2021-2022 Better Buildings WEBINAR SERIES

Register Today: betterbuildingsolutioncenter.energy.gov/better-buildings-webinar-series
Classroom to Career: Advancement in Energy Efficiency Jobs

January 18, 2022
11:00 am – 12:00 pm EDT
Agenda

Introduction to the Workforce Accelerator – US DOE

Supporting Diversity in the Building Efficiency Workforce – City of Milwaukee

Building Energy Controls Apprenticeship – Lane Community College

Collaboration Across the Clean Energy Workforce – IREC Building Energy

Audience Q&A
Clean Energy Workforce Vision:

The United States has a nationally-representative workforce of sufficient size, skill, and compensation to carry out an equitable transition of America’s energy infrastructure to achieve net-zero greenhouse gas emissions no later than 2050.

Goal of Efforts:

To support this vision, EERE will work to increase awareness of the clean energy workforce, support strong skills development among those that make clean energy deployment possible, streamline pathways for new people to enter the clean energy workforce, and support action that increases growth and stability of clean energy sectors.
Who is the Green Buildings Workforce?

Green Building Technology & Product –

<table>
<thead>
<tr>
<th>Development</th>
<th>Design</th>
<th>Deployment</th>
<th>Diffusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research &amp; Manufacturing</td>
<td>Architecture &amp; Engineering</td>
<td>Construction &amp; Operations</td>
<td>Services &amp; Programs</td>
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2.3+ Million Workers in Across These Industries in Efficiency Alone
Strategies to Address Workforce Challenges

**Goal:** Ensure career pathways for a diverse and qualified building efficiency workforce that enables high performance buildings.

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**Early Career Exposure & Education**

**Low/Negative Perception**
- **Build Interest**
  - Showcase careers in building efficiency as welcoming, impactful, and rewarding.

**Confusing Pathways**
- **Streamline Paths**
  - Clarify pathways from education and training to entry-level and long-term careers.

**Poor Quality Installation**
- **Improve Skills**
  - Enhance continuing education. Include building science competencies in existing training pathways.

**Lacking Market Stability**
- **Support Demand**
  - Support durable market demand growth for skilled workers, including by showcasing value of green building skills.

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[Image of the Better Buildings logo]
Better Buildings Workforce Accelerator

U.S. DOE has partnered with 40+ national stakeholders in setting and meeting goals to –

• Increase interest and awareness of building energy efficiency careers nationwide
• Simplify and streamline pathways from education training, and apprenticeship to careers
• Augment existing education, training, and apprenticeship programs to fill knowledge gaps and improve skill competencies

Each Partner Agrees To:

✓ Work with DOE to establish a SMART goal aligned with their organization’s activities and the Accelerator’s mission
✓ Participate in quarterly partner meetings and technical assistance workshops
✓ Collaborate by sharing best practices and lessons learned with other accelerator partners
✓ Share updates on their progress toward their SMART goal
Better Buildings Workforce Accelerator Activities

Quarterly Calls to Share Updates on Progress

» 90-minute meetings with round-robin updates & 1-2 presenters

Workshops & Other Technical Assistance Opportunities

» Deep dive virtual meetings on specific topics with subject matter experts, for example:
  » Curricula review for engineering students
  » Best practices on for diversity, equity & inclusion
  » Lessons learned on heat pump installation trainings

Amplification Of Progress & Success Stories

» Better Buildings blog posts, social media, speaking opportunities, videos, etc.
» Reach out to leadership team if you think you have a story worth sharing!
Year In: Cumulative Progress on Milestones

2 new workforce programs launched

95 trainings offered

21,000 training participants served

400,000 people reached
Partners with Significant Progress Toward Their Workforce Goals!
Beyond the Better Buildings Workforce Accelerator

Analysis for Strategy Development

- Background Research and Information to Support a Building Technologies Office Workforce Development Strategy
  - Sarah Tratt and Lucas Phillips, National Renewable Energy Laboratory

Research & Development Funding Opportunities

- Advanced Building Construction Initiative

- What is ABC?
  - Learn about ABC’s ability to develop energy-eficient technologies and methods for buildings in the U.S. construction and renovation industry.

» Research and publications on workforce and market trends

» Engagement with labor and industry to better understand needs, concerns, and successes

» Over $15M in previously funded cooperative agreements to develop and deploy education & training resources

» Continued work on strategy to strategically support career pathways, market demand for skilled labor, and family-sustaining wages in energy efficiency
Please go to www.slido.com using your mobile device, or by opening a new window

Enter Event Code

#DOE
Welcome poll

*We want to learn more about you!*

Please go to [www.slido.com](http://www.slido.com) and enter code #DOE to respond
Today’s Presenters

Erick Shambarger
City of Milwaukee

Roger Ebbage
Lane Community College

Laure-Jeanne Davignon
Interstate Renewable Energy Council
Erick Shambarger
City of Milwaukee
Green Jobs Accelerator

CITY-COUNTY TASK FORCE ON CLIMATE AND ECONOMIC EQUITY
The City of Milwaukee Common Council established the City County Task Force on Climate and Equity in 2019 (CCFN 190445) to make recommendations on how to address the ongoing climate crisis and mitigate racial and economic inequity through “green” jobs.

**Members Organizations**

- Milwaukee Common Council
- Milwaukee County Board
- Citizen Action of WI
- Community Advocates Public Policy Inst.
- Milwaukee Area Labor Council
- Wisconsin Climate Table
- NAACP
- Sierra Club
- Clean Wisconsin
- Environmental Collaboration Office
Climate and Equity Plan

Goals:

➢ Reduce community greenhouse gas emissions 45% by 2030 and net zero by 2050

➢ Create green jobs and improve racial and economic equity by creating jobs that pay $40,000+; focus recruitment on people of color

milwaukee.gov/ClimatePlan
Now is the Time to Invest in Building a Diverse Clean Energy Jobs Workforce

➢ Dedicated, aligned partners serve as Champions
➢ Opportunity to leverage long-term federal partnership with Dept. of Energy
➢ New federal investments in Clean Energy infrastructure will require a ready and trained workforce
➢ These are quality jobs that are growing but have low worker diversity
U.S. Department of Energy
Better Buildings Workforce Accelerator - Overview

➢ 3-year effort to support the development of a building energy efficiency talent pipeline

➢ DOE provides technical assistance and connections with a national community of practitioners, providing a unique opportunity and resources for the City of Milwaukee

➢ Connection to stackable industry credentials along a career pathway
Green Jobs: Good Wages but Low Diversity

- Substantial quantity of total jobs with positive 10-year growth rates
- Need for more diversity
- Wages are mostly family-supporting, pointing to a lot of advancement and economic opportunities
- Weatherization workers could be trained and paid more to reduce turnover (recommend $20/hour+)

<table>
<thead>
<tr>
<th>Description</th>
<th>Median Annual Earnings</th>
<th>2020 Turnover Rate</th>
<th>Typical Entry Level Education</th>
<th>Typical On-The-Job Training</th>
<th>Males % of Occupation</th>
<th>Total Diversity % of Occupation</th>
<th>White % of Occupation</th>
<th>Median Hourly Earnings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricians</td>
<td>$70,625.75</td>
<td>65%</td>
<td>High school diploma or equivalent</td>
<td>Apprenticeship</td>
<td>97%</td>
<td>16%</td>
<td>84%</td>
<td>$33.95</td>
</tr>
<tr>
<td>Plumbers, Pipefitters, and Steamfitters</td>
<td>$72,155.02</td>
<td>50%</td>
<td>High school diploma or equivalent</td>
<td>Apprenticeship</td>
<td>99%</td>
<td>15%</td>
<td>85%</td>
<td>$34.69</td>
</tr>
<tr>
<td>Heating, Air Conditioning, and Refrigeration Mechanics and Installers</td>
<td>$62,768.35</td>
<td>42%</td>
<td>Postsecondary nondegree award</td>
<td>Long-term on-the-job training</td>
<td>99%</td>
<td>13%</td>
<td>87%</td>
<td>$30.18</td>
</tr>
<tr>
<td>Landscape Architects</td>
<td>$50,533.85</td>
<td>34% Bachelor's degree</td>
<td>internship/residency</td>
<td>Internship/residency</td>
<td>70%</td>
<td>11%</td>
<td>89%</td>
<td>$24.30</td>
</tr>
<tr>
<td>Insulation Workers, Floor, Ceiling, and Wall</td>
<td>$35,592.44</td>
<td>74% No formal educational credential</td>
<td>Short-term on-the-job training</td>
<td>Short-term on-the-job training</td>
<td>92%</td>
<td>Insf. Data</td>
<td>73%</td>
<td>$17.11</td>
</tr>
</tbody>
</table>

Source: Economic Modeling Systems International (EMSI), Milwaukee County
Green Jobs: Variety and Multiple Entry Points

**Variety of Occupations**

- Electricians and laborers supporting energy efficiency and renewable energy
- HVAC and Building Controls
- Weatherization and lead abatement workers
- Water jobs, especially plumbing and water/wastewater systems
- Housing construction/deconstruction
- Landscaping/arborist
- Manufacturing of sustainable technologies
- Professional jobs- Coordinators, consultants, engineers, building operators, etc.
- Entrepreneurial opportunities

**Entry Level Access to Jobs with Career Pathways and Advancement Opportunities**
Green Jobs: Local Training Providers

Trade unions like IBEW provide training and family-supporting wages and benefits

MATC is a pathway to many trades and green jobs, particularly building automation and controls

The Wisconsin University system has expanded offerings in water and energy technology

The Midwest Renewable Energy Association provides training in solar energy

MWERC training program in electrical assembly

https://www.matc.edu/course-catalog/manufacturing-construction-transportation/automated-building-systems.html
So how do we get more people of color employed in family-supporting green jobs?

Electrician Journeyman Michele Robinson; photo by Susan Bence
Green Job Accelerator

Clarify Pathways
- (Green job maps, website, etc)

Build Excitement!
- (Recruit and career exploration through MPS, mentors, advertising, events, Direct Connect MKE, Mobile Green Jobs Exhibit, Century City site)

Build Skills
- High School exposure
- Connect people to existing training programs with supports
- Upskill weatherization workers

Transitional Jobs + Career ladders
- e.g., landscaping -> higher wage/skills

Employ
- MOUs with Employers about EDI goals

Community Benefits Agreement for Public Projects

Black & Brown owned Business Development

Roger Ebbage
Lane Community College
Lane Community College Energy Management w/Controls

Building Energy and Controls Apprenticeship Program (BECA)
Building Energy and Controls Apprenticeship Program (BECA)

• What are the BECA Components?

  • Related Training
    • The Online Energy Management Two-year AAS Degree Program

  • Paid, On-the-Job (OJT) training – 2000 hours!
    • OJT is Facilitated by Training Agents who Operate Buildings and are Willing to Train Apprentices!

  • Cumulative Exam
    • The Association of Energy Engineers (AEE) ANSI 17024 CEM Exam
Building Energy and Controls Apprenticeship Program (BECA)

• How does BECA Work?

• Students Enroll in The Lane Energy/Controls Degree Program

• Must Complete the 1st Year of the Program to Qualify for OJT Hours Beginning Middle Summer Term

• CEM Exam upon Completion of Degree program and OJT
Laure-Jeanne Davignon
Interstate Renewable Energy Council
Interstate Renewable Energy Council (IREC)

IREC builds the foundation for rapid adoption of clean energy and energy efficiency to benefit people, the economy, and our planet.
IREC areas of engagement

IREC leads efforts to grow a diverse and qualified clean energy workforce by implementing strategies that unite stakeholders to improve recruitment, education, training, and job placement outcomes.

Training to job pipelines & outreach

Credentials and Training Provider Support

Training development

Tools and Resources

Clean Energy Workforce Alliance  Solar Ready Vets  Puerto Rico solar workforce

Credentials and technical assistance: DOE WAP Personnel certification Micro-credentials

WAP Grantee Training  Solar, Storage, EV, and GEB for code officials (EMPOWERED)  SolarAPP+ rapid permitting

Solar Jobs Census  Career Maps  National Solar Licensing Database  Best practices series  Online training guidance
New employees

Existing workers and owners (business, CBOs, government, etc.)
What is the Alliance?

- Cross sector effort uniting all clean energy workforce stakeholders
- Accelerate development of a diverse and highly-skilled workforce
- Foster more effective and inclusive recruitment, training, education, and job placement

With support from Bank of America
Projected Outcomes

- A community of practice to facilitate information sharing and eliminate duplication of effort
- National Clean Energy Workforce Plan with examples of successful programs and details about gaps
- Strategic engagement of stakeholders positioned to address gaps
How can you participate?

- Sign up for the Alliance!
- Participate in convenings, as relevant
  -- January 31, 2 ET - Clean Energy Employers
- Align programs with Alliance findings
  -- Data to support funder requests
Discover the many career options in energy efficiency! Green Buildings Career Map features:

A dynamic overview of energy efficiency industry sectors, including:

I. Architecture, engineering, & other professional services

II. Building operations/facility management

III. Construction & retrofitting

- 55 jobs across industry sectors
- Over 100 advancement routes
- A unique section identifying "New-Collar" Green Jobs
Discover the exciting range of career pathways in energy efficiency!

Are you a school or career counselor, training provider, workforce professional, prospective student, or military veteran? The diversity of job opportunities and advancement potential makes the energy efficiency industry an attractive and rewarding career.

Did you know?

In 2020, the energy efficiency sector employed 2.1 million Americans (2021 U.S. Energy & Employment Report).

How can the Green Buildings Career Map be used?

- Career exploration
- Recruitment
- Student advisement
- Showcasing multiple career pathways
- Inform curricular content
- Help transitioning veterans
GRID ENABLED BUILDING PRODUCTS

- FREE educational resources
- Audiences: code officials, building owners, and managers
- NEW Clearinghouse website with ongoing updates and dynamic resources

www.sustainableenergyaction.org
Q & A

Submit Questions
www.slido.com event code #DOE
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Rooftop solar is a common renewable energy strategy, but owners and operators are now exploring potential financial benefits to the value of commercial and industrial properties. Learn from several building owners and managers on how they made the business case for solar PV and found increased asset value during appraisal or at the time of sale. This webinar will highlight multiple building types and financial models for solar PV.
Interested in Learning More?

Download the Additional Resources PDF from the chat box.

- Better Buildings Solution Center resources
- Speaker-chosen content
- Accessible now