



January 26, 2023

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DE-FOA-0002885: Response to Request for Information: Preparing Workers and Businesses to Deliver Energy Efficiency and Building Electrification Measures

The BlueGreen Alliance (BGA) unites America’s labor unions and environmental organizations to solve today’s environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy. Our partnership is firm in its belief that Americans don’t have to choose between a good job and a clean environment—we can and must have both.

The International Union of Painters and Allied Trades (IUPAT) represents a growing force of men and women in the United States and Canada who work in the Finishing Trades – Industrial & Commercial Painting, Drywall Finishing, Glazing & Glass Work, Sign & Display and Floor Covering Installation, and many more successful careers in the construction industry and public sector. Most significantly, glazing and glass work can play a significant role in the energy efficiency of a building envelope. As stated by the U.S. Department of Energy (DOE), “high-performance windows are crucial to achieving low-energy buildings” and even more crucial is the proper installation of such windows by skilled workers.ⁱ

BGA and IUPAT are pleased to submit the following joint comments to the DOE on designing the workforce development programs funded through the Bipartisan Infrastructure Law (BIL), including the Energy Auditor Training grant program (EAT), the Career Skills Training programs (CST), as well as the State-Based Home Energy Efficiency Contractor Training program funded through the Inflation Reduction Act. These programs are an opportunity to support and create good, union jobs, ensure energy efficiency contributions to climate goals, and to address racial and economic inequality through the Justice40 Initiative.

The importance of having a qualified energy efficiency workforce cannot be overstated. Studies have shown that poor installation of HVAC and energy efficiency measures often result in energy savings losses of up to 50% compared to projected savings goals.ⁱⁱ Investing in a qualified workforce, through accessible yet rigorous training, not only ensures the full potential of DOE's investment but also that building occupants receive the full expected health and energy benefits while creating good, union jobs and career pipelines. Whether it is HVAC installation, energy auditors or whole home retrofits, it is important to ensure that a qualified workforce does the work properly the first time.

Below we have responded to questions in Category A: Respondent Type, Category B: Workforce and Business Characteristics, Category C: Workforce Development and Business Owner Training Strategies, Category E: Equity and Partnerships and Category F: Access to Good, Quality Jobs.

Category A: Respondent Type

A1. What type of entity is the organization (e.g., non-profit, state government, company, local government, etc.)?

This is a joint comment between BlueGreen Alliance (BGA), a non-profit, and the International Union of Painters and Allied Trades (IUPAT), a labor union and member of the BlueGreen Alliance.

A2. In what city(ies) and state(s) do you live or operate?

BGA has offices in Washington, DC and Minneapolis, Minnesota and has additional state staff that operate in California, Colorado, Iowa, Michigan, Nevada, Ohio, Oregon, Washington, and Wisconsin. IUPAT is headquartered in Hanover, MD and has local chapters across all 50 states with over 100 Registered Apprenticeship training centers.

Category B: Workforce and Business Characteristics:

B1. What job categories in the energy efficiency and residential buildings-focused electrification industries/technologies are the most in demand (e.g., the types of jobs hired most frequently or employers' highest-priority vacancies)? What is driving this demand?

The EE workforce training programs funded by the BIL and Inflation Reduction Act are essential to the implementation and success of all of the other federal and local buildings-sector programs including those funded under these infrastructure laws. This includes energy efficiency and clean energy tax credits as well as building performance standards.

Tax Credits:

Existing buildings account for most of the energy used in the building sector. The energy use in commercial buildings is predicted to increase every year for at least two decades. Therefore, it is important to retrofit existing buildings to increase energy savings. Starting in 2023, the Inflation Reduction Act has expanded and made permanent the 179D tax deduction for energy retrofit work in the commercial buildings sector while also lowering the threshold for energy savings to 25%. This will incentivize building owners at scale to perform decarbonization work, and with a bonus deduction of 20% available for projects meeting prevailing wage and apprenticeship requirements would potentially create millions of jobs for glaziers and building envelope/weatherization workers and energy auditors.

Starting in 2023, The Inflation Reduction Act added electrochromic glass to Section 48 of the Internal Revenue Code, commonly referred to as the Investment Tax Credit (ITC). The credit can cover up to 30% of the costs associated with dynamic glass, moving it towards cost parity with traditional glazing and shading solutions again, creating millions of jobs for glaziers skilled in the installation of dynamic glass.

Building Performance Standards:

In January of 2022, the Biden administration launched the National Building Performance Standards Coalition, a first-of-its-kind partnership now with 34 state and local governments dedicated to delivering cleaner, healthier, and more affordable buildings. With nearly 25% of the nation's building footprint in their jurisdictions, the partnership facilitates new commitments to design and implement building performance standards at the state and local level, create good-paying, union jobs, lower energy bills for consumers, keep residents and workers safe from harmful pollution, and cut emissions from the building sector.ⁱⁱⁱ

The Council on Environmental Quality (CEQ) also launched an interagency Federal sustainability effort with GSA, DOE, and EPA to develop the first-ever building performance standards (BPS) for federal buildings. The BPS will establish metrics, targets, and tracking methods to reach federal carbon emissions goals.^{iv}

i. What job categories are the hardest to find qualified candidates for (i.e., the types of jobs most difficult to fill)?

1. Dynamic Glass and EE Glazing System Installers, Energy Auditors

ii. What are the key characteristics of these hard-to-fill jobs? For example, is it difficult to retain workers in these jobs (i.e., is there high turnover)?

1. Recruiting candidates with an interest in the construction trades

2. Lack of public sector investment in vocational training
3. Lack of pipelines and career ladders from K-12 education to Registered Apprenticeship

iv. What are the entry qualifications—educational background, related experience, training, skills, and/or certifications—necessary to fill these positions?

Glaziers are required to complete a three-year hybrid-model apprenticeship that includes online learning, classroom and lab instruction, and on-the-job training. This training incorporates concurrent certification in dynamic glass, building-integrated photovoltaics and a micro credential in green technology awareness. This can be accelerated with an articulated vocational training program or pre-apprenticeship. Weatherization requires one-year soft skills, safety training and certification in a weatherization skills program.

v. Are there promotion opportunities within these jobs? Are these jobs part of broader career pathways?

The pathway to ensuring that weatherization jobs become career opportunities is to connect them to registered apprenticeships such as in the glazing trades or other craft that allows them to be employed on a range of projects and in various sectors. Without a union apprenticeship that broadens skills and opportunities, the career pathway for weatherization skills alone may be limited. IUPAT programs are Council on Occupational Education (COE) accredited and provide college credit. Within the craft there are upskilling and personal development opportunities that also track into supervisory roles.

B2. In what locations do you project the greatest demand for workers? What trends and factors are driving that demand? Please provide any available data and sources.

1. Geographies with public sector projects
2. Major metropolitan areas, particularly those with updated energy codes and private sector megaprojects (projects over \$1 billion)

Category C: Workforce Development and Business Owner Training Strategies:

C1. What education and training (i.e., workforce development) strategies are most effective, and why, for incumbent workers and contracting firms in the energy efficiency and residential buildings-focused electrification industries (e.g., online learning, classroom and lab instruction, on-the-job training, hybrid models)? Are there effective training models that target incumbent workers and contracting firms? Who is best positioned to administer these programs?

Hybrid models that include online learning, classroom and lab instruction, and on-the-job training are best suited for learning a trade/craft because they provide the ability to understand the concepts and rationale behind energy efficiency and provide real world

challenges to completing technical work that participants will face on the job. The knowledge around the craft not only provides a clear idea of how employment as a skilled worker may play out day-to-day at the job site but also reinforces interest critical for retainment post-completion.

Programs are most effective when there is infrastructure in place to bridge training with employment, contractor engagement and job-site field applications. Registered apprenticeships act as that bridge between training programs, prospective participants/incumbent workers and employers. Employer outreach within those local communities is an integral component of those programs.

Unions, Registered apprenticeships and Joint Apprenticeship Training Committees are best positioned to administer these training programs. They have a direct relationship to the U.S. Department of Labor (DOL), knowledge of standards and best practices and the infrastructure to deliver scalable training programs across the United States. Trainers and employers work together to identify needs, new training and emerging technologies to keep up with an evolving industry. Moreover, apprenticeship programs registered with DOL ensure rigorous equal employment opportunities (EEO). Whereas, with non-registered programs there is no assurance of tracking or enforcement of EEO, quality standards or an explicit career pathway.

C2. What education and training (i.e., workforce development) strategies are most effective, and why, for new workers in the energy efficiency and residential buildings-focused electrification industries (e.g., online learning, classroom and lab instruction, on-the-job training, hybrid models)? Are there effective training models that target new workers?

The most effective strategies for incumbent workers are the same as those for new workers: Hybrid models that include online learning, classroom and lab instruction, and on-the-job training. Programs are most effective when there is infrastructure in place to bridge training with employment, contractor engagement and job-site field applications. Registered apprenticeships act as that bridge between training programs, prospective participants/incumbent workers and employers. Outreach within those communities is an integral component of those programs.

C3. Is there a need for programs to train the trainer? If so, what strategies are most effective for programs that train the trainer? Who is best positioned to administer these programs?

There is a constant need to train the trainer in order to scale nationally, stay current on new products and technologies and to standardize training. Due to a historic labor demand that will inevitably be created by the BIL and Inflation Reduction Act in the

energy-efficiency sector, there is a need to scale training nationwide. Staying up-to-date on emerging technologies, products and practices to meet updated standards and deliver new training methods in partnership with manufacturers. Lastly, uniformity of training is critical to meeting standards and codes across a variety of climates. Labor organizations like the IUPAT that run registered apprenticeships have the qualifications, staff capacity and infrastructure already in place to administer training. This includes national training centers with regularly scheduled training courses for instructors as well as field staff tasked with delivering local training sessions as needed.

C4. What education and training (i.e., workforce development and business owner support) are most effective, and why, for contracting firms? Why and when do contracting firms participate in training, amidst other competing priorities? What business owner training strategies for contracting firms exist?

Labor unions, contractor associations and some general contractors provide education and training around contracting, procurement, capacity and scalability. Two examples are the International Union of Painters and Allied Trades, “Top Workplace Performance” program and Suffolk Construction’s “Build with Us at Suffolk” program.^v

Workforce Development is much more than outreach, recruitment and training. Joint Apprenticeship Training Committees (JATC) are most effective because they address the needs of the industry, the needs of the contractor and the needs of the participant worker. In these scenarios there are checks and balances in place to ensure a commitment to workforce development, program design and the support services needed to accelerate in any given industry. Contractors cannot meet the challenges alone, especially in a tight labor market. Programs like those listed above as well as General Contractor Offices of Trade Diversity are in place to help contractors build credit worthiness and navigate the capitalization process to address the financial barriers for small businesses.

C6. What obstacles prevent access to training for workers and contracting firms? What type of incentives or return on investment would workers and employers need to invest in the training?

Obstacles that prevent workers, especially those in underserved, overburdened and disadvantaged communities, include lack of education and promotion of career paths in the energy-efficiency sector, lack of investment in Career and Technical Education (CTE) training programs, and lack of wrap around services such as transportation to those programs, financial support, child and elder care. Historically, there has been a lack of job placement opportunities and post training career counseling services and contractor engagement programs that build upon those career ladders.

Workers need a clear career path that includes family sustaining wages, health benefits and a free and fair choice to join a union that advocates for better working conditions. Career counseling services and continued engagement with unions and contractors to provide work opportunities post training. Contractors would also need financial incentives to commit to workforce development as well as connections to project portfolios in order to sustain any program. They would also need industry projections and education on scalability to remain a viable competitor in the market.

Category E: Equity and Partnerships:

E1. How can DOE design the EAT, CST, and Contractor Training Program to include and best serve individuals from disadvantaged communities and underserved populations in workforce development and economic inclusion programs? How can DOE design these programs to reach rural community members and businesses?

The whole-of-government Justice40 (J40) Initiative calls for a minimum of 40% of all benefits of climate and clean energy federal investments to go to disadvantaged communities that are marginalized, underserved, and overburdened by pollution. Executive Order 14052^{vi} on the Implementation of the BIL highlights this priority, calling on all agencies to invest public dollars equitably. A Justice40 “covered program” is a Federal Government program that falls within the scope of the Justice40 initiative because it includes investments that can benefit disadvantaged communities in the following areas (1) climate change, 2) clean energy and energy efficiency, 3) clean transit, 4) affordable and sustainable housing, **5) training and workforce development**, 6) the remediation and reduction of legacy pollution, and 7) development of critical clean water infrastructure.^{vii} Therefore, the EAT, CST, and Contractor Training Program are all J40 covered programs and expected to demonstrate and measure that at least 40% of benefits from these programs go to disadvantaged communities.^{viii}

For Energy Auditor Training, Career Skills Training and Contractor Training Program, we recommend that DOE support disadvantaged workers and communities by:

- Working with DOL to incentivize states to link training and certification programs with pre-apprenticeships, registered apprenticeships and local unions.
- Tracking anonymized disadvantaged worker participation (recruitment, retention and advancement), in coordination with the Department of Labor.
- Eliminating economic barriers to participation by allowing part of the funding to go towards application waivers, transportation vouchers, child-care vouchers, etc.
- For any competitive grant applications, requiring a section describing how the proposed program benefits disadvantaged workers. Consistent with DOE requirements in other programs, this may include:

- Identifying existing community networks, such as high-quality community-based organizations, for recruitment of disadvantaged workers^{ix};
- Different available methods for training including in-person, online, etc.;
- Evidence of a community benefit plan and education of available training:
 - Applicants must develop a Community Benefit Plan (CBP) to describe their proposed actions for 1) community and labor engagement; 2) investing in the American workforce; 3) advancing diversity, equity, inclusion, and accessibility (DEIA); and 4) contributing to the Justice40 Initiative.
 - Components of the Community Benefit Plan include:
 - A Social Characterization Assessment, where applicants include a brief writeup of the community dynamics, decision making processes, etc.;
 - An Initial Stakeholder Analysis Summary, where applicants identify the stakeholders, sectors, labor unions, communities, organizations, etc., involved with and affected by the upcoming project;
 - A Two-Way Engagement Statement where the applicant should include a statement discussing how program implementation incorporates community input for the project and the extent to which the host communities have indicated support; and
 - Worker safety and health and the right to organize a union.

E6. How can DOE use funds to expand business ownership in energy efficiency and electrification fields for people of color, women, individuals with disabilities, veterans, and other disadvantaged communities and underserved populations?

Businesses in the energy efficiency industry should represent their communities and be as diverse as the individuals they serve. For all three programs, DOE should consider provisions that assist these groups by:

- Defining minority/women business enterprise members, determining thresholds for business ownership/partnerships and demonstrating “lived experience” and local connection with the community.
- Incentivizing partnerships between more experienced and less experienced businesses that guarantee a minimum equity share.
- Providing technical assistance and financing tools that provide resources to emerging BIPOC businesses that enable them to compete with more experienced competitors.

Category F: Access to High-Quality Jobs:

F1. How can DOE best design these programs to support the direct and indirect creation of high quality, good-paying union jobs, especially in disadvantaged communities and for dislocated workers?

The U.S. Department of Labor's Good Jobs Initiative calls on all federal agencies to increase access to good, quality jobs and to protect workers' rights. Energy efficiency investments can support existing jobs as well as create new quality, family-sustaining jobs. There are currently over 2.3 million jobs in the energy efficiency sector. BGA estimates that for every \$250 million invested in energy efficient buildings—more than 16,700 jobs are created over 10 years.^x This breaks down to 6,562 direct, 4,225 indirect and 5,937 induced job years. Done right, these will be good, family-sustaining jobs created in domestic manufacturing, construction, and professional trades.^{xi}

With the growth of the energy efficiency sector and to ensure quality job creation potential it is important that these federally funded training programs are connected to local unions. Unions have existing training infrastructure, staff capacity and skills standards that ensure a qualified workforce and a career pathway. Successful DOE training programs will be those linked with pre-apprenticeships and registered apprenticeships that already have established credentials with the U.S. Department of Labor.

F2. What are the barriers and challenges to creating high quality energy efficiency and residential buildings-focused electrification jobs and businesses? Are these barriers and challenges different for those from disadvantaged communities?

There are barriers to identifying financing mechanisms as well as capacity issues in navigating the federal and state grant-making process. Sourcing contractors, especially those with a high-road business model can also create issues in project deployment, schedule, and the ability to attract and retain workers.

F3. What existing workforce education and training efforts (e.g., specific registered apprenticeship programs, labor management training programs, community college or technical school programs, pre-apprenticeship programs, etc.) are preparing displaced, underrepresented, and historically disadvantaged workers for energy efficiency and residential buildings-focused electrification jobs? How can those efforts be best supported or augmented to ensure the success of the EAT, CST, and Contractor Training Program? What training pathways are needed, or already exist, to address these needs? Union supported pre-apprenticeship programs have a significant track record for actively promoting diversity in the construction trades.^{xii} The IUPAT Labor-Management Cooperation Initiative in partnership with pre-apprenticeship programs like [Wisconsin](#)

[Big Step](#), [Building Pathways Boston](#), and [Building Futures Rhode Island](#) are taking a proactive approach to workforce development in the energy-efficiency sector. Other joint High-School CTE, Labor, Employer partnerships and articulation to registered apprenticeship programs such as Madison Park High School, IUPAT and Tremco foster awareness, education and collaboration to meet workforce needs in the EE sector.

Financial support for additional instructors, advanced curriculum design, consumables, wrap-around services and program promotion are needed. Stakeholder convenings are a vital component of identifying these needs. Wrap-around services that have been identified as the most successful for retention of disadvantaged workers includes: “transportation assistance; case management for legal, housing and employment issues; mentoring from other people of color and women in the trades; tool and clothing vouchers; and referrals to, if not financial support for, childcare services that feature early start times.”^{xiii}

F5. Will prospective funding applicants or recipients commit to ensuring workers have the free and fair chance to join a union, beyond current legal requirements, by providing union organizers access to property and workers, pledging to remain neutral in any union organizing campaign, and voluntarily recognizing a union based on authorization cards signed by a majority of your employees, entering a collective bargaining agreement with a union selected by a majority of your employees within one year, and/or establishing a labor management partnership? If not, why?

Through the Good Jobs Initiative and the memorandum of understanding with DOL, we applaud DOE’s commitment to protecting workers rights including the right to organize. The best way to ensure that training program funds are being used in support of these efforts is to prioritize eligible entities with a proven track record of protecting workers rights.

F6. How should the quality of and equitable access to jobs by these programs be measured and evaluated? What specific performance measures should be collected to assess program quality? Are there related studies or reports on this topic available?

A quality job can be measured in pay, benefits, health and safety, and union neutrality. For the construction sector, which includes many energy efficiency jobs, it is required to pay the prevailing wage, also known as Davis-Bacon and Related Acts (DBRA). All Contractors and subcontractors must pay employees the local prevailing wages and accompanying benefits as identified under the law. The establishment of Health and safety plans and committees that include worker participation also point to quality jobs. Utilization of Project Labor Agreements, Collective Bargaining Agreements and Community Benefits Agreements can also be used as metrics for quality jobs.

Justice40 metrics and tools should be utilized to measure and evaluate these training programs for equitable access. Training programs should be located in a Justice 40 community or be recruiting and retaining workers from disadvantaged communities. Applicants can identify Justice40 communities by utilizing the Climate and Economic Justice Screening Tool or the Energy Justice mapping tool. Equitable access can also be measured in the wrap-around services that are available for trainees to overcome economic barriers to participation. Training programs can include targeted hire and local hire provisions to identify and track the percentage of disadvantaged workers they are recruiting and graduating each year.

Endnotes

ⁱ U.S. Department of Energy, Windows Technologies Subprogram Area. Available online:

<https://www.energy.gov/eere/buildings/windows>

ⁱⁱ Berkeley Labor Center, *EE Program Workforce Guidance Plan*, 2014. Available online:

<http://laborcenter.berkeley.edu/workforce-issues-and-energy-efficiency-programs-a-plan-for-californias-utilities/>

ⁱⁱⁱ Biden administration, “FACT SHEET: Biden-Harris Administration Launches Coalition of States and Local Governments to Strengthen Building Performance Standards.” Available online:

<https://www.whitehouse.gov/briefing-room/statements-releases/2022/01/21/fact-sheet-biden-harris-administration-launches-coalition-of-states-and-local-governments-to-strengthen-building-performance-standards/>

^{iv} Biden administration, “FACT SHEET: Biden Administration Accelerates Efforts to Create Jobs Making American Buildings More Affordable, Cleaner, and Resilient.” Available online:

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^v Suffolk Constructions, Build With Us at Suffolk.. Available online:

<https://www.ceoaction.com/actions/build-with-us-suffolk/#:~:text=To%20do%20so%2C%20we%20developed,work%20with%20large%20general%20contractors.>

^{vi} Federal Register, “Implementation of the Infrastructure Investment and Jobs Act.” Available online:

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^{vii} Biden administration, Justice40. Available online:

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^{viii} U.S. Department of Energy, DOE Justice40 Covered Programs. Available online:

<https://www.energy.gov/diversity/doe-justice40-covered-programs>

^{ix} ICERES, *Diversity Equity and Inclusion in the Construction Trades*, 2023: Available online:

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^x BlueGreen Alliance, *Build Back Better Investments Will Create Jobs Across The Country*. Available online: <https://www.bluegreenalliance.org/site/build-back-better-investments-will-create-jobs-across-the-country/methodology/>

^{xi} BlueGreen Alliance, *Making the Grade 2.0*. Available online: <https://www.bluegreenalliance.org/wp-content/uploads/2017/09/MakingTheGrade-2.pdf>

^{xii} ICERES, *Diversity Equity and Inclusion in the Construction Trades*, 2023: Available online:

<https://subscriber.politicopro.com/f/?id=00000185-c05b-d88f-aba5-f67fd0b90000&source=email>

^{xiii} Ibid