

# Clean Energy Workforce Development: Growing Green Jobs to Achieve Climate and Energy Goals

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State and Local Climate and Energy Program



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# What are Green Jobs?

- There is no commonly accepted definition of “**green jobs**”
  - One U.S. Department of Labor effort to catalog green jobs definitions produced more than a dozen different definitions from reputable sources.
- Vice President Biden’s Middle Class Task Force has used:

*“Green jobs are jobs that provide products and services which use renewable energy resources, reduce pollution, conserve energy and natural resources and reconstitute waste.”*

# What are Clean Energy Jobs?

- **Clean energy (CE) jobs are a *subset* of green jobs related to:**
  - **renewable energy (RE)**
  - **energy efficiency (EE)**
  - **clean combined heat and power (CHP)**

- American Solar Energy Society defines clean energy jobs as:

*“A job in the RE industry consists of an employee working in one of the major RE technologies—wind, photovoltaics, solar thermal, hydroelectric power, geothermal, biomass, and fuel cells and hydrogen.*

*A job in the EE industry consists of an employee working in a sector that is part of the EE industry, such as an energy service company or the recycling, reuse, and remanufacturing sector. It also includes some employees in industries in which only a portion of the output is classified as within the EE sector, such as appliances, HVAC systems, construction, auto manufacturing, and others.*

*Jobs in RE & EE [can] include persons involved in RE & EE activities in federal, state, and local government, universities, nonprofits, trade and professional associations, non-governmental organizations, foundations, consultancies, investment companies, and other related organizations.”*

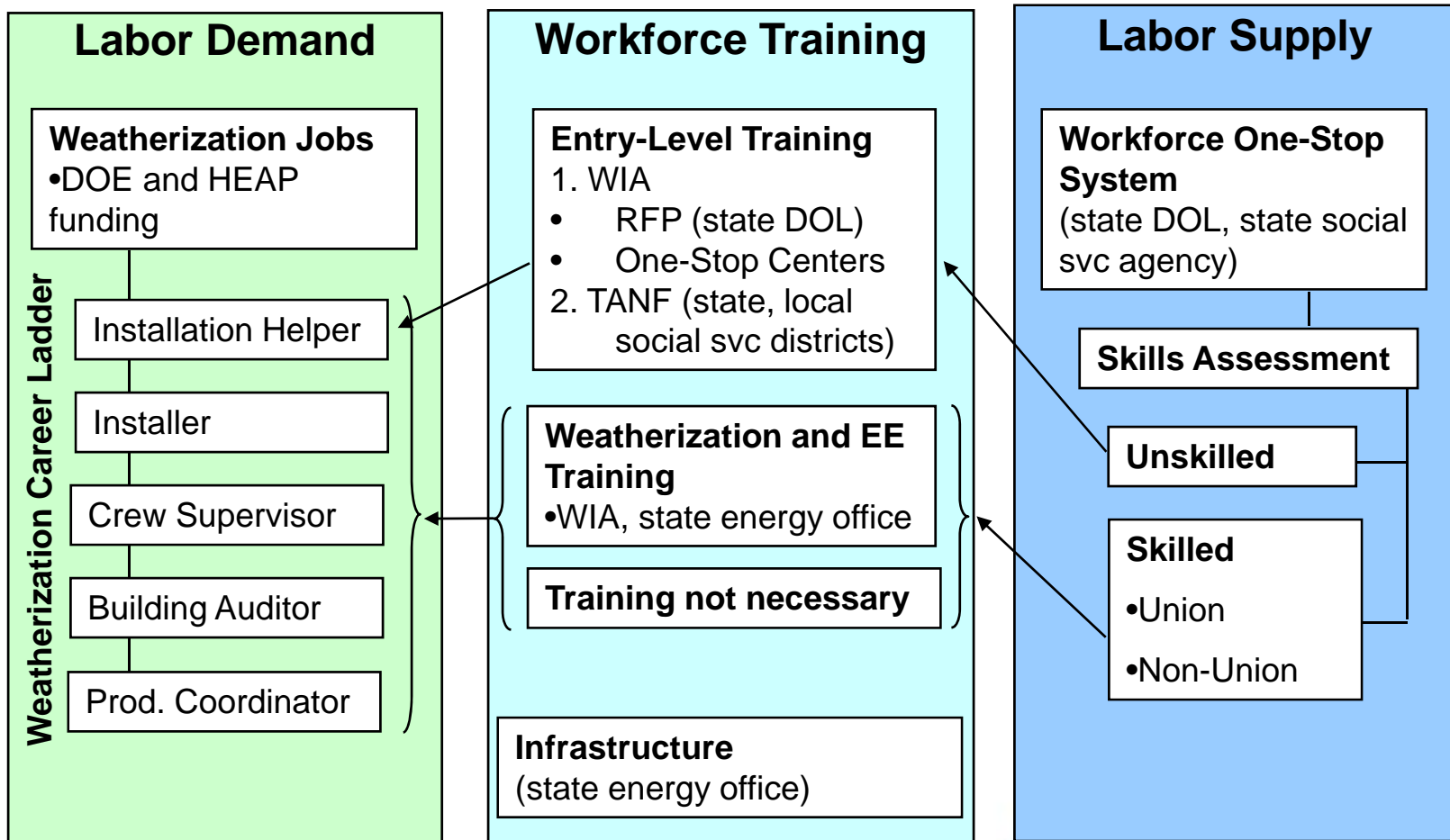
# Why Does EPA Care About Clean Energy Jobs?



1. To reduce greenhouse gas (GHG) emissions, the U.S. needs to reach significant EE and RE goals.
2. An appropriately trained RE and EE workforce will be needed to implement CE programs.
3. As the CE market grows, the successful expansion of national, state, and local CE programs will ultimately hinge on:
  - The supply of professionals to perform the work
  - The quality of the services delivered
  - The ability to document energy savings, cost savings, GHG reductions, and jobs

# What is Clean Energy Workforce Development?

## Weatherization Example (New York State)



Courtesy of Anthony Joseph, New York State Department of Labor

# Training

- **Traditional providers** of workforce training:
  - Community Colleges
  - Vocational/Technical High Schools
  - Community-Based Organizations
  - Labor Unions
  - Trade Associations
  - Four-Year Colleges and Universities
- Best practice: Training providers should be **accredited**.
  - Institute for Sustainable Power Quality (ISPQ)
    - Accreditation for Training Programs
    - Accreditation for Continuing Education Providers
    - Certification for Independent Master Trainers
    - Certification for Affiliated Master Trainers
    - Certification for Instructors
  - ANSI/ISO/IEC 17024

See also: *IREC Renewable Energy Training: Best Practices & Recommended Guidelines*  
[http://www.irecusa.org/fileadmin/user\\_upload/WorkforceDevelopmentDocs/Training-BestPractices\\_Sept\\_2008\\_FINAL.pdf](http://www.irecusa.org/fileadmin/user_upload/WorkforceDevelopmentDocs/Training-BestPractices_Sept_2008_FINAL.pdf)

# Certifications

renewable  
energy

- **North American Board of Certified Energy Practitioners (NABCEP)**

- Certified Energy Practitioner: solar photovoltaic (PV) installers, solar thermal installers, *small wind (in dev't)* [www.nabcep.org](http://www.nabcep.org)

- **Building Performance Institute (BPI)**

- Certified Building Analyst, Building Envelope Professional, HVAC: weatherization auditors, energy efficiency installation personnel, professionals in the residential and multifamily building performance contracting industry; *Energy Auditor and Air Sealing/Duct Sealing Technician (in dev't)* [www.bpi.org](http://www.bpi.org)

- **Residential Energy Services Network (RESNET®)**

- Certified Home Energy Rater: raters that evaluate buildings based on a relative energy use index called the HERS® Index [www.resnet.us](http://www.resnet.us)
- In California: CalCERTS [www.calcerts.com](http://www.calcerts.com), CHEERS [www.cheers.org](http://www.cheers.org), CBPCA [www.cbpca.org](http://www.cbpca.org)

- ***Federal Recovery through Retrofit (in dev't)***

- Analyzing existing programs/best practices to determine minimum voluntary national certification standard(s)

energy efficiency

# Other Federal Activity

- DOE
  - Solar Market Regional Resource & Training Providers
    - Will provide training and professional development to instructors who are creating or improving existing training courses for their local **solar photovoltaic** or **solar heating and cooling** installation workforce
  - Weatherization Assistance Program – Training and Technical Assistance funding opportunities *forthcoming*
    - <http://www.energy.gov/recovery/funding.htm>
- DOL Green Jobs Act funding
  - \$500 million to grantees in 5 categories
    - <http://www.doleta.gov>
- Jobs for Main Street Act of 2010 (H.R. 2847)
  - Passed U.S. House 12/16/09
  - \$48.3 billion – includes funding for education, summer youth employment, college work study, job training in high growth fields, small business loans, etc.

# EPA / DOE Rapid Deployment Energy Efficiency (RDEE) Toolkit

[http://www.epa.gov/cleanenergy/energy-resources/ee\\_toolkit.html](http://www.epa.gov/cleanenergy/energy-resources/ee_toolkit.html)

- **Supports state/local energy efficiency efforts** during economic stimulus spending
- **Residential and commercial sector topics** across 10 program areas:
  - ENERGY STAR labeled products, Energy Audits, Home Performance with ENERGY STAR, Efficient HVAC, Prescriptive, Benchmarking and Performance, Custom, Retro-commissioning, On-Site Energy Manager, ENERGY STAR Commercial Food Service
- **Planning Guide.** Includes key considerations in program selection and budgeting, such as reasonable program costs, energy savings, and jobs to expect from each program.
- **Implementation Guide.** Includes information about benchmarking, the role and use of implementation contractors, strategies for customer targeting and marketing, training needs and resources, and tracking and estimating results.
- **RDEE Program Snapshots and Templates.** Provide a more detailed look at each of the RDEE programs, including several RFP and marketing plan templates. Includes:
  - Target market
  - Infrastructure requirements
  - Staffing requirements and job creation
  - Training needs and resources
  - Implementation timeline
  - Program performance (savings, cost, and cost-effectiveness)
  - Evaluation, measurement & verification (EM&V) support
  - Resources and assistance (including links to other materials on the Web)

# More Information

## **State-focused clean energy workforce development materials:**

**background paper, resources, PPTs**

[www.epa.gov/cleanenergy/energy-programs/state-and-local/state-forum.html#twoa](http://www.epa.gov/cleanenergy/energy-programs/state-and-local/state-forum.html#twoa)

## **Local Workforce Materials Coming Soon:**

[www.epa.gov/statelocalclimate/local/topics/workforce.html](http://www.epa.gov/statelocalclimate/local/topics/workforce.html)

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[www.epa.gov/cleanenergy/stateandlocal](http://www.epa.gov/cleanenergy/stateandlocal)



# Appendix



# Residential Energy Training Resources

- **Weatherization**

- Weatherization Assistance Program (WAP) Training Centers
  - [www.waptac.org/sp.asp?mc=training\\_facilities](http://www.waptac.org/sp.asp?mc=training_facilities)
- BPI Training Affiliates
  - [www.bpi.org/content/affiliates/affiliation-map.php](http://www.bpi.org/content/affiliates/affiliation-map.php)

- **Home Energy Ratings**

- RESENT Training Providers
  - [www.resnet.us/programs/training/default.htm](http://www.resnet.us/programs/training/default.htm)

- **Renewable Energy Training Providers**

- Interstate Training Providers
  - <http://irecusa.org/trainingCatalog/>

- **National Conferences**

- Affordable Comfort Institute <http://www.affordablecomfort.org/>
- Weatherization Assistance Program Technical Assistance Center <http://www.waptac.org>