

Integrating Diversity, Equity, and Inclusion into Workforce Development in Energy Efficiency: A Case Study in Building Analyst Training

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ABSTRACT

Achieving decarbonization goals within the state and at the national level requires building a strong workforce in the clean energy economy. When crafting workforce development programs in this growing space, diversity, equity, and inclusion should be at the forefront of planning as well as integrated into every phase of training programs. At Walker-Miller Energy Services, we have a mission to empower people and enrich communities through equitable workforce development solutions. We have first-hand experience with recruiting, training, and upskilling individuals in the energy efficiency space. This paper draws on our experience and expertise within research and workforce development implementation to provide strategies for building an equitable workforce. First, we discuss the current inequity in the energy efficiency sector and the benefits of a diverse, equitable, and inclusive workforce. We present a case study of a current workforce development program focused on providing underrepresented individuals with training to attain a Building Analyst certification. We outline challenges individuals face to entering the energy efficiency sector and how we addressed those barriers and provide an overview of the successes and limitations of the program. Lastly, suggest strategies to build a diverse, equitable, and inclusive workforce in energy efficiency based on recommendations from the literature and our experience in workforce development.

Introduction

Walker Miller Energy Services is a Detroit-based company and trusted partner with deep roots in the energy industry. Through an equity lens, the company provides thought leadership to utilities, municipalities, businesses, and communities to help achieve energy reduction goals and drive the benefits of clean energy to all communities. With our rich history of over 20 years in the energy industry, Walker-Miller strives to help reduce the energy burdens on families, create local jobs, diversify the local energy workforce, and serve the needs of income constrained families with kindness and compassion. Walker-Miller Energy Services is committed to changing lives through energy efficiency.

Decarbonization of the energy system is necessary to mitigate climate change, and energy efficiency is a crucial strategy to achieve decarbonization goals (IPCC 2022). Historically, marginalized communities have experienced disproportionate burdens because of our global reliance on fossil fuels that contribute to the severity of climate change (IPCC, 2022; Jessel et al. 2019; Schlosberg & Collins, 2014). Moreover, marginalized communities have received less investment in clean energy infrastructure and less access to energy efficient technologies (Goldstein et al. 2022). Therefore, it is crucial for justice and equity to be at the forefront as the

U.S. continues to transition to a clean energy future. Energy efficiency offers the opportunity to address historic and current inequities and to ensure that the energy transition is just. Energy efficiency is a crucial sector for achieving greenhouse gas reductions in the near term and a bridge to reach a low carbon economy, while also creating significant economic opportunities, addressing historic inequity in the workforce, reducing energy burden, and creating jobs with livable wages and upward mobility (Foster et al. 2020; Lewis et al. 2020).

As the workforce in energy efficiency continues to grow, diversity, equity, and inclusion (DEI) should be at the forefront of planning and integrated into every phase of program development and training. DEI initiatives are efforts that continuously work towards representation of the community while providing fair treatment, access, and opportunity for all, and affords all people to have a voice. Successfully incorporating DEI into workforce development programs and the energy efficiency sector will require cultural and behavioral change, with solutions that are designed specifically to address inequities that contribute to lack of diversity and inclusion in the workforce. Walker-Miller has experience developing and leading workforce development programs that focus on reaching underrepresented individuals by providing them with resources, training, and comprehensive wrap-around services to start their careers in the energy efficiency sector and thus contributing to an equitable clean energy transition.

In this paper, we will start by presenting the current state of DEI in the energy efficiency sector in the United States and explain how DEI is beneficial for the workforce. Next, we will present one of Walker-Miller's workforce development programs as a case study, outline challenges individuals face to entering the energy efficiency sector and describe how we addressed those barriers and provide an overview of the successes and limitations of the program. Lastly, we will summarize strategies to build a diverse, equitable, and inclusive workforce in energy efficiency based on recommendations from the literature and our experience in workforce development.

Current State of Equity in the energy efficiency Workforce

Passing the Inflation Reduction Act and Infrastructure Investment and Jobs Act will bring historic investments in all sectors of the U.S. economy (Rambert 2022). The energy efficiency sector produces the most jobs of any energy sector and was the fastest growing energy sector in 2019. Currently over two million U.S. workers are employed in the energy efficiency field, focused on production and installation of energy saving products and provision of services that reduce energy consumption (Keyser 2022). Workers in energy efficiency are primarily in construction (54%), professional services (22%), manufacturing (14%), and trade (9%) (Foster et al. 2020). However, the COVID-19 pandemic contributed to the loss of approximately 270,000 jobs. While the energy efficiency sector has rebounded more slowly than the energy sector as a whole, growth in energy efficiency still outpaces U.S. employment growth overall, as job losses from 2020 are being regained (Keyser 2022).

The energy efficiency industry will need to grow significantly and quickly to achieve decarbonization and equity goals. With billions in federal funding going into efficiency, thousands of workers are needed to design, manufacture, and install energy efficient technologies

(E2 and E4F 2022, Foster et al. 2020, Keyser et al. 2022). Energy efficiency growth has the potential to benefit low-income consumers who are historically burdened with energy costs both through the implementation of programs and through job growth opportunities (Rambert 2022; Shoemaker 2020).

The workforce in the energy efficiency sector is neither diverse nor representative of the population, with the workforce being 76% white and 74% male. Women comprise only 25% of the energy efficiency workforce, despite making up 48% of the U.S. workforce overall (Fazeli 2021; Truitt et al. 2022). Black and African American workers are also underrepresented (Foster et al. 2020; Smith et al. 2021), comprising 8% of the energy efficiency workforce compared to 12% for the U.S. workforce overall (Fazeli 2021; Truitt et al. 2022). Some sectors have less diversity than others, with women only making up 2% of the HVAC workforce (Electric & Gas Industries Association 2018). In construction, there is a lack of young workers, lack of diversity, and challenges with equity in regard to gender, ethnicity, disability, sexual orientation, and language barriers (Karakhan et al. 2023). In male dominated fields, such as the energy sector, women experience wage discrepancies (Smith et al. 2021), sexual harassment, and discrimination (Allison et al. 2019). Women also earn fewer promotions and pay increases compared to men (Allison et al. 2019).

There is a growing demand for individuals to enter the energy efficiency field, and this will require thoughtful consideration of workers' education, financial needs, and job growth in a way that addresses a history of discrimination and inequity. The energy efficiency sector must prioritize DEI not simply as a buzzword. Instead, action must be taken to align with a diverse future to ensure that past and current inequities in the energy efficiency workforce do not persist.

Benefits of a Diverse, Equitable, and Inclusive Workforce

Given the current inequity and lack of diversity in the energy efficiency sector, workforce development programs should prioritize DEI at the forefront of planning and integrate strategies to address inequity throughout recruitment, hiring, training, and upskilling. Inclusive and equitable workforce development (WFD) programs provide underrepresented and marginalized communities with skills and opportunities to pursue careers in energy efficiency, fulfill the growing demand for more workers, and allow individuals to give back to their community (Shoemaker et al. 2020). Diversity in the workforce means having representation on gender, race, ethnicity, sexual orientation, disability, and lived experience at the company level, the workforce level, and in leadership and management. Building a diverse workforce lowers the disproportionate rate of unemployment and meets demand in the clean energy sector (Markowsha 2018).

Companies with diversity in leadership are more likely to have better organization performance (e.g., employee satisfaction, customer orientation), and greater financial returns (Hunt et al. 2015). Diverse companies are better able to meet the needs of diverse clients, have better financial performance, and higher innovation revenue (Fazeli 2021). A diverse and inclusive workforce benefits companies by helping them connect to a wider customer base, enhances community relationships, leads to creativity and innovation, and enriches the pipeline

of innovative ideas and approaches (Comerica 2021, EEI 2018, Smith-Doerr 2017) to better serve communities.

Walker-Miller Building Performance Institute Training as a Case Study

Walker-Miller Energy Services approach to WFD seeks to provide individuals with the opportunity to grow their career in energy efficiency while providing resources and support to address individual and structural barriers. As a comprehensive example, Walker-Miller designed and implemented a Building Performance Institute (BPI) training program that seeks to train and mentor individuals in energy efficiency, culminating in the achievement of a Building Analyst certification and job placement, preferably in the energy efficiency sector. The program is a high-touch program model that targets participants in disadvantaged communities that are unemployed, underemployed, with no prior experience in the energy efficiency industry.

Upon completion of this class and field training, participants should understand basic residential construction design, be able to educate homeowners on energy conservation practices, perform analysis on energy usage, identify opportunities for improving energy efficiency in homes, and propose cost-effective recommendations. Participants should also be able to diagnose combustion appliances to evaluate the health and safety of the homeowners, perform air leakage diagnosis of buildings using appropriate diagnostic tools including blower door, combustion gas detectors, pressure pan, etc. In addition to the house-as-a-system approach of evaluating homes, and as a result of hands-on training with weatherization contractors, participants will obtain skills necessary to perform weatherization tasks such as spray foam insulation, blown-in insulation, and air sealing. To receive their Building Analyst certification, trainees must pass a written and field exam administered by BPI.

Individuals face numerous challenges to successfully apply for and work in the energy efficiency sector (CBIA 2017, Foster et al. 2020, Scheuer et al. 2010). Walker-Miller designed the eight-week program to include supportive services to address the barriers and challenges that individuals face when entering the workforce, which are outlined below along with how solutions were implemented in our WFD program.

Barriers and Challenges Faced by Individuals

The energy efficiency workforce is predominantly male and white, with Black individuals and women underrepresented in the workforce (Foster et al. 2022; Truitt et al. 2022). Discriminatory practices in recruitment, hiring, and pay may result in individuals leaving the workforce, or not having the opportunity to participate at all (Truitt et al. 2022). These discriminatory practices may not be intentional, and instead may be a result of systemic or structural barriers that are not adequately addressed by workforce development programs. Walker-Miller has a specific role within the company focused on DEI and provides regular training and lunch-and-learn sessions focused on DEI for employees within the company. While not specific to the WFD program in this case study, Walker-Miller's prioritization of DEI practices company-wide and competency for all team members contributes to the overall success of the program.

Next, the way in which recruitment is designed may inadvertently serve as a barrier preventing individuals from entering the energy efficiency space (SEIA 2019). If recruitment efforts do not target marginalized communities, or actively seek to include a diverse audience, underrepresented individuals may not be aware of employment opportunities or have positive perceptions of energy efficiency as a career. Recruitment for the workforce development program utilized Walker-Miller's existing relationship with community partners to recruit a diverse group of participants. Our community partners are actively involved in the community and are a trusted resource for marginalized communities. Ten slots were open for the first pilot training program in 2022, and using the network of community partners for recruitment, Walker-Miller received a little over 2,000 applications.

Individuals may also lack resources such as childcare, transportation, housing, food, energy, or healthcare that are necessary to succeed in their career (Madigan 2021; MacPherson and Ayala 2020) which disproportionately affects women, low-income individuals, and people of color (Archer 2020, Brown et al. 2020, Davis 2020, Lenhoff et al. 2022, Owens 2019, Wang et al. 2021). If training programs or internship opportunities are unpaid, or provide a low wage, individuals may lack the monetary resources to participate. To provide an equitable opportunity, Walker-Miller's BPI program provides supportive services to assist trainees with childcare and transportation costs. The program was funded through partnership with utilities and developed and managed by Walker-Miller. Participants are given gas cards or metro passes depending on what option best meets their needs. Participants were paid a stipend of \$16.00 per hour for 40 hours per week to participate and provided with a monetary incentive to complete training and pass their field and written examinations. Participants were also provided with meals throughout the training. Cohort sizes were kept small to ensure each trainee receives adequate attention. Opportunities for soft-skills development such as interview and resume preparation and communication and collaboration were integrated into the training as well, and led by Walker-Miller and the instructor. Employer partners also assisted in conducting mock interviews with participants.

It is important to note that barriers may be location specific. Each community is unique due to variations in demographics and cultural differences of employees, where some challenges are more prevalent than others. For example, transportation-related barriers are particularly prominent in the city of Detroit, and there are disparities in ownership by class, race, and gender with lower-income, Black, and female Detroit residents being less likely to own a car (Gerber et al. 2017). Without access to reliable transportation, nearly half of Detroiters report missing work, an appointment, or an outing because of transportation issues (Gerber et al. 2017), and low-income Detroiters report living in Detroit but working outside the city (Glynn et al. 2020). Thus, for Detroit, transportation is a major challenge that may not be as prominent in areas with robust transportation or lower car insurance costs. There is no one size fits all to workforce development, and local and contextual factors are important considerations for the success of any program (Glynn et al. 2020). A culturally competent approach allows program developers to include place-based solutions for participation which ensures that supportive services reflect the needs of underrepresented communities.

BPI Training Program Design

Currently two eight-week training programs and a shorter three-week training program have been completed, with a fourth cohort in progress and two more planned for 2023, ranging from three to fourteen individuals per cohort. The eight-week training program incorporates classroom learning, hands-on field training, practice written and field exams, and on-the-job training. The first two weeks are primarily classroom instructional learning, with the second week incorporating field activities. The program starts with lecture-based classroom learning led by an instructor with expertise in BPI standards and building science principles. Trainees are provided with an overview of the eight-week course structure along with class etiquette ground rules and the expectations of students.

The instruction portion of the course consists of seven sections: (1) BPI standards, (2) building science and energy basics, (3) building envelope, windows and doors, and air leakage, (4) insulation, lighting, and appliances, (5) heating and cooling systems and water heating, (6) health and safety, (7) and the home assessment process. Weeks three and four incorporate field activities, review, and practice for the written examination. Week five consists of field exams and week six focuses on the final written exam. Weeks seven and eight include interview and resume prep, healthy housing principles, financial coaching, and on-the-job training (OJT). OJT was designed through partnerships with other businesses in the energy efficiency space including construction firms, insulation businesses, and energy efficiency services companies. Walker-Miller takes on a few students in each program for OJT and commits to hiring students out of each cohort. Typically, businesses that partner for OJT provide open positions which students can apply for. Students apply prior to OJT and typically have employment placement prior to completion of the program. For example, in the current cohort, all fourteen trainees have secured jobs with employment partners in week six in the program.

Research Design and Methods

The WFD team and Research and Consulting (RC) team at Walker-Miller collaborate to evaluate the efficacy of the program and to provide recommendations on how to adapt and improve to better serve program participants. Data is collected throughout the training from participants, instructors, and contractors. Participants are asked to take a pre-program survey which assesses their motivation for signing up for the program, challenges that hinder their participation, knowledge and understanding of energy efficiency, and the learning strategies that work best for them. Participants' experience in the program is also assessed at the ends of week one, three, five, and seven. Surveys during training ask participants to report: whether they know how to utilize supportive services, any barriers or challenges that they faced over the previous weeks that impacted training, the extent to which they feel more knowledgeable about energy efficiency topics, the efficacy of the course instructor, their understanding of course topics, the aspects of the course that they found most and least helpful, the amount of time studying outside of class, and space for any comments they want to share. In week seven, after OJT is incorporated into the program, questions are included to assess participants' experiences with OJT as well.

At the end of the program, participants are asked to take a post-program survey that evaluate their overall experience in the program, their assessment of the instructor and OJT, their knowledge of energy efficiency topics, and invites them to share ways the program could be improved. In addition, data is collected from instructors at the end of weeks one, three, five, and seven, as well as a post survey at the end of the program. Surveys for the instructors ask them to report on participants' punctuality, engagement, performance, and any potential academic misconduct. Lastly, we created a survey for contractors who implement OJT for week seven and post-program so they can provide an assessment of participants' OJT performance, knowledge, and level of professionalism.

Limitations: There are limitations that hinder our ability to fully assess the efficacy of the program. Throughout the training, program participants and the instructor were consistent with responding to the surveys with a 100% response rate. We attribute this to the use of in-class time to take the surveys and a close relationship with the instructor. However, gathering data from contractors presented a challenge, with three contractors responding to the survey in the first cohort, and no contractors responding to the survey in the second or third cohort. While we do not have data to speak to the exact reason, we hypothesize that the low response rate was due to capacity or time constraints. Lastly, the response rate for participants dropped off as well with only four participants in the first program, all participants in the second program, and no participants completing the post-survey in the third program. To address this limitation, in the current cohort, we are providing an incentive where participants are paid \$10 for completing all surveys.

Key Findings

Participants: Participants in the program were primarily male (70%), Black or African American (97%) with 13% identifying as Hispanic or Latino. One participant identified as American Indian or Alaskan Native. Nearly half of participants reporting being unemployed before starting the training, and 17% are returning citizens. Approximately 80% report having a high school diploma or GED as their highest level of education. Lastly, 60% of the participants are between 18-39 and 40% report being over the age of forty.

Completion and Job Placement: For the first pilot program, eight out of ten participants completed the training program, and were Healthy Housing Principles (HHP) certified. Three participants were offered positions with Walker-Miller Energy Services, three were offered positions with organizations outside of the energy efficiency industry. All program graduates passed their written exam, and three successfully attained their Building Analyst (BA) certification. In the cohort of the shorter three-week program, five participants enrolled, and all completed the training. All five participants were BA and HHP certified and employed in the energy industry six months later. In the second eight-week cohort, six out of eight participants completed the training and have the following certifications: OSHA 10, Building Science Principles, Building Analyst Technical, and HHP. Four participants are employed in the energy industry. Across all three programs, participants reported that their knowledge of energy efficiency improved. Participants' exam scores increased throughout the training as well, with all participants receiving a passing practice written exam score. We intend to collect additional

evaluation metrics including the number of program participants who are employed in the Energy industry six and 12 months after program completion.

Pre-Training: Pre-training surveys set a baseline for program participants and provided the WFD team with more information about trainees before they entered the program. Participants entered the program with limited knowledge of the energy efficiency industry, and a self-reported poor to average understanding of math, residential energy, insulation, and heating and cooling. Participants started the program feeling very motivated by career opportunities and their families. They hoped to gain knowledge about energy efficiency, new career opportunities, and a new skill that could allow them to contribute to their communities.

During Training: Surveys at weeks one, three, five, and seven provided a regular assessment of participants' experience with the program and allowed us to identify any challenges that needed to be addressed. The Research Team was able to provide the WFD team with recommendations to continuously improve the program. Recommendations ranged from minor suggestions such as providing suggestions for how to improve study habits and integrating more hands-on activities to more major suggestions such as

Transportation and childcare were described as challenges throughout the training, reinforcing the need for support services. Participants consistently reported that the course content was engaging and met their expectations. They also reported that their knowledge of energy efficiency improved, and they felt they could apply what they learned to the job. Participants also provided a positive evaluation of the instructor. They felt the instructor was knowledgeable and effective at communicating the course material. On average, participants spent 2-5 hours per week on course materials outside of class. OJT was where we observed the most variability in responses. In the first program, half of the participants reported being dissatisfied with the experience because they felt it did not reflect BPI information and they would rather spend the time practicing for exams. In future programs, OJT was shortened, and participants viewed OJT as valuable to their learning; however, some participants reported transportation issues with OJT because it required more travel time.

Throughout the program, the instructor reported that participants were motivated, punctual, attentive, and retained class material. The instructor observed that the class actively collaborated and were actively engaged. While the data from contractors is limited, those that took the surveys indicated that trainees were able to grasp new ideas quickly and possessed the skills needed to perform the job. They were satisfied with participants' professionalism, attitude, interest, and eagerness to learn more. Contractors also suggested that the program work on confidence building and putting classroom learning into practice and integrating oral quizzes during field house sessions.

Program Differences: No program was conducted in the exact format as recommendations and improvements were integrated in each subsequent eight-week program. For example, given the mixed results in OJT in the first program, the subsequent programs reduced the OJT to the last two weeks. Additionally, in the current program, the WFD team is introducing a new approach in which participants can indicate their preference for OJT placement. While the same topics are covered in each program, the amount of time spent on topics is dependent upon the participants. For example, math review was needed in the first program as that is where students were struggling, but in subsequent cohorts, math was not as great of a challenge and extra math

review was not needed. By making the training flexible and regularly assessing progress and trainees' experiences, the WFD team was able to align the program to meet the needs of the participants.

Further Improvements & Research: With only three programs completed, and three additional programs currently in progress or slated for 2023, these findings are preliminary. The program also continues to be improved upon as the WFD team identifies what aspects of the training are most effective for trainees' success. To continue to assess program efficacy, we will continue to track trainees' progress by following their employment up to a year after program completion. Additionally, while we do primarily recruit participants from underrepresented backgrounds in energy efficiency (e.g., race, ethnicity, employment status, education), our participants are primarily male. Future programs may seek to attain more representation for women and non-binary individuals. A strategy currently in place is to hold community workshops where individuals from the community are invited to hear about the program and career opportunities in the energy efficiency industry.

Strategies to Build a Diverse, Equitable, and Inclusive Workforce

The energy efficiency sector cannot achieve DEI goals without considering the needs of each population that must be met to provide opportunity to be successful members of the workforce. To meet the needs of individuals, workforce programs need address the barriers to inclusion, participation, and success, be it individual barriers or those that result from a history of systemic inequality or discrimination. Participants in workforce development programs report facing discrimination in their fields and call for equity and an inclusive work environment (Madigan 2021). This section outlines strategies for recruitment, hiring, training, and upskilling to build a diverse workforce that is inclusive and equitable based on recommendations from the literature as well as Walker-Miller's experience with WFD.

Organizational Practices, Planning and Accountability

Building a diverse, equitable, and inclusive workforce in energy efficiency will also require that organizations put resources behind DEI efforts (Adjo et al. 2021; Stefek et al. 2022). For example, some groups may be unintentionally excluded from employment opportunities based on where recruitment efforts are targeted or how opportunities are communicated. A key step is to first identify the baseline for DEI efforts. What groups within the population are underrepresented in energy efficiency? What groups within the population are underrepresented within an organization or program? What barriers or biases are present that may hinder DEI efforts? Baseline starting points are developed by identifying where the gaps are and where biases are present in hiring, promotion, and retention within an organization or the industry overall (Truitt et al. 2022). After developing baseline starting points, attainable and realistic goals can be set based on that assessment. Organizations and programs should develop metrics to assess goals and collect data regularly to evaluate performance (Adjo et al. 2021; Truitt et al. 2022). Metrics may include measures such as demographics, employee satisfaction, engagement, hiring, and promotions. Metrics should show whether DEI goals are being achieved.

Recruitment and Hiring

Recruitment and hiring are important considerations in addressing diversity and equity. The design of recruitment strategies can be a powerful method for building diversity in job and program applications (SEIA 2019; Stefek et al. 2020). WFD programs should consider the demographics of those being reached by traditional recruitment methods and recruit outside of traditional or known networks (SEIA 2019). Are current strategies reaching a diverse applicant pool of people who differ in race, ethnicity, gender, socioeconomic status, or lived experience especially for entry level positions in which specialized training may not be needed or is provided? Effective strategies might include job boards via community organizations, local and community events, and addressing any cultural considerations such as language barriers by offering materials in other languages common in the area (Shoemaker et al. 2020). Other recruitment avenues might include conferences or career events focused on DEI, engaging with community action agencies for outreach assistance, hosting workshops and information events across the community, or reaching youth through local high schools and community colleges (SEIA 2019; Shoemaker et al. 2020). Working with trusted community organizations who are actively engaged with underrepresented populations is also beneficial for diverse recruitment because they can assist hiring organizations and workforce programs by building rapport with underrepresented groups, provide input on how to communicate employment opportunities, and express any cultural considerations or needs within the community (Colvin et al. 2016; Rambert 2022).

When hiring or selecting individuals for training programs, organizations and WFD programs should consider who is doing the hiring and recruitment – is the selection team a group that reflects the diversity of the organization and the community from which they are recruiting (SEIA 2019)? Lastly, as younger workers enter the energy efficiency sector, connecting on values may be a useful avenue to build positive perceptions of career pathways in the field, especially as there are negative perceptions around some energy efficiency careers. Younger individuals tend to be more environmentally conscious and proficient with technology, and focusing on those aspects of opportunities in energy efficiency can be a useful recruitment avenue (Truitt et al. 2022).

Training and WFD Program Design

Workforce programs should consider DEI goals in their design and be incorporated into metrics of success. When designing workforce development programs and training for employment, start by identifying barriers that might be present for underrepresented groups, and design programs that seek to address those barriers to increase accessibility and inclusivity (Truitt et al., 2022). Track DEI metrics by regular data collection and allow program managers to adjust as needed (Truitt et al. 2022). Providing a nurturing environment that prioritizes not only building knowledge and skills but also the well-being of the employee or trainee ensures a more successful transition into the workforce (Lowe et al. 2022; Truitt et al. 2022). Strategies such as small and targeted programs, work-life balance, development opportunities, mentorship programs, supportive services (e.g., social support, transportation, childcare), and an inclusive

and psychologically safe environment can provide the support that underrepresented groups need to enter into and succeed in the energy efficiency sector (Rambert 2022).

The need for support when hired or recruited to a workforce development program is crucial to the success and satisfaction of employees. Lack of resources (e.g., transportation, childcare, finances) is a critical barrier for participation in the energy efficiency sector. Providing supportive services to trainees in workforce programs and upon hiring can aid in achieving DEI goals (Rambert 2022; Smith et al. 2021). Examples of wrap-around services include transportation assistance (e.g., gas cards, paying for public transportation), childcare services, stipends, or counseling and social services (Rambert 2022; Smith et al. 2021; Truitt et al. 2022). Providing adequate support is beneficial to individuals currently underrepresented in energy efficiency. Companies that offer these services create work environments that promote equity and allow their employees to thrive in their occupations (Rambert 2022).

Competency with soft skills such as communication, time management, and teamwork can be barriers to entry into the energy efficiency workforce. Similarly, individuals may struggle with resume building, interviewing, and other aspects of the job application process (Smith et al. 2020). Workforce development programs would benefit by offering training and resources to address soft skills and provide individuals with the opportunity to gain experience with these competencies along with the knowledge and skills they need while training and preparing for their specific position (Smith et al. 2021). Building soft skills provides a solid foundation for individuals entering the energy efficiency workforce to obtain employment and succeed in their careers (MacPherson and Ayala 2020). Conducting initial and regular assessments (via surveys, interviews) is also beneficial for WFD programs to identify how to best meet the needs of trainees to adapt the program as needed. Additional support services might also include developing vocational programs, practice exam access, pre-apprenticeship training, no-cost equipment as needed, and mentorship programs (Smith et al. 2021; Truitt et al. 2022).

Partnerships and community engagement can also be a great tool for achievement of DEI goals for workforce programs and hiring (Shoemaker et al. 2020; Smith et al. 2021). Organizations can partner with skills-training providers and state agencies to help provide resources and support to individuals entering the workforce. Workforce development programs can also partner with state agencies to connect individuals to jobs or refer them to further employment or training opportunities (Stefek et al. 2022). WFD programs can also collaborate with community leaders and outreach organizations to engage and empower the community by providing a platform to contribute to program design and implementation to better address individuals' needs and barriers. When partnering with communities, it is important to engage the community early, build trust and rapport, be genuine in interactions, incorporate community input, establish committees, and form a long-term commitment to and relationship with the community (Colvin et al. 2016; Rambert 2022)

Conclusion

Partnering with trusted community-based organizations, such as Walker-Miller, who have history within the community is an effective strategy for recruiting groups that are currently underrepresented in the energy efficiency workforce. However, we still have room for

improvement to recruit more women and non-binary individuals into the program in future cohorts. Additionally, providing support services such as stipends, transportation and childcare support, and soft skills development can break down barriers that prevent individuals from entering the workforce and aid in their successful completion of an eight-week training program. Continuously collecting data and feedback throughout the program also allows our team to improve and adapt the WFD program to better serve trainees and improve future outcomes.

As the workforce in the energy efficiency sector continues to grow, DEI should be prioritized in the design and implementation of WFD programs. Organizations within the energy efficiency sector should also integrate DEI into their recruitment, hiring, and training practices. While there is no one-size-fits all approach to WFD programs and hiring practices, we offer a case study and a range of strategies that can be incorporated into other WFD programs or the recruitment, hiring, and training practices of organizations in the energy efficiency sector. By prioritizing and integrating these recommendations, together we can build a workforce in energy efficiency that empowers people and enriches communities with DEI at the forefront.

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