Growing and Supporting the Energy Efficiency Workforce

Maggie Molina, Senior Director for Policy, ACEEE

Webinar to the National Council of State Legislatures (NCSL)

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The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

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Why Energy Efficiency?

States Reap Multiple Benefits from Energy Efficiency
Efficiency is still on national average our least-cost electricity resource

Molina and Relf 2018. *Energy efficiency costs are utility/program administrator costs for 2015 and do not include participant costs. The rest of the data are from Lazard 2017 and show unsubsidized costs.*
A “Layer Cake” of Benefits from Electric Energy Efficiency

Utility System Benefits
- Power Supply
- T&D Capacity
- Environmental
- Losses and reserves
- Risk
- Credit and Collection

Participant Benefits
- Other Fuels
- Water, Sewer
- O&M Costs
- Health Impacts
- Employee Productivity
- Comfort

Societal Benefits
- Air Quality
- Water
- Solid Waste
- Energy Security
- Economic Development
- Health Impacts

Source: Regulatory Assistance Project
Urban Energy Burdens

Rural Energy Burdens

Low-income energy burden quartiles
Economy has grown without runaway electricity consumption

Market failures justify energy efficiency policies

• Imperfect information
• Split incentives
• Externalities of environmental, health and security costs
• Regulatory barriers from monopoly power
Americans Still Favor Energy Conservation Over Production

Which of the following approaches to solving the nation's energy problems do you think the U.S. should follow right now -- (emphasize production of more oil, gas and coal supplies (or) emphasize more conservation by consumers of existing energy supplies)?

- % More production
- % More conservation

<table>
<thead>
<tr>
<th>Year</th>
<th>More production</th>
<th>More conservation</th>
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<tbody>
<tr>
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<td>2016</td>
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GALLUP
Successful policy progress
In the electricity sector, efficiency is now our 3rd largest resource...

...and could become our largest resource by 2030 with expanded policies
State EE policy & program examples

- Utility-sector energy efficiency as a resource
  - Integrated resource planning (IRP)
  - Energy efficiency savings targets for utilities, e.g. Energy Efficiency Resource Standards (EERS)
  - Utility business model reforms
- Transportation system improvements, vehicle standards, promoting electric vehicle (EV)
- Building energy codes and compliance strategies; building benchmarking and transparency
- Statewide initiatives to provide financing, incentives, workforce development, and R&D
- Combined heat and power incentives
- Large customer and industrial programs
- Rural and agriculture programs
- Low-income weatherization
- Appliance efficiency standards
Utility-Sector Investments in Energy Efficiency

Electricity programs  Natural gas programs

Program spending (billion $)

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<th>Year</th>
<th>Electricity</th>
<th>Natural gas</th>
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<tbody>
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Energy Efficiency Workforce Development
City and State Examples
Size of the national energy efficiency workforce: 2.25 million

Wholesale, distribution, transport: 167K
Manufacturing: 316K
Professional/business services: 450K

Construction: 1.27M

Energy efficiency employment by industry sectors (Q2 2017)

Source: Adapted from 2018 US Energy Employment Report (USEER) www.usenergyjobs.org/
Workforce development: key stakeholders for state & local government

Before focusing on state & local strategies, it’s helpful to engage other potential partners to leverage their workforce development efforts.

- Energy Utilities
- Unions
- Energy efficiency industry-support organizations
- Community-based organizations and nonprofits
- Community colleges
- Weatherization and other providers

Source: Through the Local Government Lens: Developing the Energy Efficiency Workforce
aceee.org/research-report/u1805
## Local workforce development activities

<table>
<thead>
<tr>
<th>Category</th>
<th>Activity</th>
<th>Examples</th>
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<tbody>
<tr>
<td><strong>Workforce development goals</strong></td>
<td>Align energy efficiency and workforce development goal-setting efforts</td>
<td>Milwaukee, WI. Local jobs goal in ReFresh Milwaukee</td>
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<td><strong>Training programs</strong></td>
<td>Offer workforce development programs alongside energy efficiency policies</td>
<td>Vancouver, BC. Training and High Performance Building Centre of Excellence</td>
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<td>Boston, MA. Utility-funded BOC training</td>
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<td><strong>Job access strategies</strong></td>
<td>Enact inclusive procurement processes and contracting processes for energy efficiency projects</td>
<td>New Orleans, LA. City-utility training and disparity study.</td>
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<td>Portland, OR. Clean Energy Works Portland.</td>
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<td><strong>Miscellaneous activities</strong></td>
<td>Support clean energy accelerators and hubs</td>
<td>Los Angeles, CA. Los Angeles Cleantech Incubator.</td>
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<td></td>
<td>Form community partnerships</td>
<td>Knoxville, TN. Knoxville Extreme Energy Makeover program</td>
</tr>
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Source: *Through the Local Government Lens: Developing the Energy Efficiency Workforce* [aceee.org/research-report/u1805](aceee.org/research-report/u1805)
State Example: New York

- **SUNY and NYSERDA Partnership** to both encourage deployment of clean energy and energy efficiency at campuses statewide and also to prepare a future clean energy workforce.

- State-funded universities can also offer EE courses.
  - The City University of New York offers course credit to participants in a high-performance green building program coordinated by local chapter 94 of the International Union of Operating Engineers (IUOE), a trade union for construction workers.
State Example: Massachusetts

- Boston is partnering with Eversource and National Grid, who are sponsoring Building Operator Certification (BOC) training for municipal building operators.
- Massachusetts Department of Energy Resources is developing three other potential BOC training programs for local government facilities staff on Cape Cod and in Central and Western Massachusetts.
- Massachusetts Clean Energy Center partners with local career training organizations to help low- and moderate-income women enter the clean energy industry.
Analysis of jobs benefits in Maryland

• ACEEE. 2017. *EmPOWERing Maryland: Estimating the Economic Impacts of Energy Efficiency Investments on Maryland’s Economy*

• Estimate that extending EmPOWER would:
  • Create 68,000 net new jobs,
  • increase state gross domestic product by $3.75 billion, and
  • save Maryland homes and businesses nearly $12 billion.
Additional Resources
• 2018 State Energy Efficiency Scorecard (early October release)
  • http://aceee.org/state-policy/scorecard
  • https://database.aceee.org/

• Blog post: On Labor Day, we salute the 2.2 million-plus Americans who work to save energy

• How Does Energy Efficiency Create Jobs?

• Blog post: We knew energy efficiency employs a lot of people, and now we know how many
Upcoming ACEEE webinar on EE in rural communities

- New report, *Reaching Rural Communities with Energy Efficiency Programs*,
- Wednesday, Sept. 19\(^{th}\) at 1:00 pm EDT
- Webinar speakers will include:
  - Mary Shoemaker, ACEEE
  - Berneta L. Haynes, director of Equity and Access, Georgia Watch
  - Alison Donovan, senior consultant, Emerging Savings Opportunities, Vermont Energy Investment Corporation
- To register for the webinar, please visit: [http://www2.aceee.org/e/310911/register-5756867354320582915/3nvjrx/195503699](http://www2.aceee.org/e/310911/register-5756867354320582915/3nvjrx/195503699)
Key Takeaways

• Energy efficiency is still our least-cost energy resource that supports over 2 million jobs, reduces high energy burdens for those most in need, and provides energy reliability and environmental benefits

• Policies are needed to address key market failures; these policies will help boost the energy efficiency workforce

• States can play a central role in supporting effective energy efficiency policies and workforce development
Thank You!
Maggie Molina, Senior Director for Policy
202-507-4004 or mmolina@aceee.org

Upcoming ACEEE Conferences

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<th>Location</th>
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<tr>
<td>ACEEE RURAL ENERGY CONFERENCE</td>
<td>OCTOBER 22, 2018</td>
<td>ATLANTA, GA</td>
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<tr>
<td>CONFERENCE ON HEALTH, ENVIRONMENT AND ENERGY</td>
<td>DECEMBER 3-5, 2018</td>
<td>NEW ORLEANS, LA</td>
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The top convener in energy efficiency.
aceee.org/conferences