Session I: Clean Energy Jobs & LMI Research
(What Does it Mean and What are the Next Steps)

Presenter and Facilitator: Pat Malone, Advanced Energy Training Institute

Panelists: Rebecca Sterling, NYSERDA; Clifford Babson, Building Performance Contractors Association; David Winchester, CleanTech Rocks; Hal Smith, HALCO Inc.
Definition of a ‘Green Job’ in New York State

Primarily involved in producing goods or delivering services that increase energy efficiency or generate renewable energy.

Examples:

- Manufacturing components for wind turbines or solar panels;
- Energy retrofitting existing homes;
- Scientific research and development that promotes RE or EE;
- HVAC and performance monitoring/optimization on residential buildings.
State LMI Improvement Grant - $1.1 Million

- Quantify/Qualify Jobs in NYS’s Clean Energy Industry:
  - Focus on energy efficiency and renewable energy.
  - Identify emerging skills and training capacity.
  - Assess labor supply/demand and identify skill gaps.
  - Develop a green jobs portal for jobseekers, businesses and education/training organizations.

- Partners:
  - New York State Department of Labor
  - SUNY System Office of Business and Industry Relations.
  - SUNY Albany College of Nanoscale Science and Engineering, Energy and Environmental Technology Applications Center (E2TAC).
  - Advanced Energy Center (AEC) at Stony Brook University.
  - NYC LMI Service at the CUNY Graduate Center.
New York State LMI Improvement Grant

**OCCUPATIONAL TITLE AND DESCRIPTION OF DUTIES**

(Do not employ workers who produce "green" products or services unless your firm has an LMI Enhanced Status)

<table>
<thead>
<tr>
<th>Building and Grounds Maintenance Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisors of Building and Grounds Workers</td>
</tr>
<tr>
<td>Janitors, Cleaners and Porters</td>
</tr>
<tr>
<td>Landscaping and Groundskeeping Workers</td>
</tr>
<tr>
<td>General Maintenance and Repair Workers</td>
</tr>
<tr>
<td>Stationary Engineers and Boiler Operators</td>
</tr>
</tbody>
</table>

**GREEN JOBS REPORT**

**FALL 2010**

**Building Services**

What this report is about:
This form asks for information about the number and type of jobs, including the qualifications, design, production, and the number, qualifications, maintenance or assessment of new or improved energy efficiency products and services.

Please complete item on the form page and then complete the form and return it by mail or fax to the Bureau of Labor Statistics.

With your help, this report will help make the process of building and grounds maintenance more efficient and environmentally sustainable.

The report can be found at [http://www.census.gov/econ/gjr](http://www.census.gov/econ/gjr)

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Colleen Gardner
Commissioner of the NYS Department of Labor

“Green jobs are important for New York’s economic future, not only in terms of getting people back to work, but also to help residents and businesses reduce energy usage. This survey will provide information that will help us make sure green businesses have the skilled workers they need to grow.”
Renewable Energy/Energy Efficiency Business Survey

Some 20,000 businesses were surveyed in 7 industry clusters.
On-line survey with paper option.
All businesses with 25 or more workers were surveyed.
A sample survey (approx. one quarter) of smaller firms.
Focus on 4 industry clusters findings:

• Construction trades.
• Component manufacturers.
• Professional services (Ex-Legal Services).
• Building services.
Renewable Energy/Energy Efficiency Business Survey

• Focus on 6 regions
How Many Firms have Green Jobs?

<table>
<thead>
<tr>
<th>Component</th>
<th>Manufacturing</th>
<th>Professional Services</th>
<th>Building Services</th>
<th>Construction Trades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number with Green Jobs</td>
<td>260</td>
<td>2,840</td>
<td>4,110</td>
<td>7,370</td>
</tr>
<tr>
<td>Number in Cluster</td>
<td>1,660</td>
<td>10,300</td>
<td>25,540</td>
<td>26,980</td>
</tr>
<tr>
<td>Percent with Green Employees</td>
<td>15%</td>
<td>28%</td>
<td>16%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Estimated Number of Firms In New York State with One or More Employees in a Green Job
How Many Green Jobs in New York State?

Number of Workers in Green Jobs

Statewide Employment

<table>
<thead>
<tr>
<th>Component</th>
<th>Statewide Employment</th>
<th>Number of Workers in Green Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Trades</td>
<td>125,000</td>
<td>34%</td>
</tr>
<tr>
<td>Building Services</td>
<td>226,020</td>
<td>31%</td>
</tr>
<tr>
<td>Professional Services</td>
<td>250,000</td>
<td>23%</td>
</tr>
<tr>
<td>Component Manufacturing</td>
<td>400,000</td>
<td>7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>Green Employment</th>
<th>Cluster Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Trades</td>
<td>76,600</td>
<td>226,020</td>
</tr>
<tr>
<td>Professional Services</td>
<td>65,770</td>
<td>211,460</td>
</tr>
<tr>
<td>Component Manufacturing</td>
<td>31,490</td>
<td>138,600</td>
</tr>
</tbody>
</table>
Do Firms Expect their Green Employment to Change?

<table>
<thead>
<tr>
<th>One Year Change</th>
<th>Building Services</th>
<th>Construction Trades</th>
<th>Component Manufacturing</th>
<th>Professional Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow Larger</td>
<td>26%</td>
<td>30%</td>
<td>42%</td>
<td>38%</td>
</tr>
<tr>
<td>Unchanged</td>
<td>50%</td>
<td>42%</td>
<td>39%</td>
<td>45%</td>
</tr>
<tr>
<td>Become Smaller</td>
<td>1%</td>
<td>4%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>23%</td>
<td>24%</td>
<td>16%</td>
<td>14%</td>
</tr>
</tbody>
</table>

**For firms with green jobs, what is their expected change in green employment?**

**Number of Firms**: 4,110 7,370 260 2,840

**For firms without green jobs, do they expect to have green employment?**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
<th>Number of Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4%</td>
<td>71%</td>
<td>25%</td>
<td>21,430</td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td>57%</td>
<td>36%</td>
<td>19,600</td>
</tr>
<tr>
<td></td>
<td>3%</td>
<td>70%</td>
<td>27%</td>
<td>1,400</td>
</tr>
<tr>
<td></td>
<td>4%</td>
<td>74%</td>
<td>22%</td>
<td>7,460</td>
</tr>
</tbody>
</table>
What are the Most Common Credentialing Agencies preferred by Employers for their Green Jobs?

Top Green Credentials Preferred by Employers in New York State

- LEED Professional Services: 57%
- LEED Building Services: 16%
- LEED Component Manufacturing: 13%
- LEED Construction Trades: 21%
- AEE: 8%
- BPI: 8%
- BEAC: 5%
- AEE: 8%
- BPI: 14%
- NAHB: 9%
Which occupations are green, or greening in Building Services?

Common Green Occupations in Building Services

- Janitors, Cleaners & Porters: 40,720
- Supervisors of Building & Grounds: 6,070
- General Maintenance & Repair Workers: 5,960
- General & Operations Managers: 3,250
- Stationary Engineers & Boiler Operators: 2,700
- Landscaping & Groundskeeping Workers: 2,430
- Property & Real Estate Managers: 2,130
- Accountants & Auditors: 910
- Other Occupations: 1,600

Number of New York State Green Workers in Each Occupation
Which occupations are green, or greening in Construction Trades?

- Heating/Air Conditioning Mechanics & Installers: 8,720
- Carpenters: 7,900
- Plumbers, Pipefitters & Steamfitters: 7,780
- Electricians: 5,710
- First Line Supervisors of Construction Workers: 5,400
- Construction Managers & Project Managers: 5,100
- Construction Laborers: 4,050
- Insulation Workers; Floor, Ceiling & Wall: 2,460
- Sales Representatives, Services, All Other: 1,940
- Secretaries & Administrative Assistants: 1,860
- Insulation Workers; Mechanical: 1,850
- Carpenter Helpers: 1,780
- Plumber & Pipefitter Helpers: 1,780
- Cost Estimators: 1,750
- Electrician Helpers: 1,620
- Solar Photovoltaic Installers: 1,400
- Cement Masons & Concrete Finishers: 1,380
- Sheet Metal Workers: 1,260
- Roofers: 1,250
- Other Occupations: 6,650

Common Green Occupations in Construction Trades

Number of New York State Green Workers in Each Occupation
Which occupations are green, or greening in Component Manufacturing?

Common Green Occupations in Component Manufacturing

Number of New York State Green Workers in Each Occupation

- Team Assemblers: 690
- Structural Iron & Steel Workers: 640
- Sheet Metal Workers: 340
- Assemblers; Electrical & Electronic Equipment: 290
- Cutting, Punching & Press Machine Operators: 210
- First Line Supervisors of Production Workers: 150
- Machinists: 150
- Janitors, Cleaners & Porters: 140
- Sales Reps; Technical & Scientific Products: 130
- Inspectors, Testers, Sorters, Samplers, Weighers: 120
- Installation, Maintenance, and Repair Workers: 120
- Welders, Cutters, Solderers & Brazers: 120
- Computer-Controlled Machine Tool Operators: 110
- Structural Metal Fabricators and Fitters: 100
- Mechanical Engineers: 100
- Tool & Die Makers: 100
- Sales Reps; Not Technical & Scientific Products: 100
- Customer Service Representatives: 100
- Production, Planning & Expediting Clerks: 100
- Electrical Engineers: 90
- Drafters: 90
- Industrial Production Managers: 70
- Sales Engineers: 70
- Other Occupations: 70

Other Occupations: 600
Which occupations are green, or greening in Professional Services?

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Number of New York State Green Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects</td>
<td>9,080</td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>3,910</td>
</tr>
<tr>
<td>Drafters</td>
<td>3,710</td>
</tr>
<tr>
<td>Mechanical Engineers</td>
<td>2,900</td>
</tr>
<tr>
<td>Electrical Engineers</td>
<td>1,790</td>
</tr>
<tr>
<td>Civil Engineering Technicians</td>
<td>920</td>
</tr>
<tr>
<td>Landscape Architects</td>
<td>800</td>
</tr>
<tr>
<td>Environmental Scientists &amp; Specialists</td>
<td>780</td>
</tr>
<tr>
<td>Electrical &amp; Electronic Engineering...</td>
<td>650</td>
</tr>
<tr>
<td>Interior Designers</td>
<td>590</td>
</tr>
<tr>
<td>General &amp; Operations Managers</td>
<td>490</td>
</tr>
<tr>
<td>Mechanical Engineering Technicians</td>
<td>480</td>
</tr>
<tr>
<td>Secretaries and Administrative...</td>
<td>470</td>
</tr>
<tr>
<td>Environmental Engineers</td>
<td>420</td>
</tr>
<tr>
<td>Environmental Engineering Technicians</td>
<td>410</td>
</tr>
<tr>
<td>Construction Managers</td>
<td>380</td>
</tr>
<tr>
<td>Business Operations Specialists</td>
<td>370</td>
</tr>
<tr>
<td>Chemists</td>
<td>320</td>
</tr>
<tr>
<td>Other Occupations</td>
<td>3,020</td>
</tr>
</tbody>
</table>

Common Green Occupations in Professional Services

Number of New York State Green Workers in Each Occupation
Are Firms Able to Fill All Their Green Jobs in Central NY/Southern Tier?

- Construction Trades:
  - 7,370 Jobs (83% with difficulty recruiting for one green occupation, 10% for multiple occupations, 7% no difficulty)

- Professional Services:
  - 2,840 Jobs (83% with difficulty recruiting for one green occupation, 11% for multiple occupations, 6% no difficulty)

- Building Services:
  - 4,410 Jobs (88% with difficulty recruiting for one green occupation, 6% for multiple occupations, 6% no difficulty)

- Component Manufacturing:
  - 260 Jobs (66% with difficulty recruiting for one green occupation, 19% for multiple occupations, 15% no difficulty)
Are Firms Able to Fill All Their Green Jobs?

• The short answer – “In most cases, there's no problem.”

• In New York State, most businesses have little difficulty finding and hiring qualified employees for their green jobs.
Focus Groups/Interviews - Recruiting Workers

- Across the engineering, construction, and building services industries, businesses say they value hands-on experience, curiosity, and willingness to learn as important characteristics of their most successful recruits.

- Companies that recruited from internship or co-op programs spoke highly of these recruits and expressed a desire for more such programs.
Which Green-Job Occupations are in High Demand?

Green-Job Occupations Currently in High Demand in Building Services

- Stationary Engineers & Boiler Operators: 17%
- Janitors, Cleaners & Porters: 10%
- General & Operations Managers: 8%
- General Maintenance & Repair Workers: 8%
- Landscaping & Groundskeeping Workers: 6%
- Accountants & Auditors: 5%
- Supervisors of Building & Grounds Workers: 4%
- Property & Real Estate Managers: 3%

Percent of Companies Having Trouble Filling these Particular Green Jobs
Which Green-Job Occupations are in High Demand?

Green-Job Occupations Currently in High Demand in Construction Trades

- Plumber & Pipefitter Helpers: 32%
- Heating/Air Conditioning Mechanics & Installers: 30%
- Plumbers, Pipefitters & Steamfitters: 27%
- Sheet Metal Workers: 26%
- Construction Laborers: 21%
- Insulation Workers; Floor, Ceiling & Wall: 21%
- Insulation Workers; Mechanical: 15%
- Electrician Helpers: 15%
- First Line Supervisors of Construction Workers: 14%
- Carpenter Helpers: 13%
- Electricians: 12%
- Construction Managers & Project Managers: 11%
- Carpenters: 11%
- Secretaries & Administrative Assistants: 10%
- Cost Estimators: 9%
- Roofers: 8%
- Solar Photovoltaic Installers: 8%

Percent of Companies Having Trouble Filling these Particular Green Jobs
Which Green-Job Occupations are in High Demand?

**Green-Job Occupations Currently in High Demand in Component Manufacturing**

- Structural Metal Fabricators and Fitters: 58%
- Mechanical Engineers: 52%
- Sales Reps; Not Technical & Scientific Products: 40%
- Sales Engineers: 33%
- Computer-Controlled Machine Tool Operators: 27%
- Machinists: 25%
- Drafters: 24%
- Industrial Production Managers: 23%
- Electrical Engineers: 21%
- Inspectors, Testers, Sorters, Samplers, Weighers: 20%
- Assemblers; Electrical & Electronic Equipment: 18%
- Sales Reps; Technical & Scientific Products: 17%
- Production, Planning & Expediting Clerks: 14%
- First Line Supervisors of Production Workers: 13%

Percent of Companies Having Trouble Filling these Particular Green Jobs
Which Green-Job Occupations are in High Demand?

Green Job Occupations Currently in High Demand in Professional Services

Percent of Companies Having Trouble Filling these Particular Green Jobs

- Chemists: 53%
- Business Operations Specialists: 38%
- General & Operations Managers: 28%
- Mechanical Engineers: 26%
- Electrical Engineers: 23%
- Secretaries & Administrative Assistants: 20%
- Construction Managers: 20%
- Mechanical Engineering Technicians: 19%
- Electrical & Electronic Engineering Techs: 17%
- Civil Engineers: 14%
- Environmental Engineers: 14%
- Drafters: 8%
- Architects: 7%
- Environmental Scientists & Specialists: 6%
- Interior Designers: 3%
What is the Need for Additional Training?

- In Building Services, 65% (2,680) of companies require that their employees have some form of enhanced skills to deliver green services.
What is the Need for Additional Training in NYS?

- Approximately 77% (5,660) of green businesses in Construction Trades require employees to have enhanced skills in order to produce green products or services.
What is the Need for Additional Training in NYS?

- In Component Manufacturing, 81% (210) of companies require that their employees have some form of enhanced skills to deliver green services.
What is the Need for Additional Training in NYS?

• 89% of green employers in Professional Services require that employees have enhanced skills to produce green products or services.
Which green activities are businesses engaging in?

- Many firms are engaged in more than one green activity.
Thank you!

New York State Department of Labor
GJGNY goals include:

- Promotion of energy efficiency, energy conservation and clean technologies
- Reduce energy consumption and costs
- Reduce greenhouse gas emissions
- Support sustainable community development
- **Create green job opportunities, including for emerging, unemployed and displaced workforce**
Shadon M.
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