

# California's Green Economy



CalRecycle Zone Works  
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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

# LMID'S 'Green' Economy webpage

[Home](#) | [Unemployment](#) | [Disability](#) | [Jobs / Training](#) | [Payroll Taxes](#) | [Labor Market Info](#) | [Forms/ Publications](#)

[Overview](#) | [Career Information](#) | [The Economy](#) | [Data Library](#) | [Customer Center](#) | [Contact LMI](#)

## Understanding the "Green" Economy

**Green Survey** 

Use these links to jump to a section of interest:

[Digest](#) | [Analyses](#) | [Conferences](#) | [Activities](#) | [Legislation](#) | [Resources](#) | [Improvement Grants](#)

What is a "Green" industry or occupation? There are many aspects of work that could be considered green, such as new materials, methods, products, and services. However, we do not yet have a common language capturing the broad and varied nature of green industries and jobs. [Several states and many local organizations](#) are working collaboratively to better understand and promote the effects of clean and green technology on our economy. Following is a collection of information from those efforts.

### Definitions of Green Economy

### Digest of "Green" Reports and Studies:

To encourage the discussion on how green technology affects the workplace and economy, a consortium of local, state, and federal entities is currently reviewing "green" literature to create a "Digest of Green Reports and Studies". The Digest process, links to Digest forms, and a list of project participants is outlined below.

**Index to the Digest** (Updated: December 31, 2009)  
As reports and studies are identified, they are added to the [Index to the Digest](#). A participant then reviews the report and prepares a brief summary including the report's contents, methodology, and author. Links to the summary and to the original study are then added to the Index.

**How to Contribute to the Digest**  
Do you know of a green study that should be added to the Green Digest Index? Would you be willing to review a study and write a summary for the Digest Index? If you would like to contribute to this project, contact Bonnie Graybill via e-mail at [Bonnie.Graybill\(at\)edd.ca.gov](mailto:Bonnie.Graybill(at)edd.ca.gov) or by phone at (916) 262-2160.

# “Green Economy Sector”

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- DOL Occupational Information Network (O\*NET)
- Helpful information on over 200 occupations in the green sector
- Occupations classified as
  - Green enhanced skills
  - Green increased demand
  - New and emerging green occupations

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

## Browse by Green Economy Sector



The green economy will cause a change in occupations' employment demand or work and worker requirements such as tasks, skills, knowledge, and credentials. Green occupations are linked to Green Economy Sectors.

All Green Economy Sectors

### All Green Economy Sectors [Save Table \(XLS/CSV\)](#)

Sort by: <a href="#">Category</a>	<a href="#">Code</a>	<a href="#">Occupation</a> ▲	Sectors
Green Enhanced Skills	17-2011.00	<a href="#">Aerospace Engineers</a> <small>InDemand</small> ✓	Research, Design, and Consulting Services; Transportation
Green Increased Demand	45-2011.00	<a href="#">Agricultural Inspectors</a> ✓	Agriculture and Forestry; Governmental and Regulatory Administration
Green Enhanced Skills	19-4011.01	<a href="#">Agricultural Technicians</a> <small>InDemand</small> ✓	Agriculture and Forestry
Green Enhanced Skills	51-2011.00	<a href="#">Aircraft Structure, Surfaces, Rigging, and Systems Assemblers</a> <small>InDemand</small> ✓	Manufacturing
Green Enhanced Skills	23-1022.00	<a href="#">Arbitrators, Mediators, and Conciliators</a> ✓	Governmental and Regulatory Administration; Research, Design, and Consulting Services
Green Enhanced Skills	17-1011.00	<a href="#">Architects, Except Landscape and Naval</a> <small>InDemand</small> ✓	Green Construction; Research, Design, and Consulting Services
Green Increased Demand	17-3011.01	<a href="#">Architectural Drafters</a> <small>InDemand</small> ✓	Green Construction
Green Enhanced Skills	19-2021.00	<a href="#">Atmospheric and Space Scientists</a> ✓	Environment Protection; Research, Design, and Consulting Services
Green New & Emerging	17-3027.01	<a href="#">Automotive Engineering Technicians</a> <small>InDemand</small> ✓	Transportation
Green New & Emerging	17-2141.02	<a href="#">Automotive Engineers</a> <small>InDemand</small> ✓	Research, Design, and Consulting Services; Transportation
Green Enhanced Skills	49-3023.02	<a href="#">Automotive Specialty Technicians</a> <small>InDemand</small> ✓	Transportation
Green New & Emerging	17-2199.01	<a href="#">Biochemical Engineers</a> ✓	Manufacturing; Research, Design, and Consulting Services
Green New & Emerging	51-8099.01	<a href="#">Biofuels Processing Technicians</a> ✓	Renewable Energy Generation



## Browse by Green Economy Sector



The green economy will cause a change in occupations' employment demand or work and worker requirements such as tasks, skills, knowledge, and credentials. Green occupations are linked to Green Economy Sectors.



### Recycling and Waste Reduction [Save Table \(XLS/CSV\)](#)

This sector covers activities related to solid waste and wastewater management, treatment, and reduction, as well as processing recyclable materials.

Sort by: [Category](#)[Code](#) [Occupation ▲](#)

Green Enhanced Skills	47-4041.00	<a href="#">Hazardous Materials Removal Workers</a> <a href="#">InDemand</a>
Green New & Emerging	51-9199.01	<a href="#">Recycling and Reclamation Workers</a>
Green New & Emerging	53-1021.01	<a href="#">Recycling Coordinators</a> <a href="#">InDemand</a>
Green Enhanced Skills	53-7081.00	<a href="#">Refuse and Recyclable Material Collectors</a>

Send comments or questions to [O\\*NET Info](#).

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# 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, visit the LMI website @ [www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov)

# 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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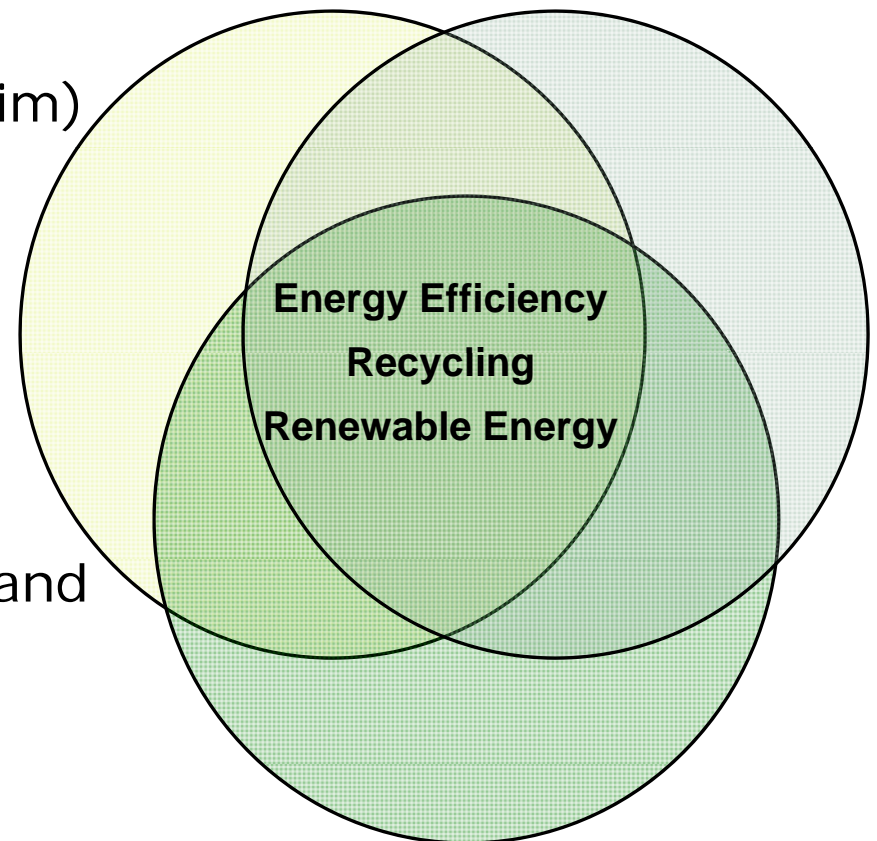
- Over 15,000 employers have responded
- 9.2 percent of employers report employees working on green products and services
- About 3.7 percent of all workers are working on green products and services
- About two-thirds of green workers spend more than half time on green aspects of job
- 62 percent of 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

# Comparison to Other States' Recent Green Workforce Surveys?

## Green as a percent of total employment

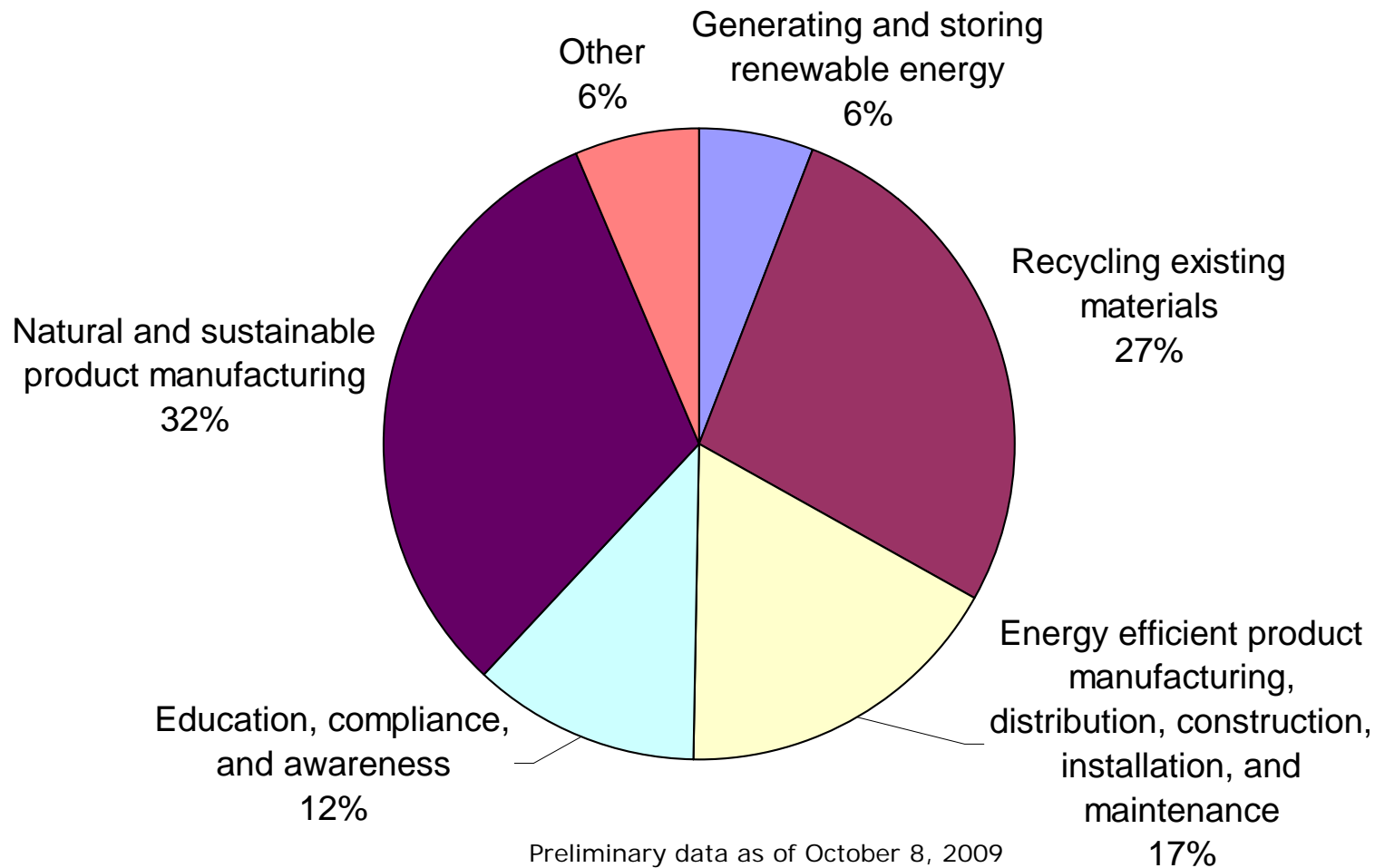
California	3.7 % (Prelim)
Washington	1.6 %
Oregon	3.0 %
Michigan	3.0 %

- 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**



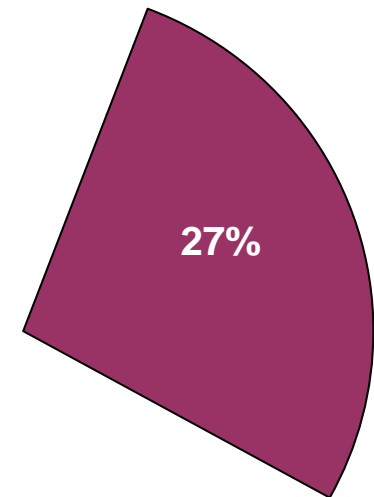
# Recycling existing materials

## ■ 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

# Monthly Industry Employment Data

	G	H	DU	DV	DW	DX	DY	DZ	EA	EE
8	SS-NAICS	TITLE	Sep-09	Oct-09	Nov-09	Dec-09				
9	00-000010	Civilian Labor Force	18,373,700	18,363,200	18,332,200	18,195,800				
10	00-000020	Civilian Employment	16,162,400	16,105,500	16,083,400	15,989,300				
11	00-000030	Civilian Unemployment	2,211,300	2,257,700	2,248,800	2,206,600				
12	00-000040	Civilian Unemployment Rate	12.0%	12.3%	12.3%	12.1%				
13	01-000000	Total, All Industries	14,643,600	14,682,800	14,635,000	14,570,300				
14	11-000000	Total Farm	449,000	411,200	353,600	329,400				
15	00-000000	Total Nonfarm	14,194,600	14,271,600	14,281,400	14,240,900				
16	05-000000	Total Private	11,772,700	11,781,700	11,779,500	11,753,200				
17	06-000000	Goods Producing	1,979,700	1,952,800	1,928,100	1,900,300				
18	10-000000	Mining and Logging	27,700	27,400	27,500	26,800				
19	10-113300	Logging	2,400	2,300	1,900	1,500				
20	10-210000	Mining	25,300	25,100	25,600	25,300				
21	10-211000	Oil & Gas Extraction	8,800	8,800	8,900	8,800				
22	10-212000	Mining, except Oil & Gas	5,500	5,400	5,400	5,300				
23	10-213000	Support Activities for Mining	11,000	10,900	11,300	11,200				
24	20-000000	Construction	640,500	632,100	620,700	600,800				
25	20-236000	Construction of Buildings	148,700	147,000	146,200	142,700				
26	20-236100	Residential Building Construction	94,300	93,700	93,000	89,800				
27	20-236200	Nonresidential Building Construction	54,400	53,300	53,200	52,900				
28	20-237000	Heavy & Civil Engineering Construction	74,900	74,900	73,500	67,500				
29	20-237100	Utility System Construction	34,300	34,500	34,000	31,200				
30	20-237200	Land Subdivision	8,300	8,400	8,200	8,100				
31	20-237300	Highway, Street, & Bridge Construction	24,200	23,800	23,300	20,400				
32	20-237900	Other Heavy & Civil Engineering Construction	8,100	8,200	8,000	7,800				
33	20-238000	Specialty Trade Contractors	416,900	410,200	401,000	390,600				
34	20-238100	Building Foundation & Exterior Contractors	84,700	85,200	85,400	83,000				
35	20-238200	Building Equipment Contractors	158,300	154,500	150,900	148,500				
36	20-238300	Building Finishing Contractors	120,600	119,100	114,700	113,600				
37	20-238900	Other Specialty Trade Contractors	53,300	51,400	50,000	45,000				

[www.labormarketinfo.edd.ca.gov](http://www.labormarketinfo.edd.ca.gov)

## Employment by Industry Data

The **table** below provides links to current and historical employment data for California, counties and Metropolitan Areas. The current and historical data files are updated on a monthly basis. ([Release Schedule](#)) The data are available through **December 2009**.

To select industry data for selected industries for all geographic areas, use the [Industry Employment Data Search Tool](#)

Geography	Current Month Employment (Press Release)	Historical Monthly Data (Excel)	Historical Annual Average Data (Excel)
<b>All Areas</b> (compressed, .zip files)	<a href="#">Current Month (PDF)</a> <a href="#">Current Month (Excel)</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">All Areas</a>
<b>Seasonally Adjusted</b> ( <a href="#">Definition</a> )			
California	<a href="#">Table</a> & <a href="#">Narrative</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	Not Applicable
Selected MSAs	Not Applicable	<a href="#">1997-1999</a> <a href="#">2000-current</a>	Not Applicable
<b>Not Seasonally Adjusted</b>			
California	<a href="#">Table</a> & <a href="#">Narrative</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">1990-2008</a>
Alameda County (part of Oakland-Fremont-Hayward MD)	<a href="#">Current Month (MD)</a>	<a href="#">1990-1999 (Cnty)</a> <a href="#">2000-2008 (Cnty)</a> <a href="#">1990-1999 (MD)</a> <a href="#">2000-current (MD)</a>	<a href="#">1990-2008 (Cnty)</a> <a href="#">1990-2008 (MD)</a>
Alpine County	<a href="#">Current Month</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">1990-2008</a>
Amador County	<a href="#">Current Month</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">1990-2008</a>
Butte County (Chico MSA)	<a href="#">Current Month</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">1990-2008</a>
Calaveras County	<a href="#">Current Month</a>	<a href="#">1990-1999</a> <a href="#">2000-current</a>	<a href="#">1990-2008</a>

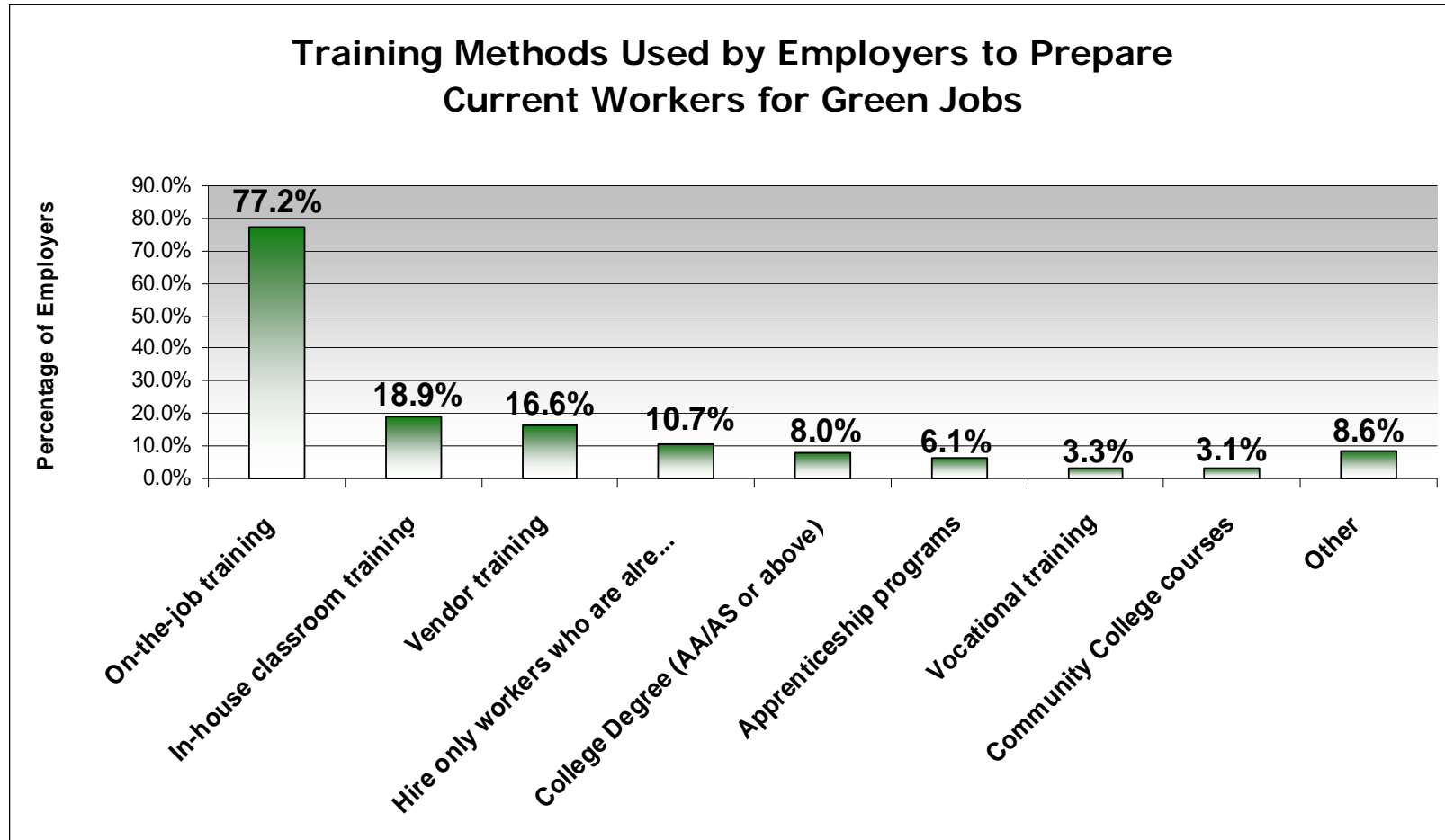
# LMI Data Resources

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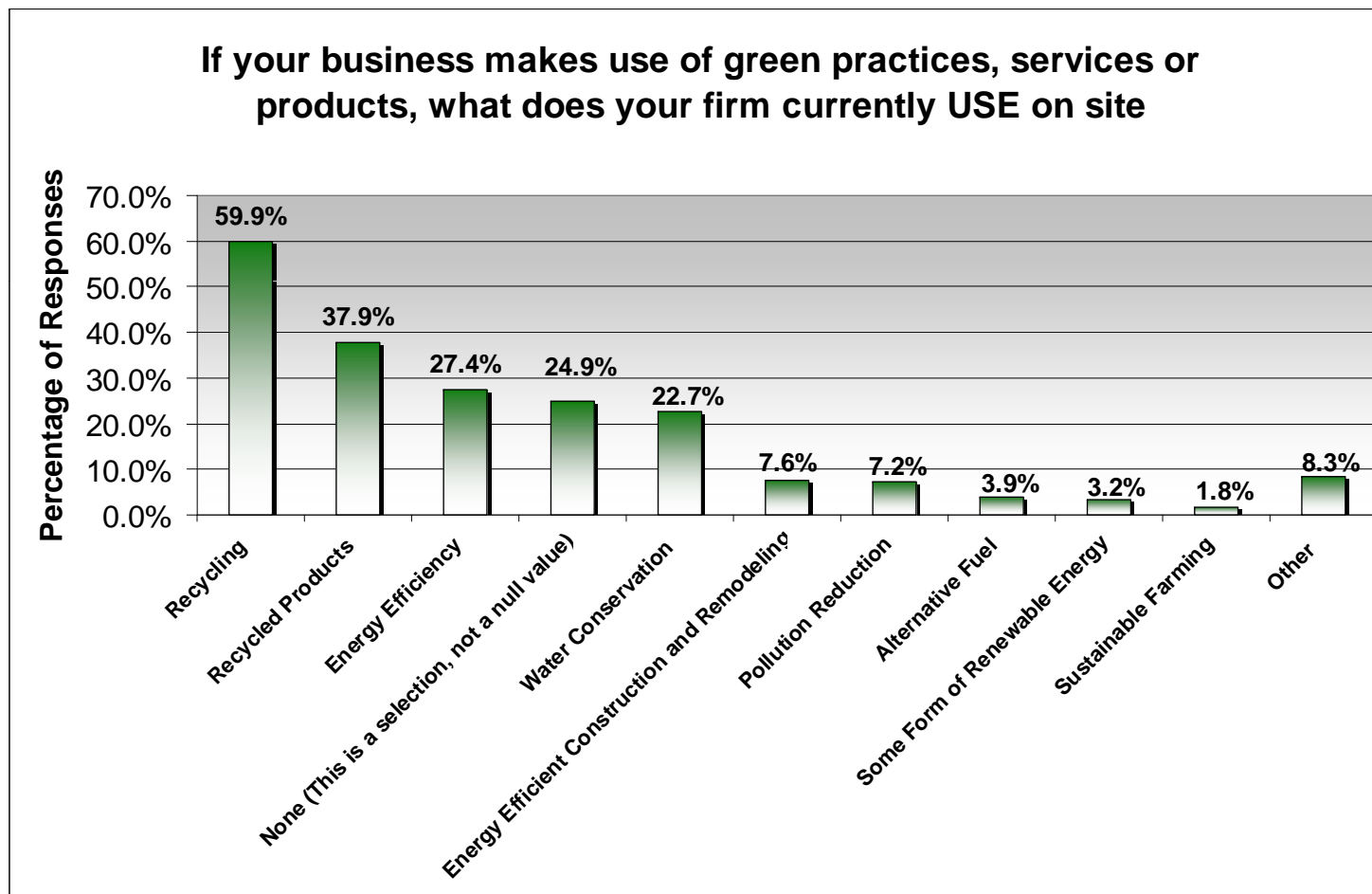
- Industry and occupational wage data
- Industry and occupational projections
  - Current projection period: 2006–2016
  - Short-term projections for CA: 2008-2010
- Business Employment Dynamics
  - Business changes - expansion/contractions
- Staffing Patterns
  - Identifies: industries that hire an occupation, and what occupations are employed in an industry



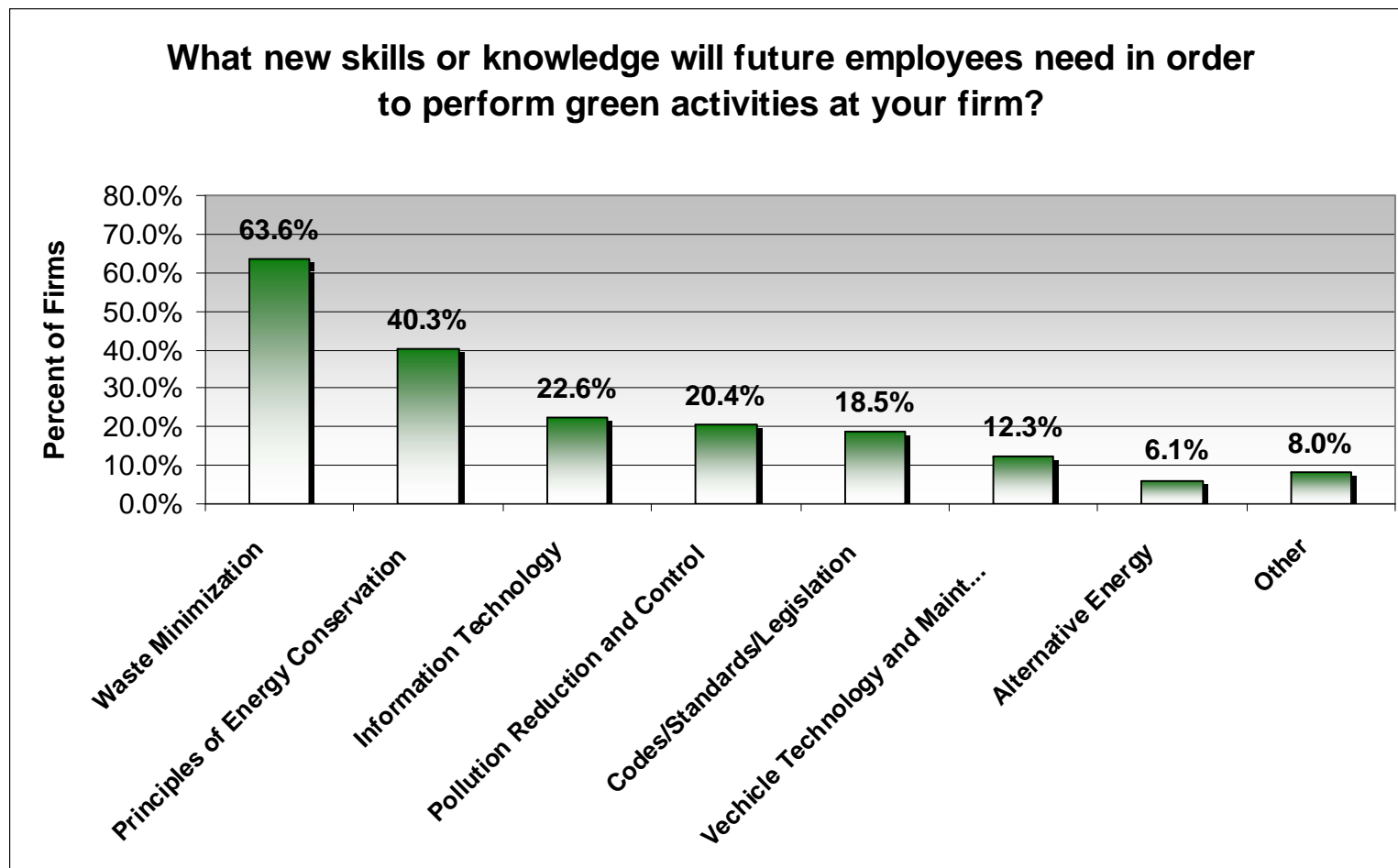
# Preparation of Current Green Workers – OJT!



# Sustainable Practices – Current



# Sustainable Practices – Skill Needs



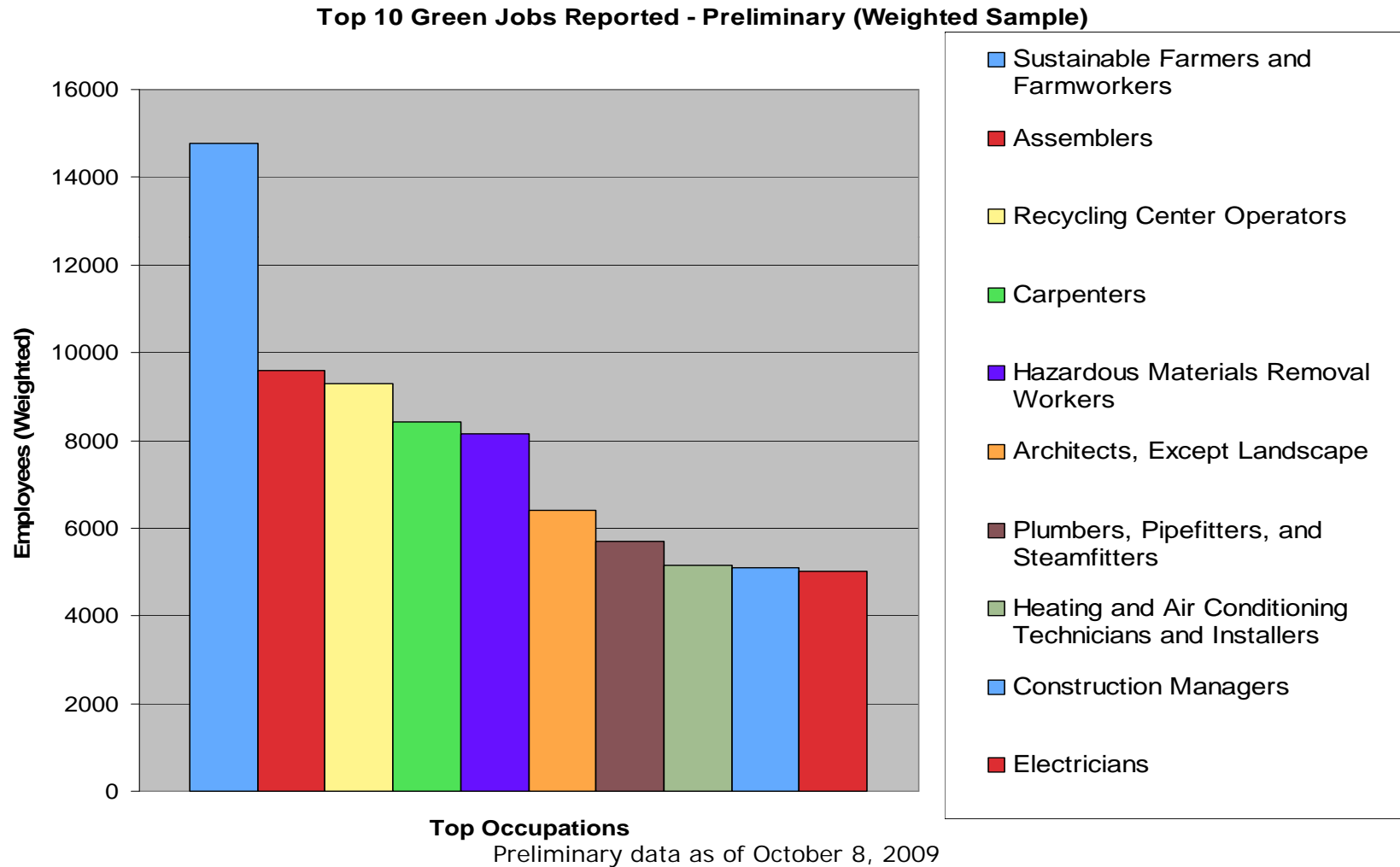
# Preliminary Occupational Findings

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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 “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 ...



# Next Steps

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- Complete data collection—survey completed January 14, 2010
- 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 contact:

*Liz Baker @ 209.941.6551*

*Or*

*Bonnie Graybill @ 916.262.2620*