California's Green Economy

LMI Advisory Group October 22, 2009

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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:

- Generating and storing renewable energy
- Recycling existing materials
- Energy efficient product manufacturing, distribution, construction, installation, and maintenance
- Education, compliance and awareness
- Natural 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)

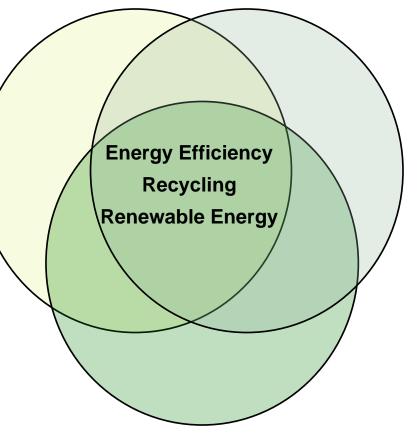
Washington 1.6 %

Oregon 3.0 %

Michigan 3.0 %

Caveat...Definitions vary somewhat between states...

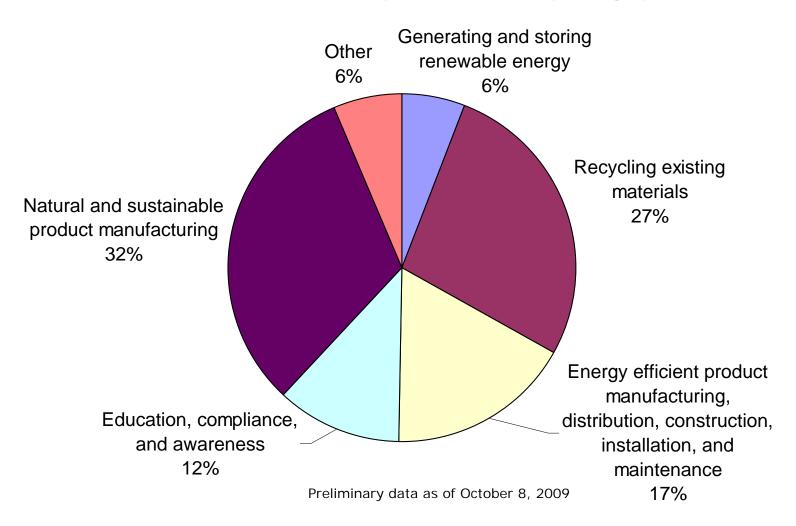
 Renewable energy, recycling, and energy efficiency are in each states definition



Preliminary data as of October 8, 2009

Green Workers Reported

Total Green Employment Reported by Category



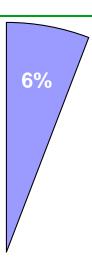
Generating and storing renewable energy

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
- Flectricians



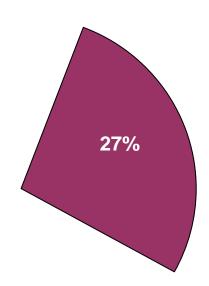
Recycling existing materials

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



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

17%

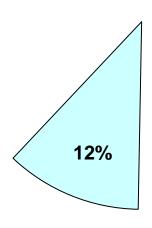
Education, compliance and awareness

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



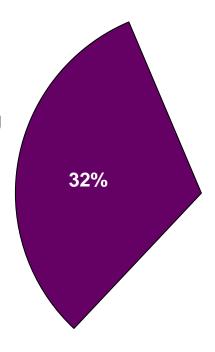
Natural and sustainable product mfg

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



What Industries are green?

- An initial analysis by the Bureau of Labor Statistics identified 62 sixdigit 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

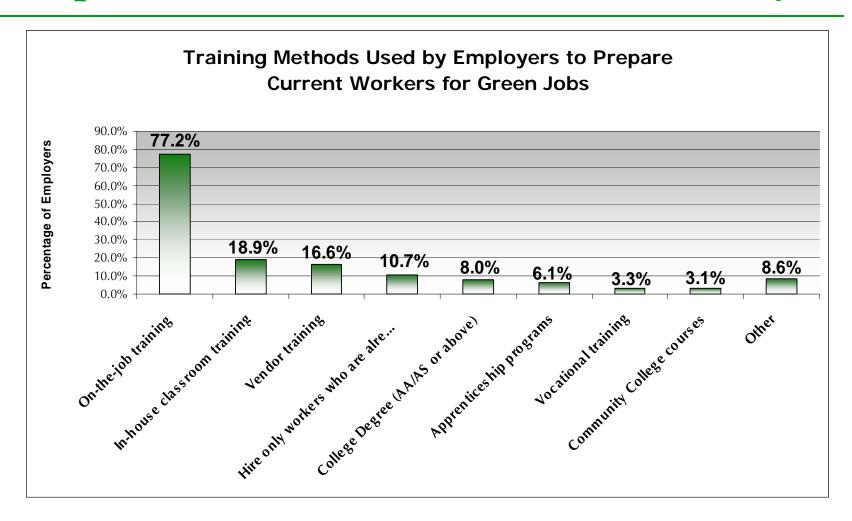
- 688 Manufacturing firms have responded, representing 251,400 in employment.
- Of those, 177 firms reported 33,500 employees performing green job tasks.
- Over 70 percent of those reported employees perform green job tasks more than 50 percent of the time.



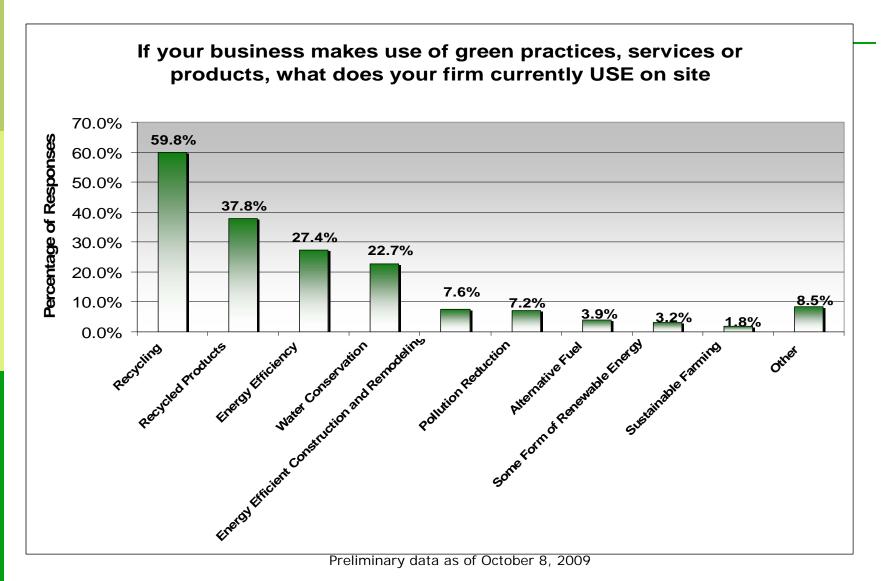


- Most reported Green Occupations in the Manufacturing sector:
 - Assemblers
 - Industrial Production Managers
- 58 percent of all green Assemblers reported are found in Manufacturing.
- Likewise, 52 percent of all green Industrial Production Managers reported are found in Manufacturing.

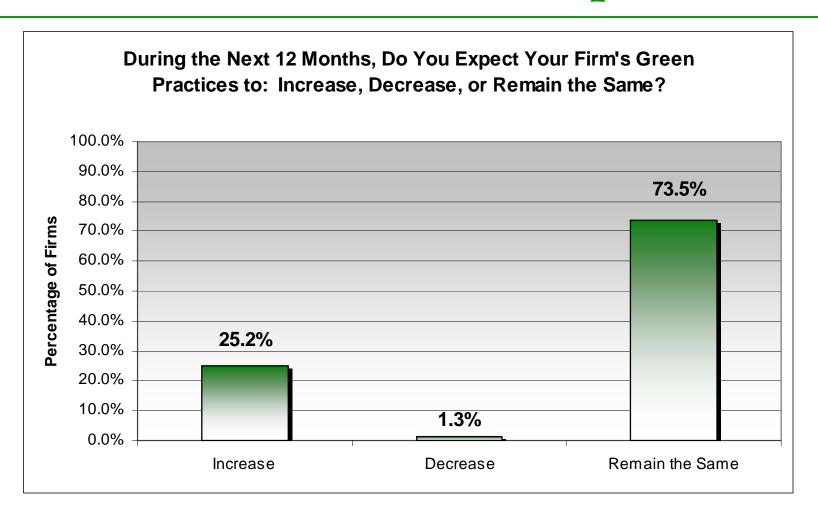
Preparation of Current Green Workers – OJT!



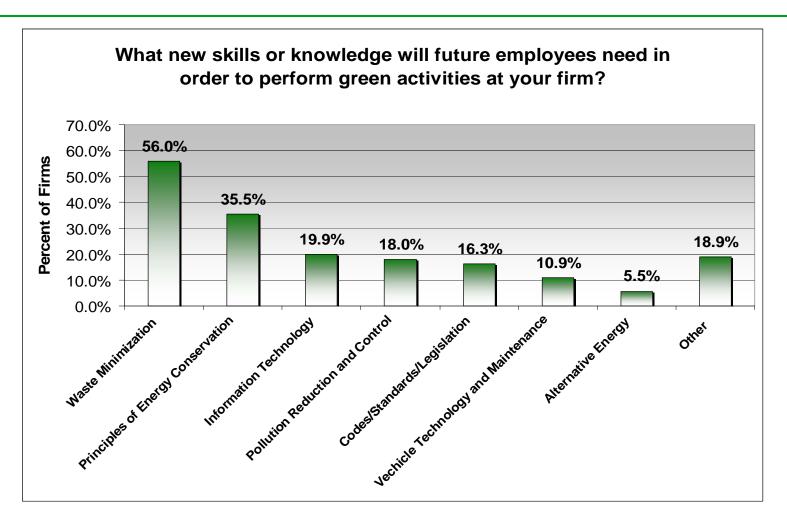
Sustainable Practices—Current Use?



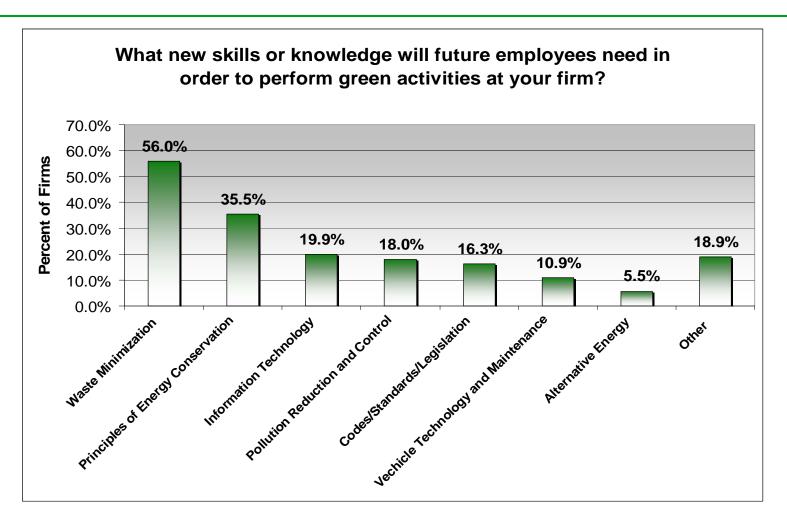
Sustainable Practices – Expectations



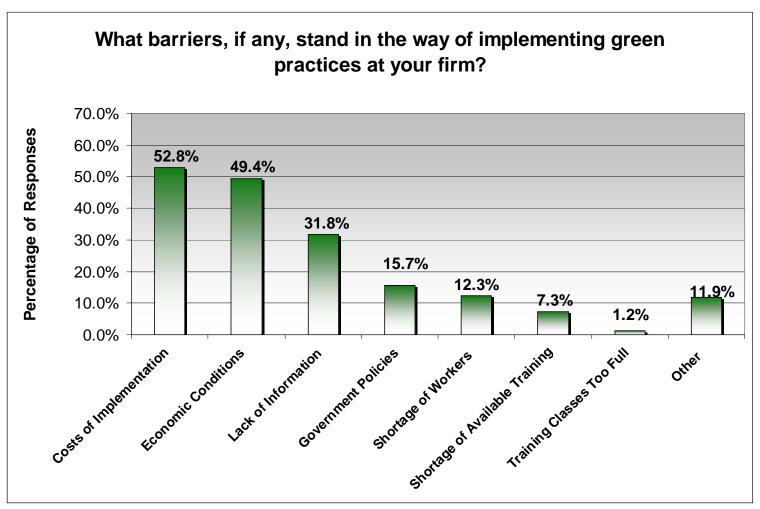
Sustainable Practices—New skills?



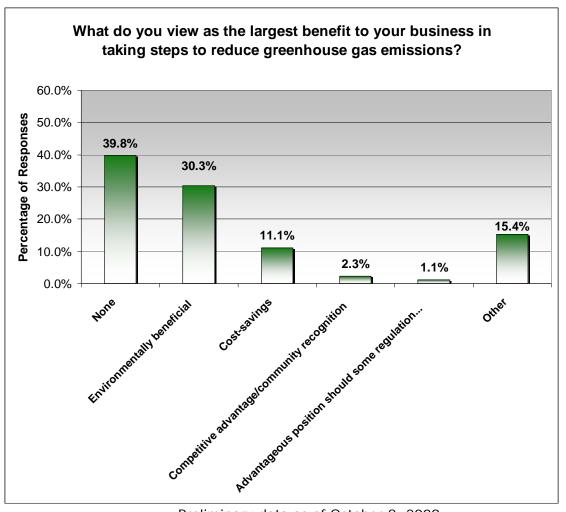
Sustainable Practices—New skills?



Sustainable Practices – Barriers

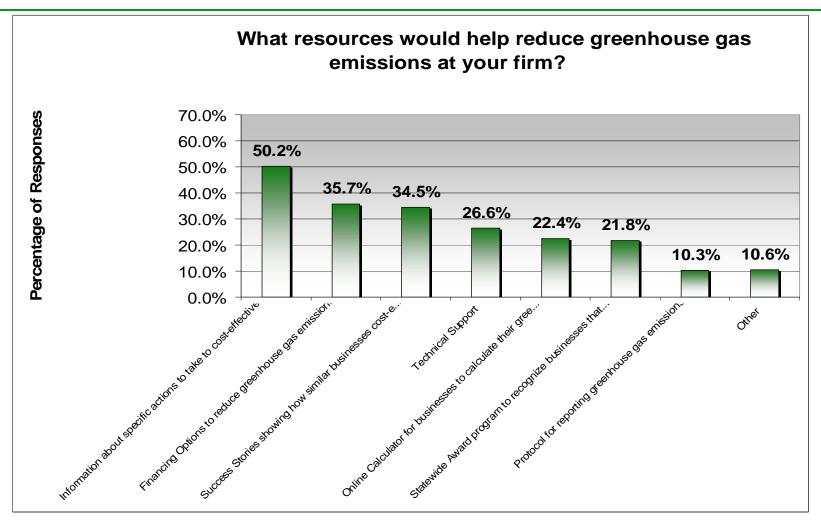


Sustainable Practices - Benefits



Preliminary data as of October 8, 2009

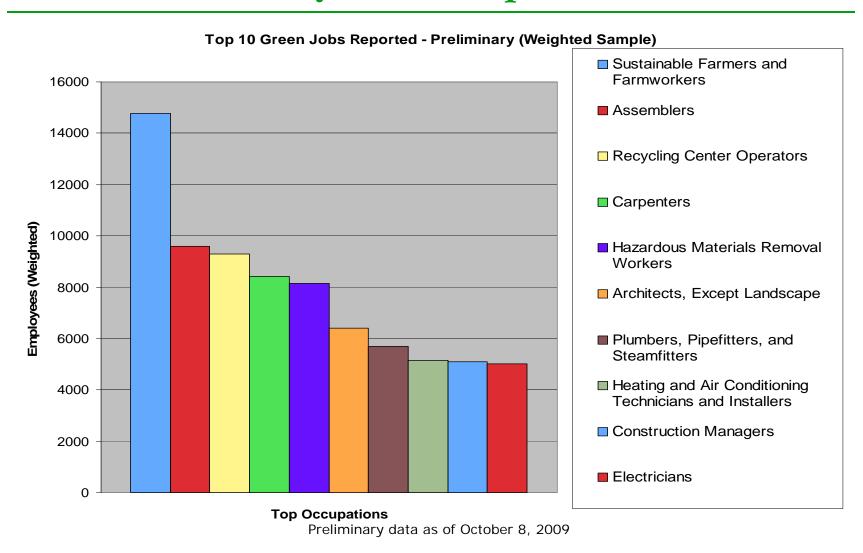
Sustainable Practices—Resources?



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 ...



More about these jobs

OES median wage* by training level

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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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