



## ***NECEC Workforce Development Group***

# ***Preparing the Green Jobs Future***

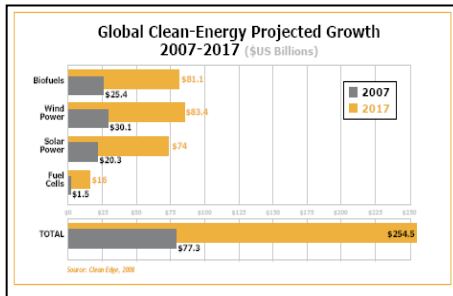
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# New England's 2020 Clean Energy Future

Leadership in VC Investment



100,000 New Clean Energy Jobs



All New Load Growth Met By Efficiency



20%+ Renewable Energy



Emissions 10%+ Below 1990 Levels



# ***Workforce Group Mission and Activities***



## **Workforce Development Mission:**

To accelerate the growth and success of New England's clean energy industry by assuring a world-class workforce of well-qualified professionals and technicians.

## **Projects and Programs (Current and In Development)**

- Employer surveys, job projections, workforce development needs research
- Multi-stakeholder workforce need forums, workshops and conferences
- Internship and Fellowship Programs
- Facilitating Mentor Relationships
- Career Advising for Students and Job Seekers
- Website services
  - \* Job and Internship Posting
  - \* "Cluster Map" of Clean Energy Companies and Institutions
  - \* Directory of Degree, Certificate and Training Programs in New England



# Major Job Growth Possible

## Estimated job growth relative to national averages

**2007**  
**~27,000**  
**jobs**



**2020\***  
**53,000 to**  
**80,000**  
**jobs**

	CT	MA	ME	NH	RI	VT
<b>RE Growth</b>	<b>Above average</b>	<b>High</b>	<b>Above average</b>	<b>Average</b>	<b>Above average</b>	<b>Above average</b>
<b>Drivers</b>	Biomass; fuel cell companies	High venture funding; Large public companies	Wind, biomass	Smaller scale wind, solar, biomass	Offshore wind	Wind manufacturing; biomass
<b>EE Growth</b>	<b>High</b>	<b>Above average</b>	<b>Above average</b>	<b>Average</b>	<b>Above average</b>	<b>High</b>
<b>Drivers</b>	Least cost procurement ramping 3x to \$300M EE spending	Least cost procurement likely; likely de-coupling	2x EE fund spending by 2010	Exploring least cost procurement	Least cost procurement begins 2009	Thermal efficiency programs

**Additional growth likely as category definitions broaden**

\* Contributing sources:  
American Solar Energy Society - RE/EE: Economic Drivers for the 21<sup>st</sup> Century 2007  
Massachusetts Technology Collaborative – MA Clean Energy Industry Census, August 2007  
Renewable Energy Vermont – Survey 2007  
US Bureau of Labor Statistics

\* Based on national average estimated growth rates through 2030. Estimates to be refined; Does not include indirect jobs



# ***Partnering with allies on clean energy workforce needs research***



## **Current Research In Progress**

- **Massachusetts Clean Energy “Census”/Workforce Needs Study**  
*(In collaboration with UMass Donahue Institute and MA Renewable Energy Trust)*
- **Northeast Energy Engineers and Professionals Workforce Survey**  
*(in collaboration with Association of Energy Engineers)*
- **Massachusetts Energy Efficiency Job Projection Study**  
*(in collaboration with National Grid, NStar, the Low Income Energy Affordability Network, GasNetworks, and The Barr Foundation)*
- **Analysis of job creation potential from the American Recovery and Reinvestment Act (ARRA)**



# *Examples of Regional Cooperation on Green Jobs*



## *Partnering with EPA Region 1 and NESCAUM to Bring People Together on Workforce Needs*

The Northeast States for Coordinated Air Use Management (NESCAUM) and EPA Region I, in association with the New England Clean Energy Council, convened an Energy Efficiency Workforce Development Forum

The goals of the Energy Efficiency Workforce Forum are:

- To share 'best practices' and build strategic relationships across states, across public and private sectors, and between the EE marketplace and trainers and educators;
- To identify key priorities and action items, such as policy changes, greater investments in training, and development of new curricula;
- To forward recommendations to the northeastern Governors and Commissioners



# Examples of New Job Creation in Green Jobs



## New Energy Efficiency Jobs Emerging

- **Home construction and renovation:** performance testing and computer diagnostics
- **Building controls and automation:** energy management systems
- **HVAC system installation and maintenance:** computer diagnostics / testing
- **Retrofit/replace** inefficient lighting and HVAC systems
- **Evaluation services:** building performance
- **Operation and Management services** that lower long term energy costs
- **RE systems and Distributed Generation:** installation and maintenance
- **Products:** manufacture, sales, installation and maintenance
- **R&D** of new products and services
- **Architecture and engineering specialists**
- **High skilled specialty trades** in organized labor



# ***Advocating for Legislation that Creates Jobs***

## ***Profile: Massachusetts Green Jobs Act***



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### ***Funding Green Collar Job Training Programs***

Massachusetts will soon award \$1,000,000 to five innovative green jobs training programs to help lift people out of poverty. The state received 15 applications, totaling \$4.65 million in requests. More green training grant programs are coming in 2009, including a \$1million workforce training grant.

### ***Building a Statewide Network of Energy Efficiency Training Centers***

The Commonwealth is investing \$1.875,000 to create three centers that will train people in residential, commercial and industrial energy efficiency skills. This initiative has created an unprecedented level of collaboration among in the state's community college and job training community.

### ***An Innovative Clean Energy Center for the Commonwealth***

The Green Jobs Act created and funded a Clean Energy Center to help create a clean energy future and assure a well-trained workforce for the green economy.



## ***Example of Partnering for Green Collar Jobs Programs for Pathways out of Poverty***



*Van Jones visits the 2009 green jobs class in Boston*

## **Profile: JFYNetWorks**

- Partners with NECEC Workforce Development Group on clean energy workforce needs study for technicians.
- The JFYNetWorks Environmental Technology job training program has trained over 300 environmental technicians.
- Nationally recognized, recipient of the EPA Environmental Merit Award.
- Launching new training programs in solar installation and energy auditing/energy efficiency in 2009.



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## Objectives of clean energy workforce development

- Provide coherent strategy to address energy efficiency labor demand and talent/skill gaps
- Promote growth of the clean energy economy with pipeline of well-trained, skilled workers
- Establish workers' education and training programs that match demand requirements
- Provide local higher skilled jobs



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## Needs/Issues

How do we define/segment the industry?

- What counts as a “clean energy” or “green” jobs?
- Is it energy efficiency & renewable energy only, or more?
- Companies are evolving and integrating across boundaries
- “New England” companies are also national and international
- A multitude of professional associations create their own definitions



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## Needs/Issues

- Employer/industry surveys to identify/confirm key needs
- Develop/refine certificate/degree & training programs
- Certification standards and authorities
- Information clearing house for jobs, internships, programs, training
- Funding



## Demand forecast/Needs assessment

- Need better data on job demand and labor gap in particular from business/ industry perspective
- Studies may overestimate size or do not provide specific profiles
- Limited standard definitions of field/job requirements/skill sets
- No standard occupation codes



## **Surveys/demand forecast needed to efficiently direct resources**

- What types of clean energy related positions are unfilled?
- How is industry defined?
- Where is growth? In what subsector?
- What skills are needed?
- What are immediate vs. long term needs?
- Multiple stakeholders, efficient assessment needed



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## Training and workforce development

- Each job category needs trained workers
- Public & private educational system not prepared to provide necessary training
- Internal training by business plus external industry-sponsored training is developing
- Need to match industry demand with supply sources



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## Lessons from other industry studies

- Define industry and workforce
- Involve stakeholders, test assumptions
- Avoid supply inefficiencies & “right-size”
- Evaluate results
- Track placement & performance
- Continuously cycle back with employers



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## Certification/Licensure/Standards

- Who sets?
- Who delivers?
  - State
  - Federal
  - Professional associations
- Governance issues
- Coordination & effectiveness/efficiency

