Workforce Development Initiatives for Diverse Contractors: A National Benchmarking Review of Utility Sponsored Programs to Advance Residential Energy Efficiency Weatherization

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ABSTRACT

Utilities and state energy offices across the United States are seeking to increase the availability of skilled contractors to deliver residential energy efficiency weatherization and HVAC installations to help achieve clean energy goals. Additionally, utilities and state energy offices are seeking to reach hard to serve markets to improve equity in clean energy goals. In 2023 Skytop Consulting completed a process evaluation of utility efforts to design and implement workforce development training programs specifically for diverse contractors (minority, women or veteran owned) seeking to enter or expand their services for residential weatherization and HVAC installations. This paper presents a summary of key findings from interviews with and literature review of 10 diverse contractor focused workforce training programs across the United States, including programs with New York State Energy and Research Development Agency (NYSERDA), National Grid, Xcel Energy, and DTE Energy. The paper provides an overview of the different strategies, recruitment and engagement methods, curriculum, and lessons learned to date. The paper describes how utilities are engaging in this effort, the strategies to team with local partners and community-based organizations, and insights into lessons learned and best practices.

Introduction

Utilities across the United States are offering workforce development training programs to increase the availability of skilled labor to help achieve energy efficiency targets. A common workforce development training approach focuses on dual objectives of increasing the engagement of existing residential HVAC and weatherization contractors with utility programs and directly training and placing new workers into the industry. Some programs use the term "contractor incubators" to develop and train a network of contractors to generate sustainable revenues via active engagement with utility energy efficiency programs. This research effort focused on initiatives seeking to train Diverse Business Enterprises (DBEs) how to maximize the benefits of utility program offerings, integrate the selected program(s) as part of their core business, and how to promote incentives to customers. Workforce development programs also regularly focus on recruiting new entrants to the industry via multiple training initiatives of varying degrees of engagement.

Skytop undertook benchmarking research, including literature review and interviews with utilities, agencies, or non-profits working to advance MWBE workforce development for the residential energy efficiency sector. Research was completed December 2022 – February 2023.

Methodology

Skytop reviewed multiple workforce development initiatives from around the country by interviewing program managers and conducting literature reviews. This research was supported by DTE Energy. Programs employ a variety of approaches, including training programs for individuals and contractors (both new entrants, incumbents), training for opportunity youth,[1] as well as grants for certifications, fellowships, paid internships, and work experience.

Interviews With Other Workforce Development Programs

Skytop conducted five telephone interviews with utility program managers, implementation contractors, and administering government agencies focusing on workforce development from around the country. These interviews aimed to gain further insights into their program design, success factors, customer satisfaction, and any other general lessons learned. Skytop spoke with representatives who are designing and implementing diverse workforce development initiatives in Massachusetts, Minnesota, New York, and California.

Literature Review of Workforce Development Programs

Skytop's research task focused on a national review of workforce development initiatives, with a focus on those programs seeking to engage diverse contractors and individuals into the residential energy efficiency workforce objectives. Skytop conducted a literature review and summarized program design features and results assessment for five different workforce development initiatives across the United States. Utility and programs researched included examples from California, District of Columbia, New York, Massachusetts, Michigan, New Jersey, Iowa, and Tennessee.

Researched Workforce Development Programs

We focused our research on the following program initiatives:

Emerald Cities Collaborative's Workforce Development Programs

The Emerald Cities Collaborative's Workforce Development Programs are active in a variety of states around the country, including District of Columbia, California, and Washington. Four initiatives were reviewed in detail:

- Contractor academy (evening training for contractors)
- Architecture, Construction, Engineering & Sciences (ACES) which focuses on working with opportunity youth to prepare them for a career in ACES (weekly classes)
- The Green Pathways Program which provides BPI training and certification for opportunity youth

[1] According to youth.gov: "Opportunity youth are young people who are between the ages of 16 to 24 years old and are disconnected from school and work. This developmental period, also referred to as emerging adulthood, has great potential for individual growth through exploring independence and life opportunities. It is a critical window of opportunity for youth and young adults to gain an education and/or training that would provide the foundation for their occupational trajectories during the rest of their adulthood. This can include developing knowledge, skills, and character traits that are important for opportunity youth's career pathway development.

- Clean Energy Hub, which provides evening HVAC training and certification to incumbent workers

Massachusetts Workforce Development Program

Skytop interviewed National Grid and reviewed three initiatives:

- Clean Energy Pathways, an HVAC and weatherization training and Building Operator Certification (BOC) certification and internship placement
- Supplier Diversity Summit, which is a contractor networking event
- Workforce Partnership Grant, which provides funding with grant dollars to support upskilling incumbent workers and transitioning new workers into the EE workforce through partnership development

NYSERDA Workforce Training and Development Program

The Workforce Training and Development Program is run by the New York State Energy and Research Development Authority (NYSERDA). There were three initiatives discussed during the interview:

- On-the-job training (Program Opportunity Notice (PON) 3982), providing funding for projects that train new workers
- Energy Efficiency and Clean Technology Training (PON 3981), providing funding for training existing workers
- Climate Justice Fellowship, which is a fellowship program through Columbia University

Xcel Energy and CenterPoint Energy Workforce Development Program

The Workforce Development Program is sponsored by Xcel Energy and CenterPoint Energy in Minnesota. It is implemented by Center for Energy and Environment. Two initiatives were discussed:

- Home Energy Career Training, which provides training and credentials in Building Science Principles
- Paid Internship and Job placement, providing a paid internship and on-site field experience with employers

Willdan Workforce Development Program

The Wildan Workforce Development program provides two initiatives active in New York (with funding from NYSERDA):

- Clean Energy Academy providing free energy efficiency career training program
- Contractor Training, teaching contractors the language of energy efficiency

Building Futures Minority Contractor Training Program

The Building Futures Minority Contractor Training program is sponsored by the Tennessee Valley Authority (TVA). Launched in 2019, the program recruits for and trains contractors for its Quality Contractor Network to deliver weatherization services as part of two

existing programs from TVA: Home Uplift for limited-income residents and the eScore programs, which serve low-income communities.

New Jersey Clean Energy Jobs Training Program

New Jersey Clean Energy Jobs Training program is sponsored by Public Services Electric & Gas (PSE&G). Nonprofit organizations and governmental agencies, as well as for-profit entities can apply for a grant for training purposes, to train participants for energy efficiency programs serving underserved communities.

Iowa Prison Industries' Home Building Program

The Iowa Prison Industries' Home Building Program provides construction skills training to incarcerated men. The men are learning skills such as framing, drywall, roofing, plumbing and electrical and are also able to work towards apprenticeships including Carpenter, Electrician, Plumber, and Home Performance Laborer.

District of Columbia Sustainable Energy Utility Energy Efficiency Workforce Development Program

District of Columbia Sustainable Energy Utility's Energy Efficiency Workforce Development Program offers 5-month paid green externships with local contractors and other organizations.

California Energize Careers

Pacific Gas and Electric's and the California Public Utilities Commission's Energize Careers program matches participants with a contractor for 160 hours paid work experience.

Workforce Development Program Details

Energy efficiency workforce development programs range in detail in terms of program type, length of the training/internship, whether they offer certifications, and the size of the class/cohort. Program types vary from virtual and/or in person training for contractors, to paid internships and on-the-job trainings, weekly high school classes, fellowships and networking opportunities. Program lengths are also different depending on the target group and their level of experience. Training can range from one- to two-day, single-issue trainings and webinars to four to seven weeks, three to six months, or simply noted as 30hours total. Training frequency varies from two evenings a week to five days a week (e.g., four days on job site and one day in the classroom). The class sizes were found to be a minimum of 15 students to a maximum of 30 students, averaging around 15-20 students. Many programs had around three to four cohorts per year. Various certifications are offered by the programs, such as Building Science Principles (BSP), Building Analyst Technician (BA-T), Building Analyst Professional (BA-P), and HVAC certification. However, many programs do not offer certifications as part of their programs, especially for new entrants.

Partnerships and Implementers to Advance Workforce Development

Community-based organizations are frequently key partners with utility workforce development programs. Community-based partners help with recruitment, vetting, case management, business skills training, soft skills training, job coaching, and can also help with regular follow ups and check ins with participants further down the road. These organizations also provide credibility in the communities that the programs are trying to reach.

Other partnerships include: nonprofits (e.g., Homes for Iowa), Chambers of Commerce, Ethnic Business Associations (e.g., Association of Minority Contractors), Department of Labor and Development Agencies, universities, community colleges, high schools, various training centers and other learning systems, and unions and manufacturers.

Recruiting, Vetting, Criteria for Participation in Workforce Development Programs

Most often, community organizations (such as ethnic business associations) vet candidates. Sometimes, where funding is provided for on-the-job training, the business looking to receive the funding must vet their own candidates. Labor offices, Chamber of Commerce, and contractor lists from existing utility programs also tend to play a critical role in recruitment and vetting of candidates. There is also some return participation from previous cohort participants. Various criteria for program participation may include:

- Existing (incumbent) worker or contractor or new entrant to the workforce
- Minority (environmental justice communities) and disadvantaged women from local communities as well as service-disabled
- Dislocated workers or long-term unemployed people
- Low-income workers
- Ex-offenders
- Migrants
- Single parents
- Opportunity youth (high school and older); homeless, near homeless, transitioning from foster care to independent living, justice impacted, low-income or other hardships
- For insulation work: physical strength (being able to lift 40-50 pounds) was a requirement; being able to crawl climb and move in tight spaces; physical exam.
- Fifth grade level of reading and math is required for some programs
- A high-school diploma or GED is required for some training programs, but is not common
- Drug and background checks are completed only by two programs from our review

Workforce Development Program Types

The programs offer different levels of training ranging from:

- Training for established contractors
- Classroom training or technical training for existing and new workers
- Training and coaching for high school students
- Soft skills, business skills, financial literacy
- Career training, job readiness support, job skills development, interview training

- Networking opportunities
- Certification training
- Apprenticeship, on-the-job training (paid and unpaid), job shadowing
- Internships, externships
- Wrap around services, such as transportation and child care were also offered by a few of the programs

Job types covered by the programs include:

- General contractor
- Insulation, air sealing, weatherization
- HVAC, plumbing, electrical
- Framing, drywall, roofing, plumbing, electrical, building envelope
- Heat pumps
- Architects, engineering data analyst, data entry, analyst, building maintenance technician
- BPI analysis, building science and home energy audit
- Solar technician

Job Placement, Continuing Engagement

Some of the programs offer job placement and job coaching after training is completed, as well as ongoing career coaching, but it is not the norm. Some trainings are specifically designed to help offset the financial risk of hiring new workers by providing funding for on-the-job training for new workers (e.g., NYSERDA provides a maximum of 75% wage reimbursement to eligible businesses for four to six months of a new hire's training period).

Results, Measured Metrics, Evaluation

Many programs try to conduct evaluations, typically six months to one year out; however, they report that this is difficult to do. It is hard to reach participants after the program is complete. Many programs report surveys being conducted at the end of the training or internship. Retention rates, that being the percent of students who stay in the energy efficiency field, differ widely by programs and by program types and are reported to range from 20-80% after one year. The average is estimated to be 60-70%. The reason some people leave the energy efficiency field is a dislike for the field working conditions (e.g., heat, cramped space).

Budget, Funding, Wraparound Services

Funding is either by state governmental organizations or by utilities. Budget estimates provided by some of the programs include: $50,000-$100,000 per session (including development, delivery, and evaluation) for 18-20 students. Average per student costs range from $5,000-$10,000 (including recruitment, training, and wraparound services) for student training or internships, depending on wage reimbursement. Another program mentions that their initial estimates of $8,000-$10,000 increased to $15,000-$20,000 per student due to unforeseen circumstances (e.g., challenges with recruitment and retention). However, they are hoping to see economies of scale and reduce these numbers closer to their original estimates.

Whether or not there is any payment made to the student/participant depends on the amount of total funding and budget available. About half of the initiatives reviewed are unpaid

for the participant, while the other half has some form of payment. Payments to students (or for wage reimbursement) vary between $16.50-$20/hour, paid for 25 to 40 hours per week. One program offers temporary employee benefits, such as health insurance.

Wraparound services, such as transportation or childcare, are offered by some programs. For other programs, services like these are still in development. Transportation is an important subsidized wraparound service (paying for gas, bus card). Other services offered include paying motor vehicle related fines, license fees, and car repairs so that transportation barriers are resolved. Start-up equipment purchases, like steel toed boots or computers are sometimes covered as well.

Areas of Success or Improvement

Overall success factors for workforce development programs include:

- Reducing the risk and expense associated with recruiting, onboarding, training, and retaining workers, as well as assisting workers by reducing employment barriers and creating pathways to quality jobs is an area of success for most programs.
- Providing wraparound services improves participant diversity and facilitates recruitment. Training initiatives that assist with childcare, transportation, steel toed boots, driver's education or licensure, paying off parking tickets, mental health services, and a computer facilitate participation.
- Subsidizing transportation is important since work tends to be in the suburbs (not necessarily where priority communities live).
- Recruiting community organizations as partners who hold soft skills or business training to reduce costs, and better recruit and prepare workforce training participants.

Challenges include:

- Needing to see results quickly by trained contractors; otherwise, they revert to their prior non-clean energy related work areas.
- Needing help for contractors in understanding the terminology used in calculating energy savings and funding opportunities.
- Having multiple locations, community partners, contractors and various fields introduces more complexity and challenges.

Findings include:

- The labor market and workforce training should be segmented between new entrants and incumbents as each has their own opportunities and challenges. More training should be offered up front (OSHA 10, building science, professional development and work etiquette).
- Programs should start off small and then scale up. For example, in New York, instead of training one worker at a time, they are trying to train the trainers and set up a curriculum which all university or technical school campuses can use.
- Programs should demonstrate a market gap to receive funding. Industry needs should be aligned with the training provided.
- Training or apprenticeships may not need to be many months (depends on level of readiness needed to initially enter the workforce to test out the field).
- BPI credentialing may not be necessary initially; BPI Building Science Principles certification might be enough as a start.

- Setting the right expectations and requirements of what the work entails before training or internship is important (tight spaces, heat, dirt, long hours), and can be accomplished via an initial orientation session of one-to-three hours, before programs and students commit to investing in multi-week or month training programs.
- Recruitment is key; screen community organizations well. They should be trusted. They should provide quality over quantity. They should vet their candidates carefully and provide some basic skills training.
- Flexible employers are also important; providing mentorship and buy-in from crew members to support and develop new entrants in the field is essential.
- The number of people who the program aims to recruit, train and place into employment should be explicit metrics of success.
- The percentage of interns who find permanent full-time employment after the program tends to be high after trainings.

Conclusions

The labor market is segmented between new entrants and incumbents as each has their own opportunities and challenges. Workforce programs should align trainings to industry needs after grouping them by new entrants versus incumbents, with the appropriate level of engagement and technical training, given the career stage of the participant group and likelihood of staying in the industry. Setting the right and appropriate expectations and requirements of what the work entails before training/internship is important (e.g., tight spaces, heat, dirt, long hours); otherwise, the dropout rate can become high. Recruitment is very important, hence closely vetting the affiliated community organizations is important as well. The best partner organizations to help with participant recruitment are the ones who are trusted by the community and offer quality over quantity. Flexible employers are essential to help provide mentorship and buy-in from crew members to support and develop new entrants in the field.

- Having multiple locations, community partners, contractors and various training locations makes things difficult. It is typically best if programs start off small and then scale up. Typical class sizes of around 15-20 students work well, along with three to four trainings held per year. On average, a 70% placement rate in the industry can be expected following a training.

- Trainings or apprenticeships may not need to be many months. The length of training should depend on the level of readiness needed for the contractor/worker and the career stage of the participant. For example, new entrants to the industry might be better served with a short-term initial training experience for introductory exposure to the field.

- BPI credentialing is not common as an initial gateway to the industry. The less time intensive Building Science Principles training provides initial exposure and is more common for initial orientation. It is very useful to provide more training up front such as OSHA 10, building science, professional development and work etiquette.

- Contractors might need help in understanding the energy efficiency program terminology and calculating savings. They also need to see results quickly, otherwise they revert to their prior non-clean energy related work areas.

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