# Legislative Program Review and Investigations Committee Examination of Green Collar Jobs in Connecticut

Presented to the

Speaker's Green Jobs Coordination and Policy Committee

January 7, 2010

# The Four D's of Connecticut's Green Collar Field

- **Driving** the green movement
- **Defining** green collar jobs
- **Developing** the green collar field & future job opportunities
- **Delivering** education & training for green collar jobs

# What is *driving* CT's green movement?

- ARRA/U.S. Government
- Governor/Executive Order No. 23
- CT Legislature
- Private Sector

# ARRA/U.S. Government is driving the green movement

- Connecticut has already received $120 million in ARRA grants

- Supporting training in:
  - New green building code
  - Solar energy technologies
  - Precision manufacturing
  - Weatherization

# Governor's Executive Order No. 23: Connecticut Energy Sector Partnership Structure
# (formerly Connecticut Green Collar Jobs Council)

**CT Employment and Training Commission (CETC)**

**CT OWC**
Management & Staffing

**CBIA**
**CETC Member**
Management & Staffing

**CETC member co-chairs both groups**

## Connecticut Energy Sector Partnership (CETC Subcommittee)

**Role**
**Develop State Energy Sector Strategic Plan**
Guide and Monitor Plan Implementation

**Membership** *(* = current Green Jobs Council member)*
CETC*
Workforce Investment Boards*
One Stops
SDE*, DHE*, DEP*, DOL*, DECD*, OPM*
Community Colleges*
CT Clean Energy Fund*
Labor organizations – CT AFL-CIO*
Energy efficiency and renewable energy industry representatives and CBIA from Energy Consortium
DSS and/or CT Assn for Community Action (for weatherization connection)
State apprenticeship agencies
Legislative representatives

## Energy Workforce Development Consortium

**Role**
**Advise CT Energy Sector Partnership**
Assess and define industry skill needs

**Membership** *(* = Green Jobs Council member)*
Energy -related industry representatives
Workforce Investment Boards*
One-Stops
Labor organizations*
Community Colleges*
Technical High Schools
Other?

**Energy Consortium Committees**
Business and Education
Career Development

# Recent CT statutory changes are driving the green movement

Connecticut is the first state with a required green building code for public and private buildings

# How are green collar jobs being *defined*?

- U.S. DOL
- CT DOL/DECD
- DCP Licensing
- National Certifying Organizations

# Green collar jobs can fall into one of three categories:

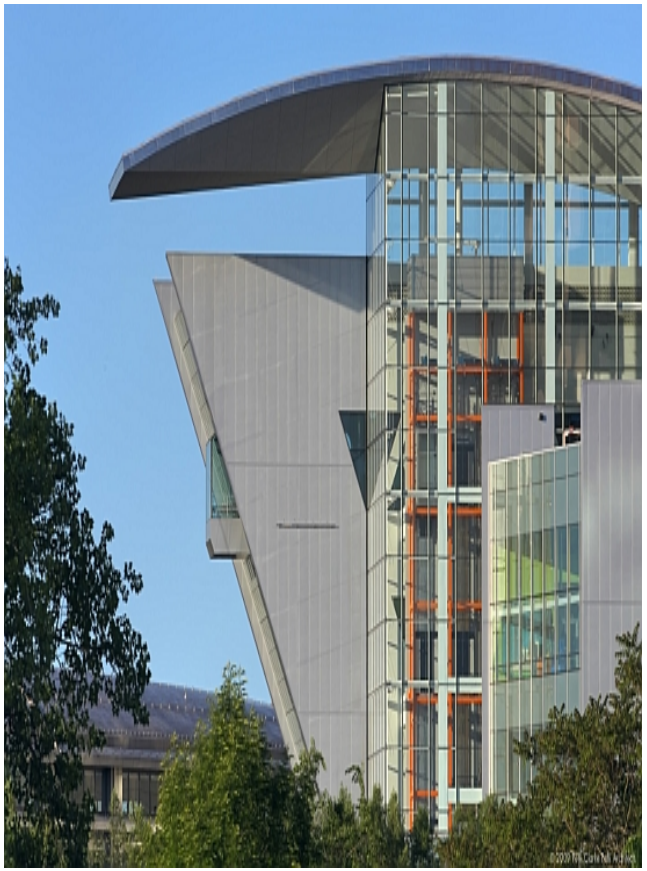
- Green **increased demand** occupations (e.g., chemical engineers)
- Green **enhanced skills** occupations (e.g., plumbers)
- Green **new and emerging** occupations (e.g., carbon trading analysts)

| Table I-5. Energy Efficiency and Renewable Energy Technologies | |
|---|---|
| **Energy Efficiency Technologies** | **Renewable Energy Technologies** |
| •High efficiency heating, ventilation, and air conditioning<br>•Efficient lighting<br>•Efficient home appliances<br>•Water heating<br>•Pumps, motors, and drives<br>•Building envelope | •Fuel cells<br>•Solar (PV and solar hot water)<br>•Wind<br>•Geothermal<br>•Hydrogen<br>•Power grid infrastructure |

Source: Connecticut Renewable Energy/Energy Efficiency Economy Baseline Study, Phase 1 Deliverable: Full Report, March 27, 2009, by Navigant Consulting, Inc.

# Who is *developing* the green collar field and where will the job opportunities be?

- CT DOL, WIBS
- DSS, CAP Agencies
- CETC/OWC
- CBIA
- Private green companies



*Regardless of the methodology used to define green collar jobs, all show a future increase in green jobs.*

| **Table I-12. Growth in Connecticut's Green Occupations** | | | |
|---|---|---|---|
| **Occupation** | **Estimated # Employed in 2006** | **Projected # Employed in 2016** | **Demand** |
| Hydrologist | 97 | 121 | ↑25% |
| Geoscientist | 174 | 209 | ↑20% |
| Environmental Engineer | 747 | 891 | ↑19% |
| Environ. Science & Protection Tech. | 392 | 458 | ↑17% |
| Environmental Engineering Technician | 216 | 248 | ↑15% |
| Natural Sciences Manager | 933 | 1,062 | ↑14% |
| Water & Liquid Waste Treatment Plant & System Operator | 856 | 955 | ↑12% |
| Environ. Scientist & Specialist | 685 | 761 | ↑11% |
| Nuclear Power Reactor Operator | 108 | 113 | ↑5% |
| **Total** | **5,493** | **6,148** | **↑12%** |

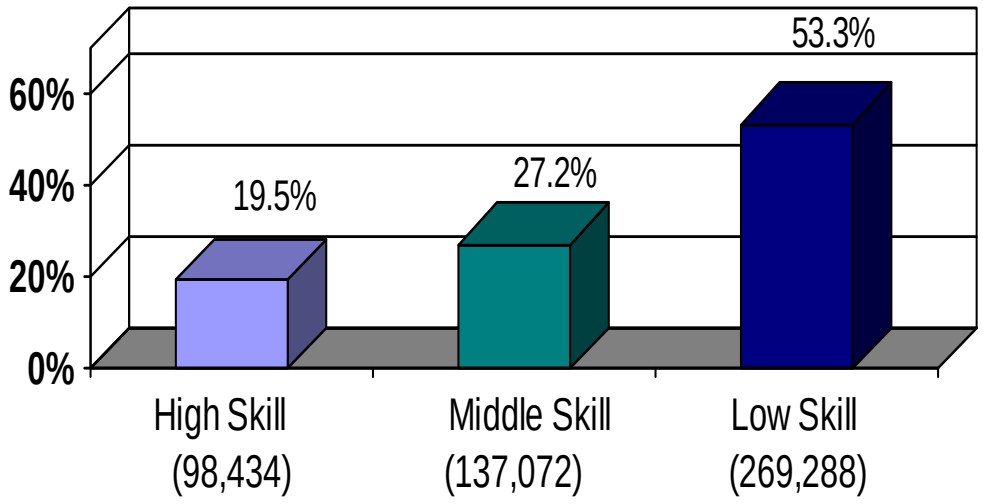
# Where is green collar job education and training being *delivered*?

- Higher Education
- Technical High Schools
- Connecticut Proprietary Schools

# Level of education required by green collar jobs

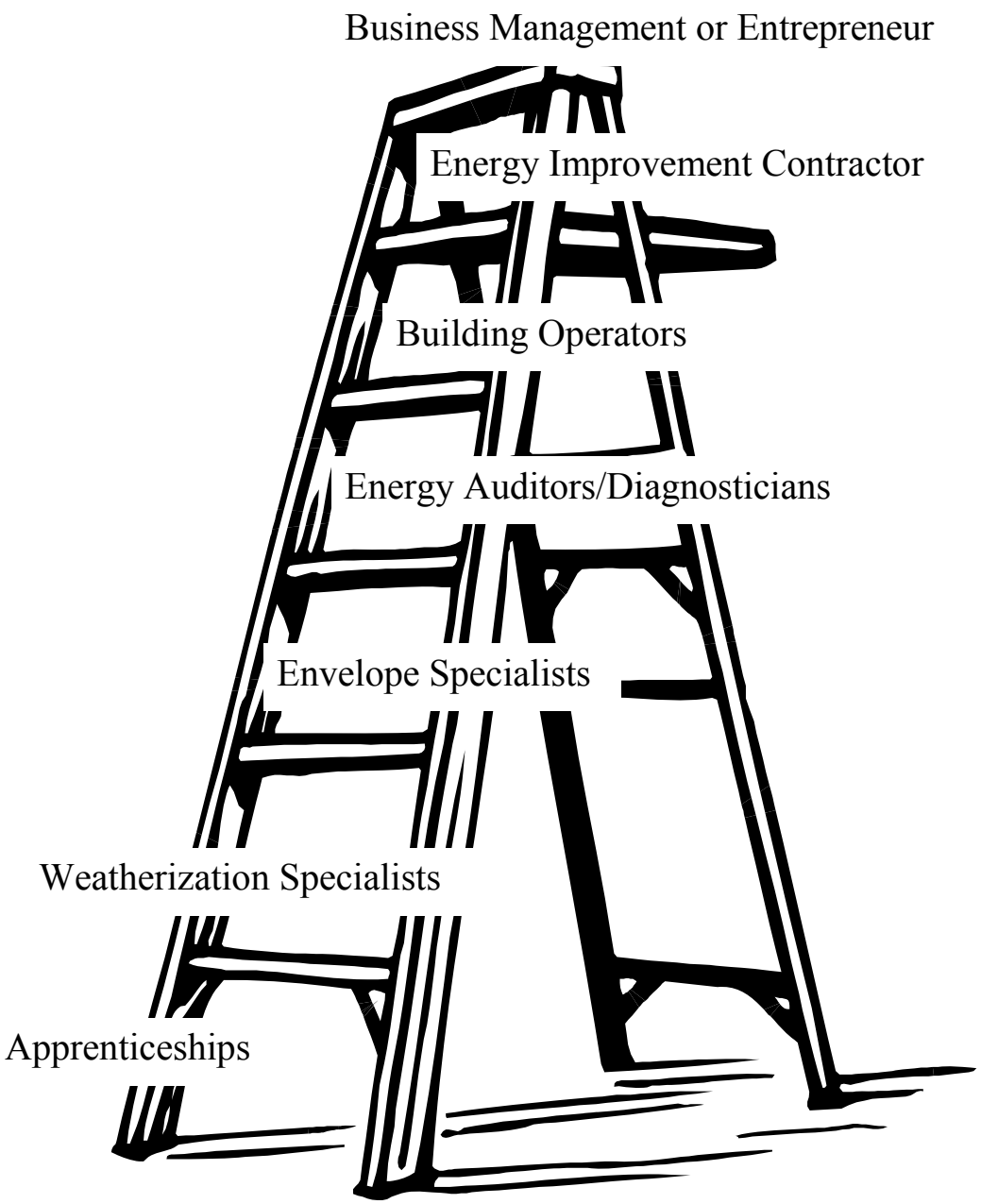
Over half of green collar jobs may not require any postsecondary education

**Figure I-3. Educational and Skill Level of Green Collar Jobs**




Source: CT DOL Occupations in a Green Industry Report, April 2009.

Figure III- .Potential Green Collar Career Ladder




Source: Building a Green Collar Workforce, The Institute for Sustainable Energy at Eastern Connecticut State University.

# Higher ed is helping prepare the green workforce in several ways:

1. Offering majors or minors in directly related fields
2. Offering majors or minors associated with the green movement
3. Establishing centers or institutes
4. Offering certificates
5. Offering individual courses

# Technical High Schools are helping to prepare the green workforce in several ways:

- Training students to install wind turbines
- Offering bioscience and environmental technology program
- Working with community colleges to develop career paths
- Learning for Clean Energy Innovation program

# Green Workforce Development Barriers Related To:

- Elementary and secondary school
- Postsecondary education institutions
- Difficulty in making accurate projections
- Current economic challenges
- State agency organization, programs, and policies

# Possible barrier related to elementary and secondary school

*Lack of awareness or understanding of what green collar jobs are*

**Wherever possible, explain green collar jobs using the U.S. Department of Labor taxonomy and EE/RE categorization (Rec. #1)**

# Possible barriers related to postsecondary education institutions

*Lack of uniformity in naming of green certificate programs*

**The Connecticut Community College System should implement uniform naming of green certificate programs across all member colleges (Rec. #2)**

# Possible barriers related to postsecondary education institutions

*No central repository for the many green initiatives emerging across higher education*

**The Connecticut Employment and Training Commission and the Connecticut Energy Sector Partnership should develop repository of green efforts (Rec. #3)**

# Possible barrier related to difficulty in making accurate demand projections

- *Green collar jobs are just emerging and the official coding system has not yet caught up with these green occupations*
- *Until the green field is better defined, it will be difficult to make accurate demand projections*
- *A recently awarded ARRA grant will address some of the challenges in making accurate demand projections*

# Possible barriers related to current economic challenges

*Few resources apart from ARRA stimulus funds to purchase the expensive equipment required to train students*

**Educational systems should develop agreements to share equipment (Rec #4)**

# Possible barriers related to current economic challenges

*Lack of career ladders/lattices to move individuals out of entry-level green collar jobs that are dependent on temporary ARRA funding*

**Connecticut postsecondary education institutions and state workforce development agencies should create career ladders (Rec. #5)**

# Possible barriers related to state agency organization, programs, and policies

*Lack of awareness by colleges of green efforts occurring within other colleges in different higher education systems*

**The Departments of Higher Education and Education should prepare an annual cross-system list of green offerings and of inventory of green-related equipment. (Rec. #6)**

# Possible barriers related to state agency organization, programs, and policies

*Sometimes institutions are unaware of green efforts occurring within colleges in different higher education systems*

**Staff from Center for Clean Energy and the Institute for Sustainable Energy should meet to discuss possible collaborations on green initiatives. (Rec. #7)**

# For More Information…

- Staff Findings and Recommendations of the Alignment of Postsecondary Education and Employment

- www.cga.ct.gov/pri/2009_APEE.asp