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

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 state's definition

Preliminary data as of October 8, 2009
Green Workers Reported

Total Green Employment Reported by Category

- Recycling existing materials: 27%
- Generating and storing renewable energy: 6%
- Natural and sustainable product manufacturing: 32%
- Education, compliance, and awareness: 12%
- Energy efficient product manufacturing, distribution, construction, installation, and maintenance: 17%
- Other: 6%

Preliminary data as of October 8, 2009
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

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

- **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.

Preliminary data as of October 8, 2009
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.

Preliminary data as of October 8, 2009
Preparation of Current Green Workers – OJT!

Training Methods Used by Employers to Prepare Current Workers for Green Jobs

Preliminary data as of October 8, 2009
If your business makes use of green practices, services or products, what does your firm currently USE on site?

- Recycling: 59.8%
- Energy Efficiency: 37.8%
- Water Conservation: 27.4%
- Energy Efficient Construction and Remodeling: 22.7%
- Pollution Reduction: 7.6%
- Alternative Fuel: 7.2%
- Some Form of Renewable Energy: 3.9%
- Sustainable Farming: 3.2%
- Other: 1.8%

Preliminary data as of October 8, 2009
Sustainable Practices – Expectations

During the Next 12 Months, Do You Expect Your Firm's Green Practices to: Increase, Decrease, or Remain the Same?

- Increase: 25.2%
- Decrease: 1.3%
- Remain the Same: 73.5%

Preliminary data as of October 8, 2009
Sustainable Practices—New skills?

What new skills or knowledge will future employees need in order to perform green activities at your firm?

- Waste Minimization: 56.0%
- Information Technology: 35.5%
- Pollution Reduction and Control: 19.9%
- Codes/Standards/Legislation: 18.0%
- Vehicle Technology and Maintenance: 16.3%
- Alternative Energy: 10.9%
- Other: 18.9%

Preliminary data as of October 8, 2009
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- Codes/Standards/Legislation: 18.0%
- Vehicle Technology and Maintenance: 16.3%
- Alternative Energy: 10.9%
- Other: 5.5%

Preliminary data as of October 8, 2009
Sustainable Practices – Barriers

What barriers, if any, stand in the way of implementing green practices at your firm?

- Costs of Implementation: 52.8%
- Economic Conditions: 49.4%
- Lack of Information: 31.8%
- Government Policies: 15.7%
- Shortage of Workers: 12.3%
- Shortage of Available Training: 7.3%
- Training Classes Too Full: 1.2%
- Other: 11.9%

Preliminary data as of October 8, 2009
Sustainable Practices – Benefits

What do you view as the largest benefit to your business in taking steps to reduce greenhouse gas emissions?

- Environmentally beneficial: 39.8%
- Cost-savings: 30.3%
- Competitive advantage/community recognition: 11.1%
- Advantages position should some regulation...: 2.3%
- Other: 15.4%

Preliminary data as of October 8, 2009
Sustainable Practices—Resources?

What resources would help reduce greenhouse gas emissions at your firm?

- Information about specific actions to take to be cost-effective: 50.2%
- Financing Options to reduce greenhouse gas emissions: 35.7%
- Success Stories showing how similar businesses cost-saved: 34.5%
- Technical Support: 26.6%
- Online Calculator for businesses to calculate their gas...: 22.4%
- Statewide Award program to recognize businesses that...: 21.8%
- Protocol for reporting greenhouse gas emission: 10.3%
- Other: 10.6%

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 …
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
  - *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


Preliminary data as of October 8, 2009
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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