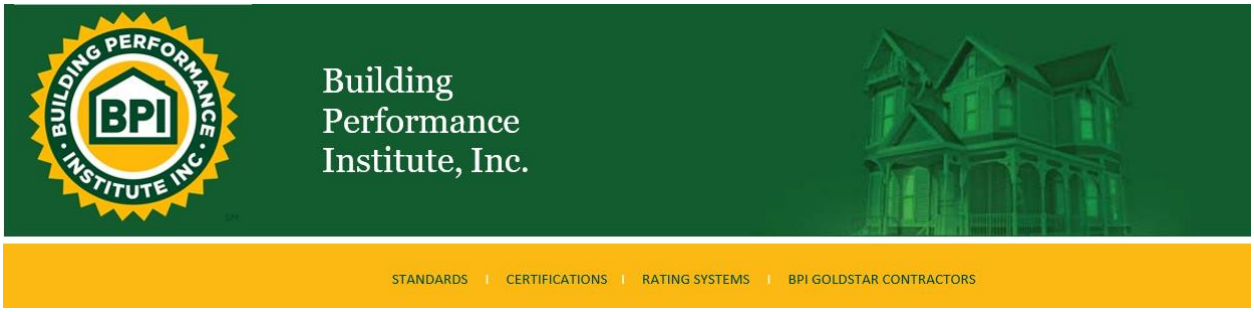

Building Performance Institute (BPI)
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Category A: Respondent Type

A1. What type of entity is the organization?

The Building Performance Institute is a 501 (c) 3 national non-profit organization dedicated to developing consensus standards for the assessment and upgrade of the nation's existing housing stock – both single family and multifamily – and certifying the workforce to ensure quality work. The full set of BPI standards can be found here. A full list and descriptions of current BPI certifications can be found here.

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

BPI has established relationships with a national network of 107 training organization partners who deliver training and serve as BPI Test Centers in proctoring written and field practical certification exams in every state. A state level locator for the BPI Test Center network can be found here.

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?

A table of BPI's existing certifications by state is provided below. The BPI Building Analyst and Envelope certifications are the highest concentration of BPI certifications.

BPI Certifications by State

Certification Type by State	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA
Building Analyst	17	16	119	110	275	135	283	16	49	64	132	0	72
Envelope	2	5	7	11	26	13	267	4	20	23	14	0	6
HEP	16	12	28	14	115	72	42	1	17	24	35	0	65
HHE	0	0	0	1	2	5	41	1	1	0	0	0	5
IDL	0	10	14	6	18	63	102	2	14	301	31	0	4
Others	0	1	3	4	43	14	67	7	7	10	9	0	7
Totals	**35**	**44**	**171**	**146**	**479**	**302**	**802**	**31**	**108**	**422**	**221**	**0**	**159**
GS Contractors			**1**	**4**	**12**		**12**		**2**		**1**		
Assessors							**12**						**0**
Test Centers				**1**	**5**	**1**	**3**		**1**	**2**	**5**		**1**
Proctors			**4**	**1**	**13**	**3**	**3**			**4**	**10**		**1**

Certification Type by State	ID	IL	IN	KS	KY	LA	MA	MD	ME	MI	MN	MO	MS
Building Analyst	24	291	73	47	63	118	454	327	144	172	144	111	51
Envelope	4	150	6	6	9	8	106	95	9	16	7	29	7
HEP	30	234	100	49	79	28	69	142	50	121	150	107	25
HHE	0	30	3	1	0	0	3	9	0	18	11	4	0
IDL	3	50	4	0	15	147	31	21	14	26	4	6	14
Others	1	35	15	1	5	2	20	35	15	7	48	3	1
Totals	**62**	**790**	**201**	**104**	**171**	**303**	**683**	**629**	**232**	**360**	**364**	**260**	**98**

Certification Type by State	MT	NC	ND	NE	NH	NJ	NM	NV	NY	OH	OK	OR	PA
Building Analyst	27	153	18	21	86	378	21	28	715	170	36	81	434
Envelope	0	28	0	1	9	100	2	3	326	20	0	26	35
HEP	52	90	32	36	41	56	19	9	254	210	23	88	174
HHE	2	1	1	1	0	2	3	0	51	1	0	2	6
IDL	1	73	0	3	1	32	1	11	104	11	5	7	65
Others	1	17	0	0	1	211	0	1	702	8	2	20	107
Totals	**83**	**362**	**51**	**62**	**138**	**779**	**46**	**52**	**2152**	**420**	**66**	**224**	**821**
GS Contractor		**2**		**1**	**0**	**55**	**1**	**1**	**164**	**3**	**1**		**10**
Assessors						**1**			**1**				
Test Centers	**1**	**4**			**1**	**4**	**1**	**2**	**14**	**2**	**1**	**1**	**6**
Proctors	**3**	**5**			**4**	**7**	**3**	**4**	**38**	**5**	**2**	**8**	**16**

Certification Type by State	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY	Other
Building Analyst	117	86	9	59	172	51	122	124	126	121	40	12	1
Envelope	18	18	0	7	33	8	22	52	7	8	3	0	1
HEP	35	37	14	46	98	69	114	46	135	111	54	18	0
HHE	0	11	0	1	5	0	5	7	9	16	1	0	0
IDL	14	20	0	48	166	25	42	0	12	20	1	1	2
Others	5	9	0	8	6	1	32	12	3	4	1	0	0
Totals	**189**	**181**	**23**	**169**	**480**	**154**	**337**	**241**	**292**	**280**	**100**	**31**	**4**

"HEP" in the tables above represents DOE's Home Energy Professional certifications from the Weatherization Assistance Program (WAP). The Building Analyst certification, the BA-T and BA-P certifications, and the WAP Energy Auditor certification all point to the ANSI/BPI-1100-T Home Energy Auditing Standard, which defines what is contained in the energy audit, and the ANSI/BPI-1200-S-2017 Standard Practice for Basic Analysis of Buildings, which defines how to conduct the energy audit of buildings. These two ANSI standards should form the basis for all DOE supported work conducted in existing residential building energy efficiency upgrades.

The federally funded WAP program drives demand for the HEP certifications, while state and utility programs have traditionally supported the Building Analyst, Envelope, Infiltration and Duct Leakage, Heating and AC/Heat Pump certifications.

Please note that the Building Analyst and Envelope certifications have undergone revisions over the past 18 months to eliminate overlap. The new designations are now Building Analyst Technician (BA-T) and Building Analyst Professional (BA-P) which represents a better career

path option for individuals coming into the industry. BPI's Building Science Principles (BSP) certificate exam is a prerequisite for the BA-T certification. The reference guide and exam are available in both English and Spanish. The BA-T focuses on learning how to use the diagnostic equipment in the energy audit process and home energy upgrade work. The certification only requires a field practical exam and not a written exam. More on the new BA-T can be found here. The BA-P adds energy modeling and work scope development. It requires just a written exam. More on the BA-P can be found here. They were introduced on January 1, 2023 and the full transition will take place on June 1.

The BPI-2400 standard is called out in the IRA HOMES legislation. BPI was just awarded a contract by NYSERDA to update the BPI-2400 standard. That work is underway right now and will be made available to DOE and the State Energy Offices on an expedited basis. We are keeping Joan Glickman, Maddy Salzman, and Dale Hoffmeyer aware of the progress and are involving NREL and PNNL in the advisory process. We are also communicating directly through NASEO committees and the State Energy Offices.

B4. What types of contracting firms should DOE target for workforce development and business owner training (e.g., general contractors, home performance contractors, HVAC or electrical contractors, etc.)? What skills and knowledge are most pressing for these contracting firms to have? How do the needs of contracting firms vary based on the size of each business?

BPI has found that HVAC contractors who are willing to embrace the whole house approach are capable of delivering the savings for their customers. However, single measure HVAC contractors are not going to be able to deliver the types of savings expected in the IRA. Home performance contractors are good at delivering comfort but don't always have the skill sets to design and install heating and air conditioning systems. It is important for these trades to build relationships with other specialized trades to deliver whole house energy efficiency improvements.

Cold climate heat pumps offer an ability to reduce carbon in heating and cooling a house, but it is critical to pay close attention to the design, installation, and commissioning of these systems. NEEP published a report on the delivered performance of heat pumps and found that there are many ways for a heat pump system to fail to meet customer requirements but only one way to get it right. NYSERDA's Comfort Home program has focused on reducing the load requirements first by air sealing and insulating and then design for the heat pump to meet the reduced load. That has led BPI to develop a Cold Climate Air Source Heat Pump Design certificate of knowledge that will be available later in 2023.

Category C: Workforce Development and Business Owner Training Strategies

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?

BPI introduced a Healthy Home Evaluator (HHE) certification in 2016 but realized that the training/Test Center network was not prepared to deliver the necessary training. BPI recruited three top specialist trainers (Kevin Kennedy, Joe Medosch, and Rick Hall) to deliver regional train-the-trainer events for BPI's Test Center network. The train-the-trainer sessions used real homes to compliment the classroom TtT sessions. We could use a variant of this strategy to integrate home performance training into the technical schools and community colleges across the country. The key is to build a strong curriculum that can be shared with the trainers and find individuals who are effective at communicating the substance of the training to future trainers. BPI would work with IREC and Debra Rowe of the National Council for Workforce Education in organizing the train-the-trainer work.

C5. Which certifications or credentials should the EAT, CST, and Contractor Training Program prepare participants for? Please specify the program in your response.

BPI's Energy Auditor training is specified in the BIL under the EAT clause. As pointed out earlier, the BPI Building Analyst and the new Building Analyst Technician and Building Analysis Professional certifications also point to the ANSI/BPI 1100 and 1200 Energy Auditing standards. They should be specified as well since the majority of the private sector work envisioned in this legislation has traditionally been specified by state and utility programs for Building Analyst, Envelope and specialized certifications like AC/Heat Pump and Heating. Since air sealing and insulation are incentivized in the legislation, BPI's Air Leakage Control Installer (ALC) and the Infiltration and Duct Leakage (IDL) certifications are appropriate.

The AnnDyl Policy Group conducted a Contractor Survey (see results here) between November 22, 2022 and January 6, 2023 relating to contractor preferences on the two rebate programs in the IRA legislation. On the question of which certifications the respondents think should qualify contractors to perform this work, the top response by far was BPI certifications for Building Analyst (moving to BA-T and BA-P) and Infiltration and Duct Leakage (61% of the 979 respondents compared to 30% for the next choice).

Category D: Accessing Federal Funding

D1. What information can DOE provide in the FOA that would be helpful to applicants?

DOE provided financial support for the development of an accreditation of training providers who deliver training for the Home Energy Professional program in the Weatherization Assistance Program. There are currently 20 training organizations who have been accredited by the Interstate Renewable Energy Council for the Energy Auditor designation. These training organizations are all under contractual agreement with BPI to serve as BPI Test Centers. Another 87 training providers also are under agreement with BPI to serve as BPI Test Centers and provide the training and proctoring for the full range of other BPI certifications – including Building Analyst, Envelope, and the new BA-T and BA-P certifications that are specified in state and utility programs across the country. Instead of limiting the EAT to just Energy Auditor, BPI recommends that DOE specify an equivalence for the new career path option of the Building

Analyst Technician and Building Analyst Professional. As stated previously, all three designations point to the ANSI/BPI 1100 and 1200 standards.

It is important that all of these training providers be accepted to deliver the training to meet the increased demand for BPI certification training. We learned yesterday that the state of Michigan sponsored BPI certification training for 60 individuals and 300 people tried to sign up.

From DOE's perspective, it is important that minimum criteria be established for contractors seeking to participate in the program. Licensed, bonded and insured is not enough of a safeguard for the large investments the government is making in energy efficiency and electrification of the existing housing stock. No one wants to see an article in the Wall Street Journal on how the funds didn't deliver the savings. BPI has operated a contractor accreditation program for over 20 years. Now called the BPI GoldStar Contractor program, companies who participate agree to meet certain criteria: 1) retaining BPI certified professionals sufficient to ensure the quality of the different types of work being performed (e.g., auditing, air sealing, insulation, window and door replacement, and heating and/or air conditioning maintenance or replacement); 2) following BPI standards relating to the work they are performing; 3) establishing a customer dispute resolution process; and, 4) commitment to implementing quality management systems in the firm to ensure the delivery of high quality work. We recommend that DOE and the states set minimum criteria for contractors along these lines. The BPI GoldStar Contractor program is one example of a contractor accreditation that DOE and the State Energy Offices could specify. The Contractor Training Program should provide funding to help contractors meet the minimum "accreditation" requirements set by DOE and the State Energy Offices. We are not saying it has to be a BPI contractor accreditation, but it could say "or an equivalent contractor accreditation process."

D2. Is a 50% match requirement for eligible nonprofit partnerships viable as part of the CST? What challenges do prospective applicants face to this cost share requirement? How can DOE help organizations with the greatest need access these funds?

A 50% match requirement is not viable for non-profit partnerships with community based organizations most likely to deliver these services, especially those looking to prioritize underserved communities. The challenge is finding another source for the funding at the state or local level. Some state level Departments of Labor, for example, provide grants to contractors to support On The Job (OJT) skills development.

D3. How can the EAT, CST, and Contractor Training Program dollars enhance funds from other federal, state, local, utility, and private sources? How can DOE encourage applications that draw on non-federal resources to leverage federal funds for maximum impact?

The Habitat for Humanity of Great Providence chapter has pioneered an innovative approach to bringing underserved BIPOC communities into the home performance contracting space. BPI is in close communications with Mark Kravatz who brought this "contractor incubation" model into their network and we can provide introductions to him. He has since left the local chapter and is working under contract to HfH International to expand this to the other 1100 local

chapters. Habitat recruited individuals who had done work for the local chapter but wanted to build a contracting company. Habitat raised sufficient private sector money to provide a loan for the tools, equipment and trucks to get them going. Habitat also provided back end "wrap around" training to help them with the financial, HR, and administrative skills to run a company. They also served as a BPI Test Center to train and certify the key staff for the work they would be performing. Each of these new companies provided home performance upgrade services for Habitat under contract. Over a three year period, these new companies paid back the original loan. At this point, they were fully formed as a company and had established their credit record by paying back their first loan. Establishing credit is a HUGE impediment to getting organized as a contracting company. This is not just a model for Habitat's 1100 chapters but could serve as a national model for helping people in underserved BIPOC communities gain entrance into home performance contracting and thrive as a business.

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?

DOE should provide technical support and assistance to marginalized and underrepresented contractors, especially BIPOC contractors, to help them navigate rebate applications and get approved for placement on approved contractor lists

E2. What are examples of successful existing nonprofit partnerships between nonprofits, industry, and labor organizations? What is needed to develop more partnerships, particularly to reach disadvantaged communities and underserved populations and provide access to career-track training?

BPI is working under a recently implemented contract to National Grid and NYSERDA for its Test Center to deliver training and BPI certification exams to 225 individuals from underserved BIPOC communities in National Grid territory in New York state. This nearly $700K contract covers the cost of pre-training in BPI Building Science Principles (BSP) coupled with the printed reference guide and a certificate of knowledge exam. It also covers the training expenses for one course related to BPI certification and the expenses for the proctoring of the BPI certification exams (written and field practicum). Participants are required to pay out of pocket just $150 for all of the training and certification expenses.

This is a major first step in getting public and private sector money committed to a focus on creating job opportunities for people of color relating to the opportunity to make a substantive difference in the performance of the 138 million existing homes across the country and help meet national and international climate change goals. We expect that utilities across the country will replicate this model and provide "cost sharing" to the workforce development goals of DOE.

While just one small example, this contract represents the tip of the iceberg in bringing a new generation of individuals into the business of upgrading our out-of-date, polluting, and energy inefficient housing stock.

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?

Replicate the Habitat for Humanity "contractor incubator" model described in response to item D3. Again, BPI can provide the introduction to the key organizer of this effort.

Category F: Access to High Quality Jobs

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 too many silos in the residential retrofit space. HVAC companies could embrace "whole house" work, but they structure their sales process around the repair or replacement of individual units. Commissions are based on sales and crews are trained to get in and get out quickly. Those HVAC companies like HALCO or Isaacs that have embraced whole house work do extremely well by providing comfort solutions to their customers and focus on whole house jobs. Electrification is an extension to this comfort solution for customers who are concerned about their carbon footprint or the byproducts of gas combustion. The problem is worse for disadvantaged communities even with incentives as there is a perception by the trades that the money is not there to cover the costs of the work. This existing trade workforce is aging out and retiring. Considerable effort will need to be made to bring new blood into the home performance upgrade trades. A recent article in the Detroit News highlights how DTE Energy and a local energy services firm, Walker-Miller, overcome these challenges by showcasing how the work is done and recruiting individuals from the community to work in these trades. Walker-Miller is a BPI Test Center and delivers training and certification within the metropolitan Detroit area. This is a model that is worth replicating throughout the country.

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?

DOL Sponsored Apprenticeship programs like the one under development by the Building Performance Association (BPA) provide an opportunity for time based and hybrid progression through a series of credentials and industry experience while maintaining active employment. Standardized credential

requirements, embedded with necessary training modules that better prepare a worker can be accomplished by stacking additional training modules or classes from a variety of sources depending on the customized needs of the program, employer, or worker. Average Apprenticeships range from 1,000 to over 2,500 hours with no less than 144 hours of classroom hours either in person or online. Credential-specific trainings only accommodate a small percentage of student's classroom hour requirements. This provides an opportunity to access additional training opportunities for personal or professional development.

Structured Apprenticeship wages are tiered for advancement in conjunction with credentials obtained and work hours performed while remaining flexible enough to be modular across the country. Wages are, on average, 33% higher at the conclusion of the apprenticeship. Additional structured wage schedules can be added when a candidate achieves Journeyperson, or Master while receiving additional credentialling, increased experience, and appetite for career growth.

The resulting activities for an employee in the first year or two of service will provide lasting skills and knowledge that could be adaptable to other industries and trades. Systematic change within small to large contracting firms can be achieved while immediately serving the need for qualified workers. Providing mutual focus on innovation and learning will enhance business opportunities for growth, and pivot to interact with market conditions. Continued engagement between industry professionals and organizations across segments of energy efficiency activities is best accommodated by legitimizing specialists within organizations that have the education and experience to properly apply best practices.