An initial analysis by the Bureau of Labor Statistics identified 62 six-digit NAICS codes as green.
- In a similar analysis LMID identified 121 six-digit NAICS codes as green using our definition.
- Surveyed businesses representing 381 different NAICS codes have reported green employment. More analysis and detail to follow!

Greening Manufacturing



- ❑ 688 Manufacturing firms have responded, representing 251,400 in employment.
- ❑ Of those, 177 firms reported 33,500 employees performing green job tasks.
- ❑ Over 70 percent of those reported employees perform green job tasks more than 50 percent of the time.

Greening Manufacturing

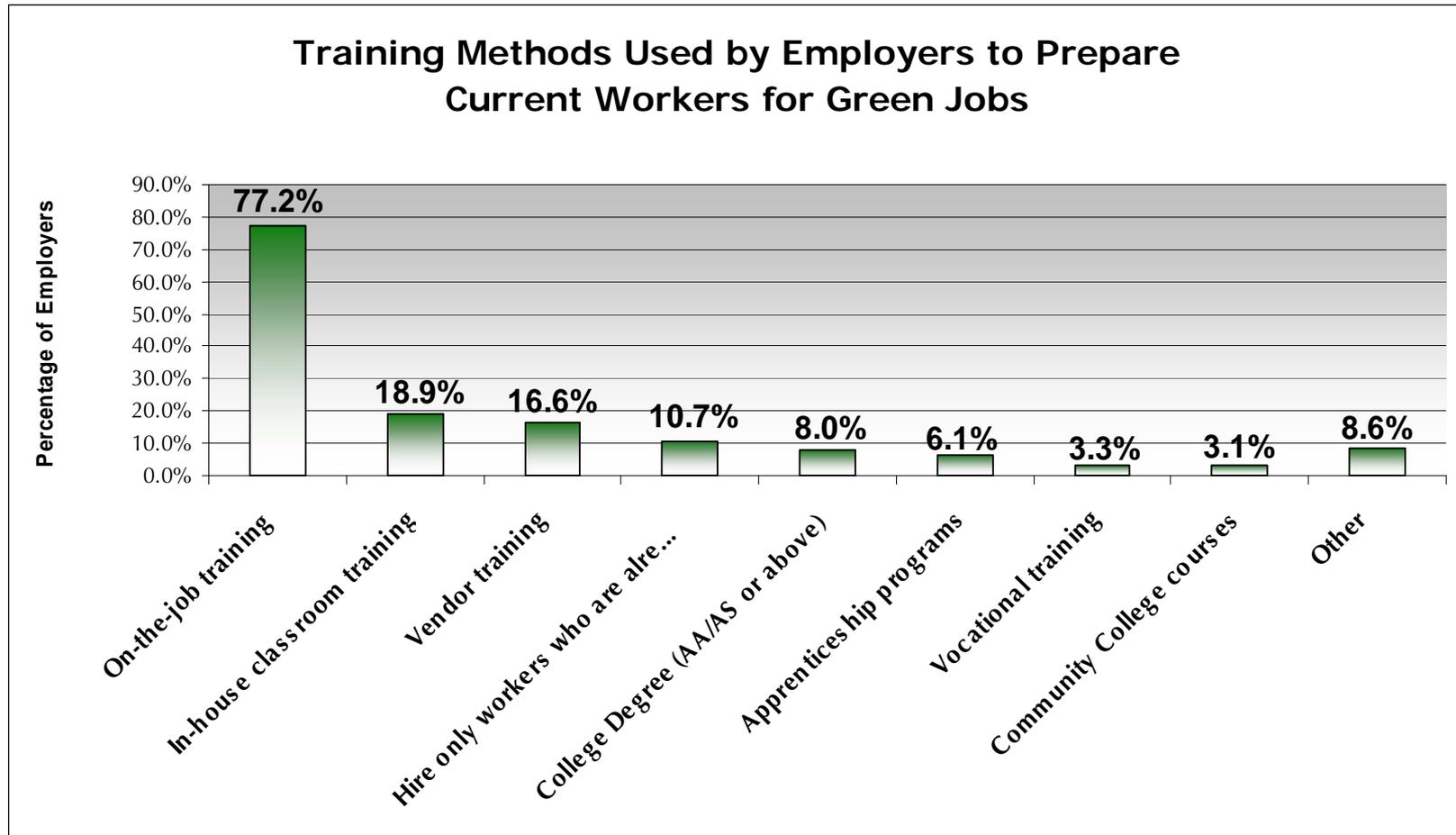


- Most reported Green Occupations in the Manufacturing sector:
 - Assemblers
 - Industrial Production Managers

- 58 percent of all green Assemblers reported are found in Manufacturing.

- Likewise, 52 percent of all green Industrial Production Managers reported are found in Manufacturing.

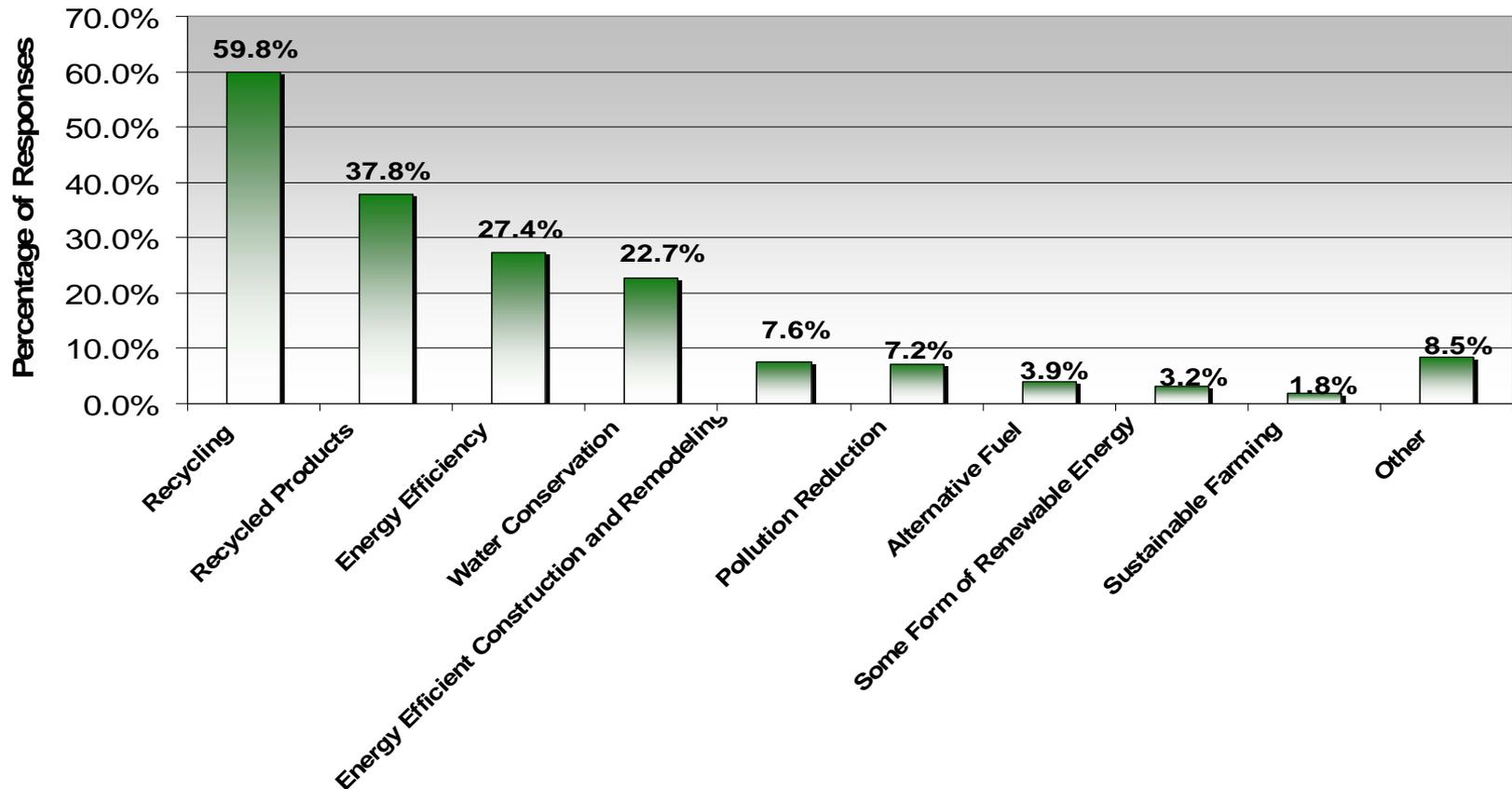
Preparation of Current Green Workers – OJT!



Preliminary data as of October 8, 2009

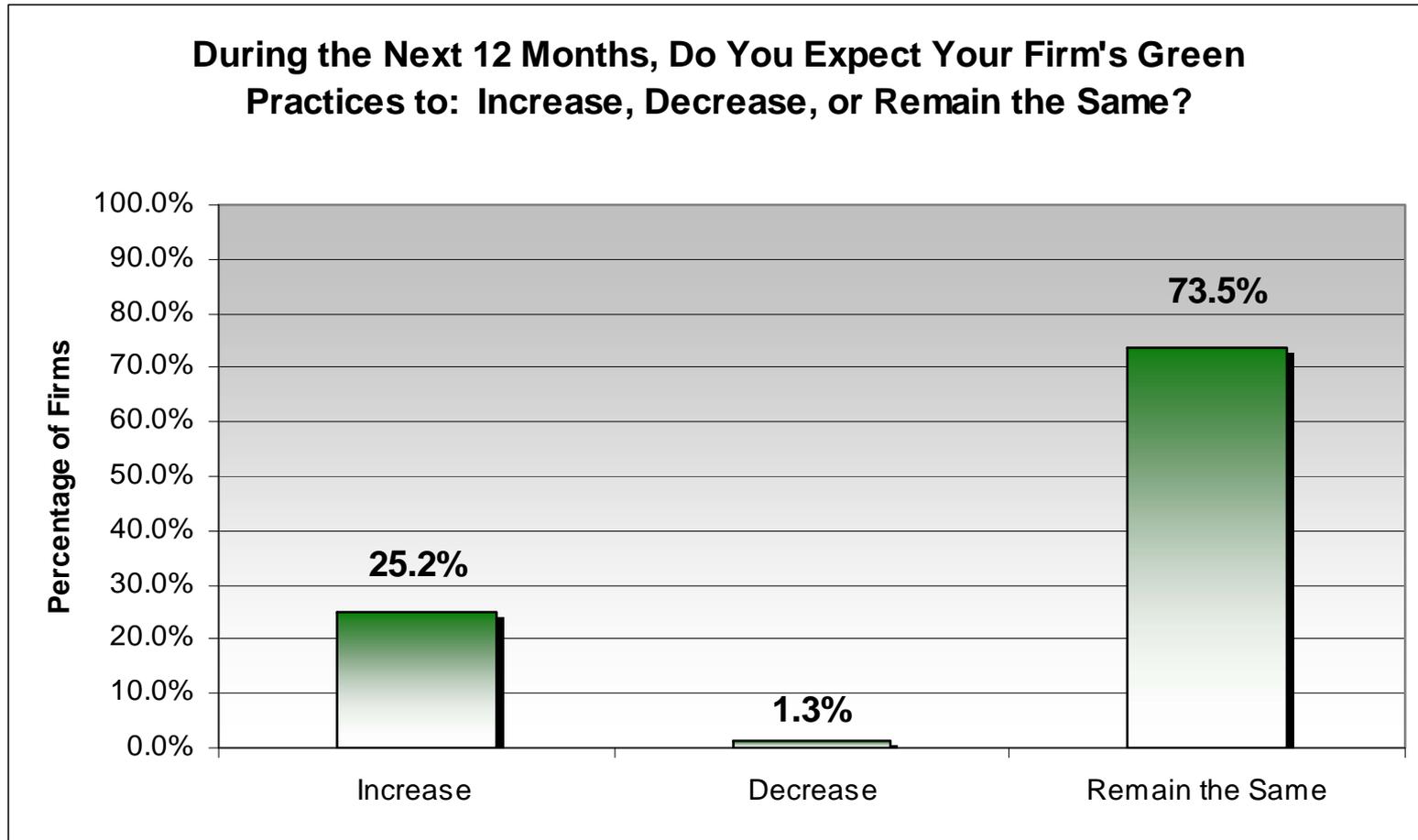
Sustainable Practices—Current Use?

If your business makes use of green practices, services or products, what does your firm currently USE on site



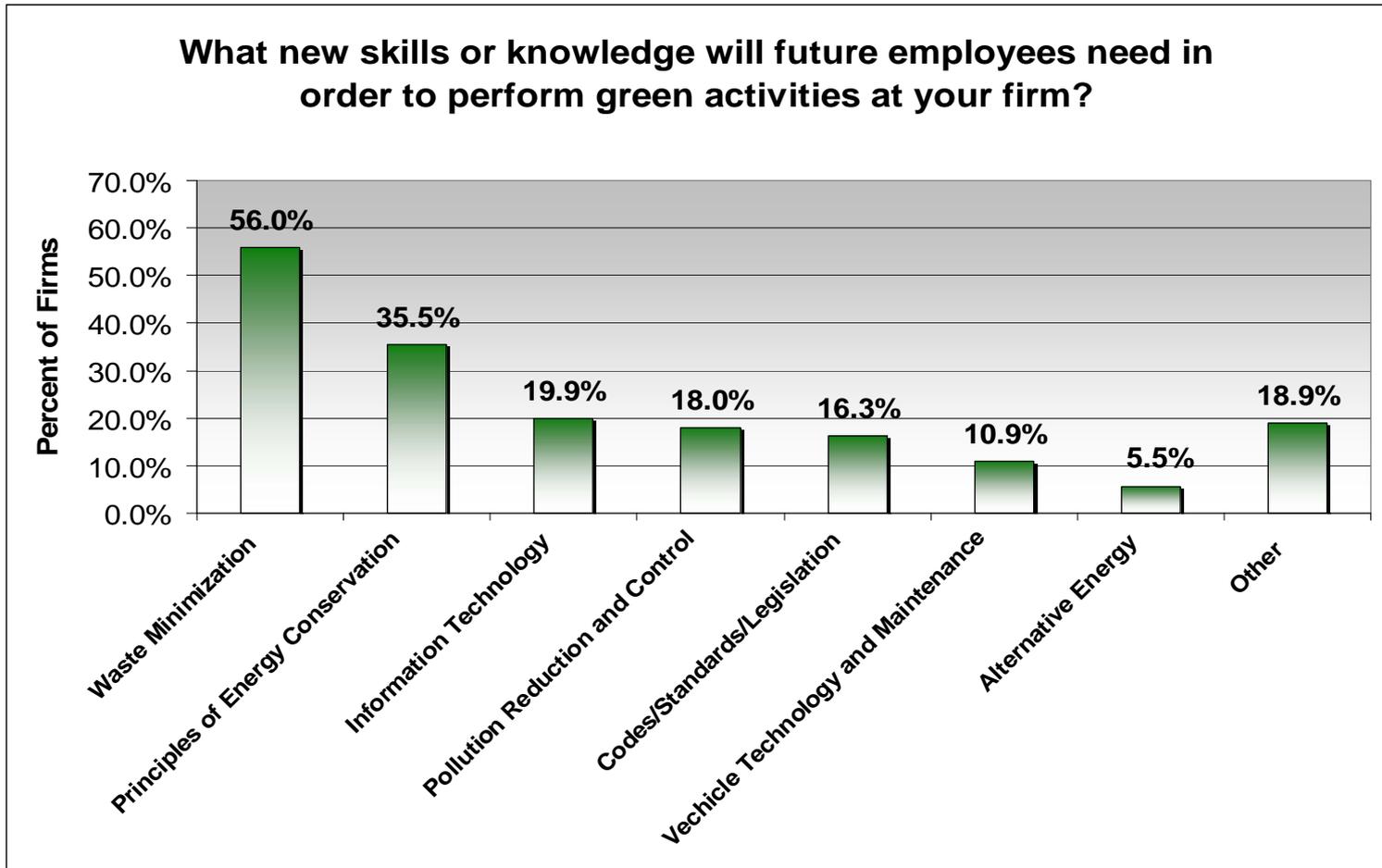
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Sustainable Practices – Expectations



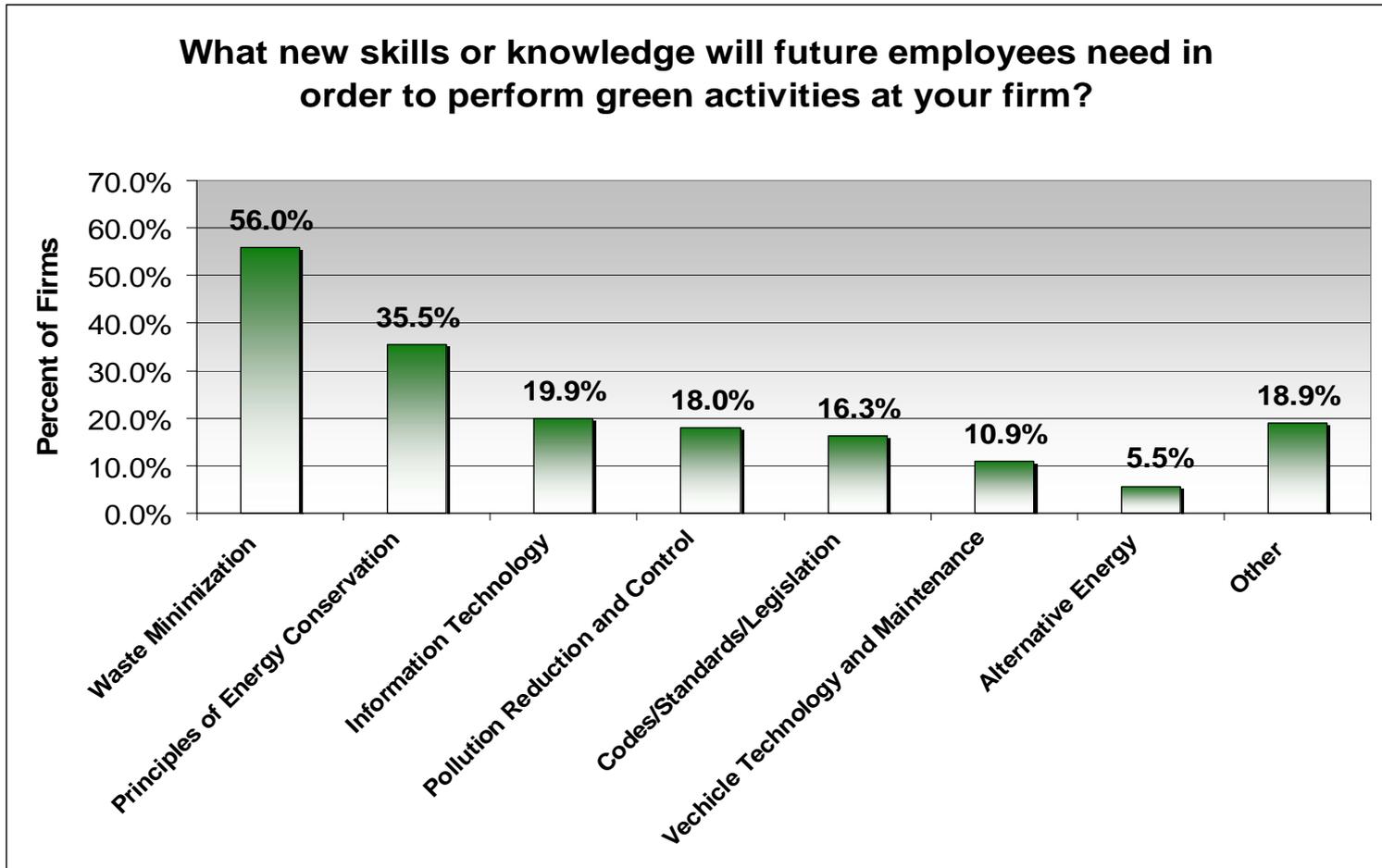
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Sustainable Practices—New skills?



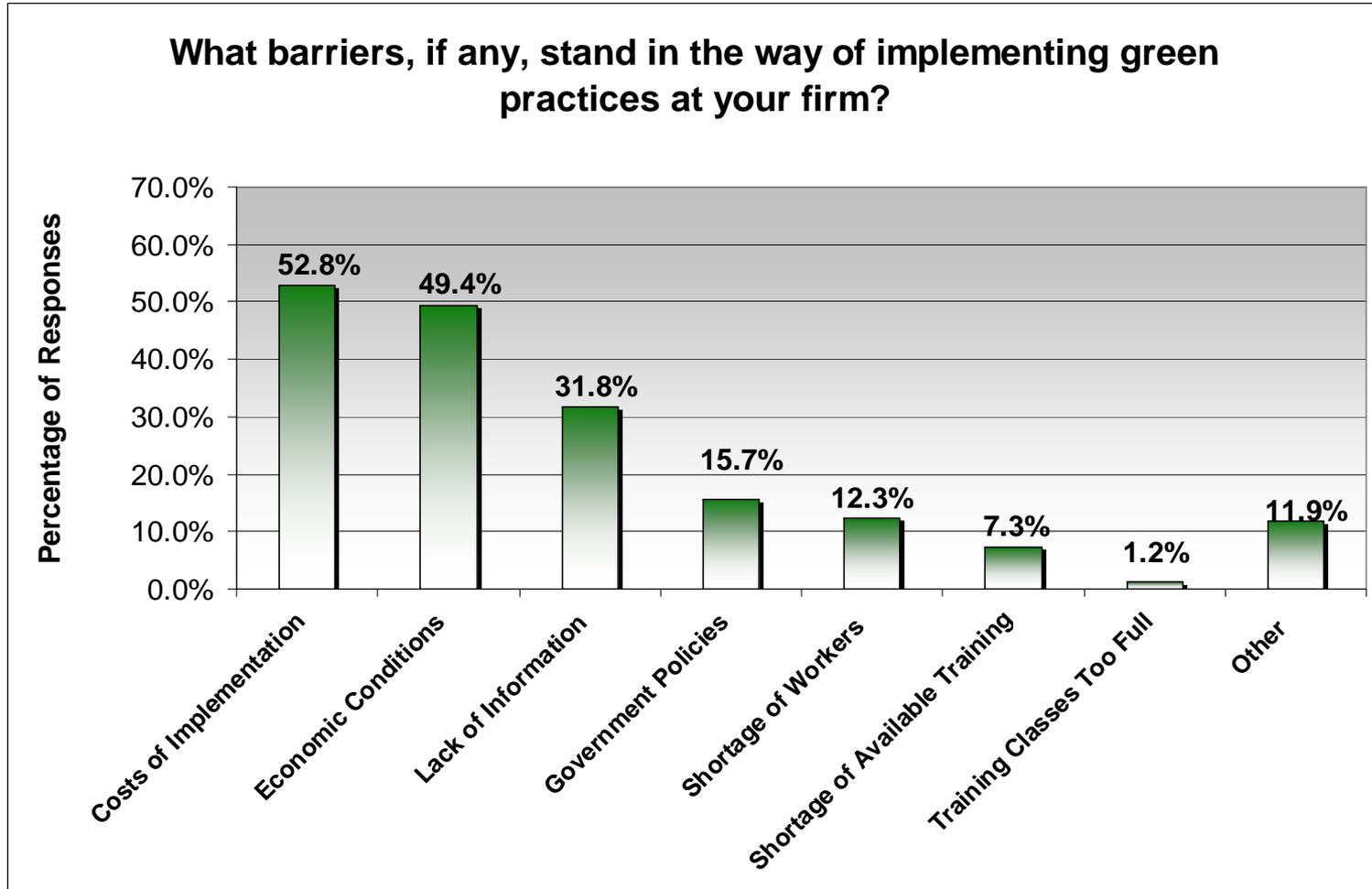
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Sustainable Practices—New skills?



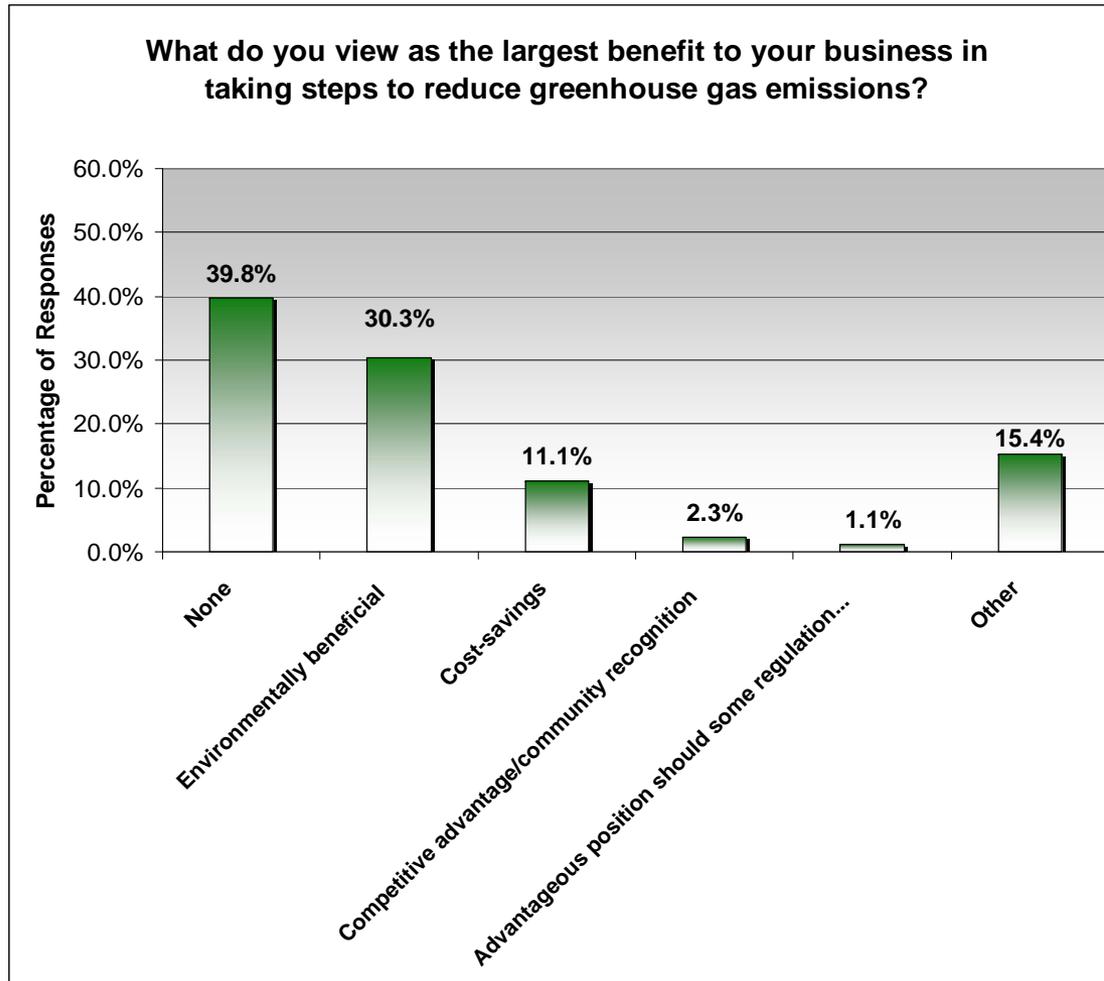
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Sustainable Practices – Barriers



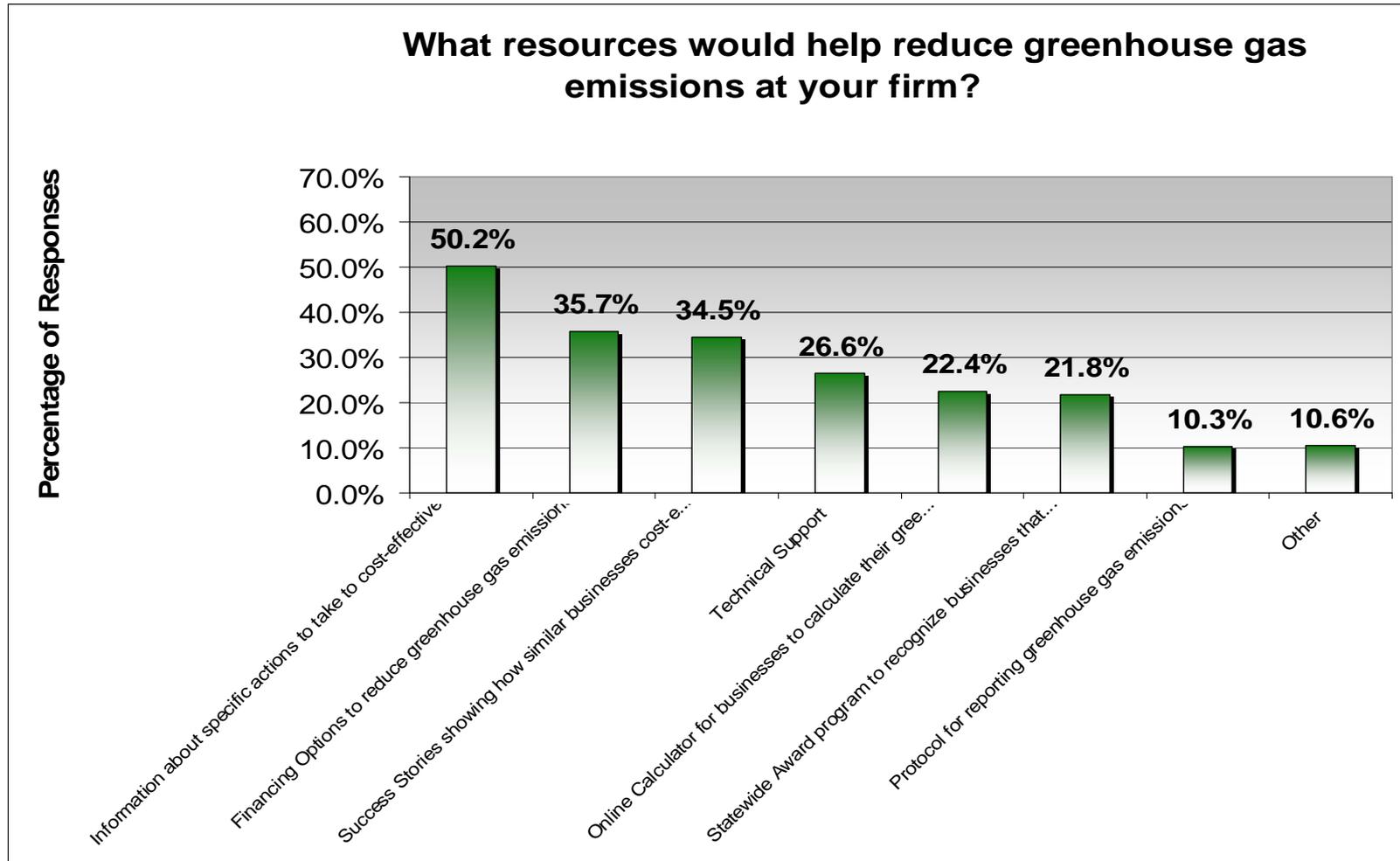
Preliminary data as of October 8, 2009

Sustainable Practices – Benefits



Preliminary data as of October 8, 2009

Sustainable Practices—Resources?



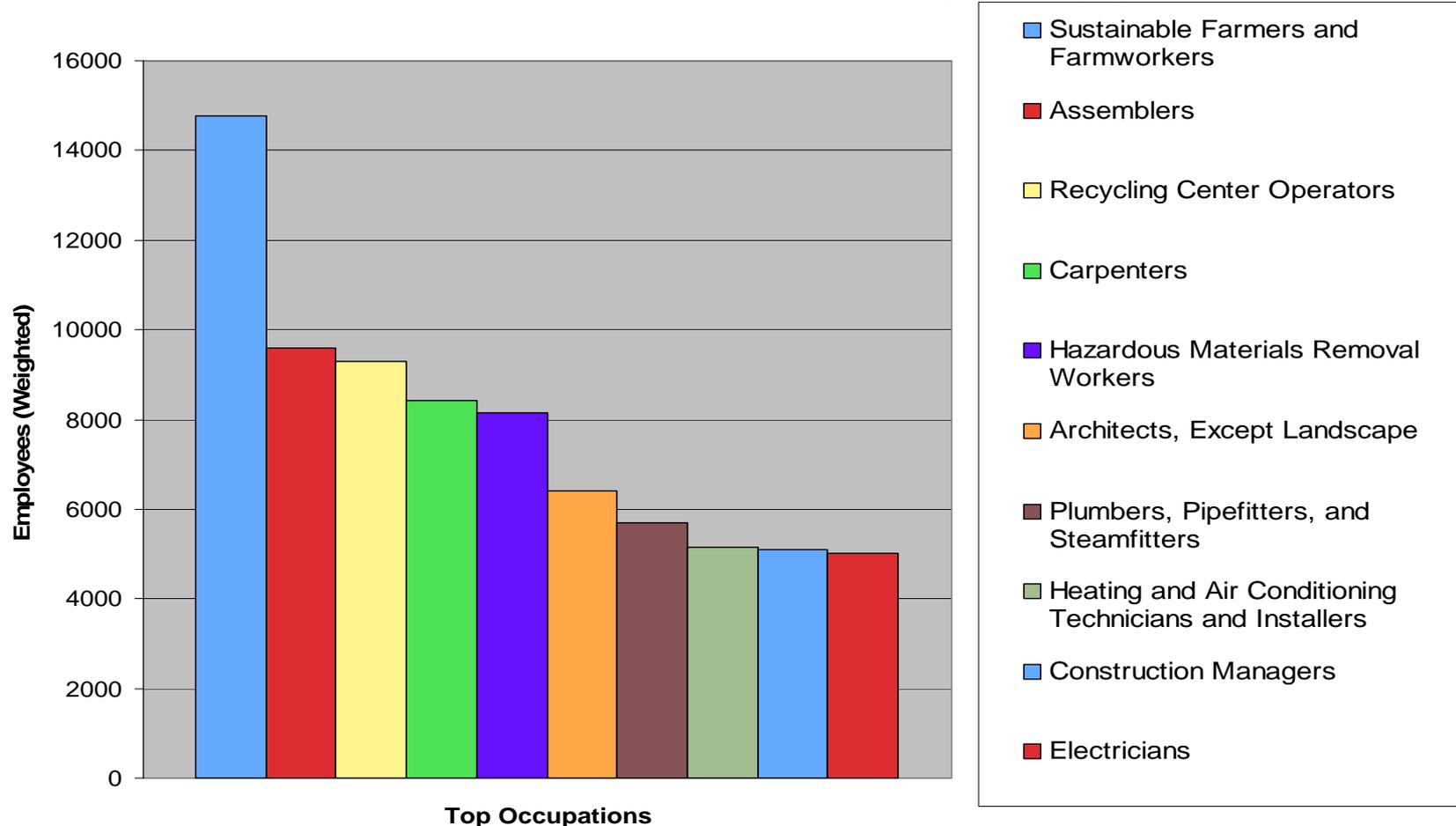
Preliminary data as of October 8, 2009

Preliminary Occupational Findings

- 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)



Preliminary data as of October 8, 2009

More about these 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
■ <i>Farmers, Sustainable (emerging)</i>	\$94,164
■ Plumbers	\$50,643
■ HVAC Technicians	\$46,625
□ Up to one year training	
■ Assemblers	\$23,959
■ <i>Farm Workers, sustainable (emerging)</i>	\$23,476
■ HAZMAT workers	\$40,520
■ <i>Recycling Center Operators (emerging)</i>	\$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

Bonnie.Graybill@edd.ca.gov

916.262.2620