

# **Creating a Benchmark for Quality: The Guidelines for Home Energy Professionals Project**

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## **ABSTRACT**

The U.S. Department of Energy's (DOE) Weatherization Assistance Program (WAP) is currently developing a comprehensive set of tools and resources aimed at enhancing the training and work quality standards to be utilized throughout the home energy upgrade industry. These efforts are supported by the WAP National Training and Technical Assistance (T&TA) Plan. The Guidelines for Home Energy Professionals is the cornerstone of the plan and is a collaborative effort to engage the home performance industry in developing a suite of resources that include work quality specifications, training program accreditation, job task analyses and certifications for workers. The goal of the Guidelines project is to help the WAP demonstrate the quality of the program as well as serve a national need to create a vital and robust home energy upgrade industry. Over the course of its history, the WAP has been a key player in deploying technology that has helped facilitate greater industry adoption. Through these tools, Weatherization will help define residential energy upgrade work as a distinct and professional industry as well as an easy to define product for consumers.

## **Introduction**

The U.S. Department of Energy's (DOE) Weatherization Assistance Program (WAP or Weatherization) reduces energy costs for low-income households by increasing the energy efficiency of their homes, while ensuring their health and safety. Started under the Carter Administration, the Weatherization Assistance Program has been in operation for over thirty-five years and has weatherized over 7.3 million households since its inception.<sup>1</sup>

In 2009 the Weatherization Assistance Program got some attention. The five billion dollars that the program received thrust this formerly small program that insiders liked to refer to as "the best kept secret in Washington" onto the national stage. The WAP's contribution to the national economic stimulus - the American Recovery and Reinvestment Act - is a success. The program exceeded its original goal of weatherizing 593,000 homes by 20 percent and employed more than 15,000 new workers over a three-year period making the WAP the 2<sup>nd</sup> largest job creator under the Recovery Act.<sup>2</sup>

When the WAP's contribution to the national stimulus was being considered, a broader opportunity was recognized for the nation to develop a well-defined and nationally supported market for residential energy upgrade services across a wide spectrum of subsidized programs and the private market. The White House's Council on Environmental Quality and the Vice

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<sup>1</sup> Represents the number of homes weatherized since the program's inception through December 31, 2011 with annual program funds as well as funds from the American Recovery and Reinvestment Act of 2009.

<sup>2</sup> WAP exceeded the goals it established under the Recovery Act by 20 percent as of March, 2012. Job creation numbers available at [www.federalreporting.gov](http://www.federalreporting.gov)

President's Middle Class Task Force highlighted retrofitting America's homes as a national priority both for environmental well-being as well as a potential large economic growth sector. In order to foster a national residential retrofit industry with broad reach, the White House (CEQ 2009) and DOE, through the National Labs (LBL 2010) and Weatherization Assistance Program (DOE 2009), identified the need for quality training, standardization of worker certifications and the consistent delivery of high quality energy upgrades. Simultaneously, the need to develop criteria for training program accreditation to assure quality training in addition to the development of certifications for qualified trainers was identified through the Weatherization Trainer's Consortium.<sup>3</sup> The effort to develop these resources for the WAP network as well as make them available to the greater home energy upgrade industry helped define the work of the WAP Training and Technical Assistance team during the Recovery Act period.

As the Weatherization Assistance Program has worked its way through the Recovery Act period, it has become apparent that the needs identified at the outset were on target. Yes, the program experienced tremendous growth in employment and services to low income families, but it was simultaneously placed under a microscope. The media, Congress and the Department of Energy's own Inspector General all spent a lot of time examining just what was being done with five billion dollars of Recovery Act funds. With such a large amount of public funding flowing through the WAP's network of grantees, local agencies and contractors, the scrutiny of the program's operations became as much a part of the Recovery Act experience as the work itself. Much of this scrutiny focused on the quality of the work performed in homes by the program. The most salient theme that has emerged from this experience is the need to be able to clearly demonstrate work quality to outside stakeholders. While the WAP has a mandate to provide cost effective energy upgrade services to its clients, there has never been a consistent, national yardstick against which to measure the quality of the work post-installation. In addition, the reality from the outset was that while this massive infusion of funding would do much to employ a new labor force in the short-term, there would come a point when approximately 15,000 WAP workers would find themselves without jobs due to the expiration of the Recovery Act dollars. These trained and valuable workers would need somewhere to go and some way to demonstrate their skills. Needs identified early on surrounding work quality and worker opportunity have been reinforced as the Recovery Act period progresses. Part of the intent of the Recovery Act was to be a bridge until the economy picked up. The economic stimulus package was just that – a means to stimulate and in many respects, create the home energy upgrade market. It is more apparent now, than ever before, that the WAP is the right organization to help build the foundation of a national effort to help define residential energy upgrade work as a distinct and professional industry. It is an effort that serves the WAP's own programmatic needs to demonstrate the quality of the program as well as a national need to create a vital and robust home energy upgrade industry.

## **The Guidelines for Home Energy Professionals**

The WAP National Training and Technical Assistance (T&TA) Plan is the guiding document for Weatherization's efforts to sustain the quality of its work through the development

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<sup>3</sup> The Weatherization Trainer's Consortium includes a cross-section of weatherization training center staff, independent trainers, state and local agency staff, community and technical college instructors, and DOE managers, and provides an opportunity for the exchange of information.

of technical tools and resources as well as training. For the Recovery Act period the T&TA plan focused on two major objectives; 1. to assist the network with training workers entering the program, and, 2. to develop specific, technical resources that will define the work of the Weatherization and home energy upgrade industry and to help ensure that work is completed to the highest technical standard. If successful, these tools will assist the WAP workforce in migrating to the greater home energy upgrade industry in the post Recovery Act environment. The Guidelines for Home Energy Professionals project is the part of the WAP's T&TA plan that guides the efforts to develop the national resources identified by the White House and others.

It is the WAP's operating principle that quality work will ensure sustainability. While quality has always been a mainstay of the WAP's mission, the ability to demonstrate that quality to outside observers has been more elusive. Building science experts can appreciate the story being told by building air leakage rates and infrared scans, but the average consumer may not.

What is needed is an objective measure of the quality of the work, the ability to effectively train individuals to do that work and a mechanism to certify workers based on their skills. The expectation is these three abilities will help establish the home energy upgrade industry and increase consumer confidence that the services they are purchasing are meeting the benchmarks set by a national industry. The Guideline for Home Energy Professionals project takes all of the needs that have been identified and is developing tangible tools to assist in addressing them. Broadly speaking, the Guidelines effort is about achieving quality in any given home energy upgrade task. To do that, the Guidelines take a three pronged approach in alignment with the nationally recognized needs:

1. **Define the Work.** The Standard Work Specifications for Home Energy Upgrades are intended to define the minimum acceptable outcomes for any weatherization or home performance task to be effective, durable and safe. The SWS have undergone public comment and will be available in final form in 2012.
2. **Validate the Training.** As a national program and a national industry, the WAP would greatly benefit from a uniform way to ensure that all workers are trained and have knowledge skills and abilities to do the work right. The Job Task Analyses (JTA) for the four major energy upgrade job classifications define what a worker needs to know and do. The accreditation of energy efficiency training programs verifies that organizations training workers in the industry are qualified to teach to those JTAs. Training program accreditation has been available since May 2011.
3. **Certify the Worker.** With definitions of work quality and Job Task Analyses delineating the expectations of the workforce, it is important to also provide employers a mechanism for ensuring that employees are capable of meeting the expectations of a national industry. Four new Home Energy Professional worker certifications are part of and aligned with the Guidelines efforts and target a worker's capacity to demonstrate practical ability to perform the work of the industry. The new worker certifications are being piloted in summer 2012.

## Deployment to Industry Adoption

While the WAP takes a broad view as to the possible scope of the Guidelines tools in the long term; they are meant, at their core, to be useful to the field as well as tools that define the Weatherization Assistance Program itself. Weatherization is a program that has evolved

throughout its history to incorporate the most useful and advanced tools and resources to make its daily work of improving peoples' homes safer and more effective. The WAP, with its longevity of service and consistency of place has always been able to serve the greater energy efficiency industry as a proving ground and market outlet for the tools and ideas that advance the industry. In the 1980's the nascent blower door technology was adopted into the WAP. The 1987 *Energy Auditor and Retrofitter* article "Blower Doors: A Subsidized Success" (Mills 1987), describes the "most striking aspect of today's blower door market is the wide-scale adoption of blower doors by agencies that perform energy conservation work under the Department of Energy's Weatherization Assistance Program for low-income homes."<sup>4</sup> Mills goes on to describe how in some states, blower doors were being used exclusively by the WAP for infiltration control and sales were skyrocketing. Thousands of WAP crews working in the field allowed the blower door technology to grow and advance through user feedback to help institutionalize this technology before there was uptake in the private market. The WAP was the largest-scale user of blower doors at the time and this "market pull" has led to a broader range of equipment options, lower-priced doors, and creation of a diversity of private companies offering the services (Mills 1986). Similarly, in the late 1980's, thermal imaging (Snell 1989) and other diagnostic procedures such as pressure balancing, began to be widely adopted by Weatherization crews around the country. The onset of infrared imaging back then, like today, helped to address issues of fraud and quality control, particularly in sidewall insulation, that taken together were significant problems (Snell 1989). The WAP leads the nation in Lead Safe techniques for energy efficiency workers. The WAP's Lead Safe Weatherization requirement and related curriculum pre-dated the EPA's Lead Renovation, Repair and Painting Program (LRRPP, also known as RRP) by a number of years and gave evidence that a large group of contractors could put those important safeguards in place while still maintaining WAP's primary mission of performing measures to achieve energy savings. This legacy is being re-imagined today as the program's Weatherization plus Health initiative is leading the way in the integration of advanced health and safety techniques and resources that are important to ensuring the welfare of energy retrofit workers and clients. The State of Wisconsin Home Energy Plus Weatherization program led the way in piloting the ASHRAE 62.2 ventilation standard in 2005 (Benewicz 2005), a legacy that persists today as the WAP seeks wide-scale adoption of the ASHRAE 62.2 standard by weatherization service providers.

Weatherization has the ability to take the best ideas and technologies available in the industry and make them work on a national level so that advances in the energy retrofit industry can grow to market scale. It is this ability that makes the WAP the right place to develop work specifications, training and certifications that are focused on the actual implementation of energy efficiency upgrade work. No other single organization contains the sheer volume of continuing work and experience that the WAP provides to this effort. While there are many researchers and building scientists doing admirable work at the labs and universities around the world, making that work real and tangible in actual homes is where the WAP specializes. The greater than seven million homes weatherized by the program have provided a testing ground for the building science experts involved in the WAP and beyond. This testing ground has led to improvements and program integration of blower doors (Mills 1987), infrared cameras (Snell 1989), and the development of new tools that facilitate training on whole-house diagnostics such as the House

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<sup>4</sup> *Energy Auditor and Retrofitter* is today's *Home Energy Magazine*.

of Pressure - an interactive tool to show how air moves through the house and how combustion safety can be affected by air pressures in the house.<sup>5</sup>

The WAP is also one of the only pure whole-house programs in the industry, and certainly the largest. The regulations of the WAP mandate that clients receive all cost effective energy efficiency services available, *in the order of their ability provide a return on the investment through energy savings*, as mandated by the program's required Savings to Investment ratio.<sup>6</sup> This means that any tool developed by the WAP, by definition, must take into account the whole-house approach to energy retrofits. This differs from many other programs that allow the client to decide on measures based on personal preference. While this is clearly an important approach in a market driven program, it also means that many times more effort is spent installing appliances and light bulbs than implementing the most energy saving measures such as air sealing or insulating. By addressing the house as a system, the WAP has also developed protocols and assessment techniques to address energy related health and safety (H&S) issues. Thorough combustion safety testing, zone pressure diagnostics, moisture issue assessments and lead safe work practices are the norm in the program. Any document that would purport to serve the best interests of the energy efficiency retrofit world should default to the basic premise that all energy savings work, regardless of its nature, needs to be addressed equally when designing work specifications, training and certifying workers. The WAP must, by its legislative mandate, do this and is therefore an appropriate steward of this effort.

## **Defining the Work: The Standard Work Specifications**

The Guidelines for Home Energy Professionals project centers around what it means to be an industry. At the core of all industries is the ability to explain what the work of the industry is and what it achieves for the consumer. What is the product and how do you know it has been well produced? In many industries, this is often a given; the auto industry produces cars and the consumer has a pretty good idea of what that product is going to do for them. In the home energy upgrade industry, the product has never been well defined. The goal of the work, saving energy, is obvious and explainable, but it is a moving target. Energy savings fluctuate based on various factors from yearly weather patterns, to occupant behavior, to performance of mechanical systems. It may be difficult to evaluate the success of an energy efficiency job based on savings until years after the work has been completed and even then the results may be tenuous. Unlike other industries, where the quality of the work is immediately obvious to the consumer, the home energy upgrade salesperson has a tough job when all they have to promise is the potential of energy savings in the future. However, if we step back and look at the real outcome of an energy efficiency upgrade, it begins to look a lot like a manufactured product. What we are producing is a more energy efficient home - that is the product - not the energy savings. The energy savings are a benefit of owning the product just as better gas mileage is a benefit of owning a hybrid car. Once the work of the energy upgrade industry is looked at through this lens, it becomes easier to describe the product. A car is an assemblage of different parts placed in a prescribed fashion and the energy upgrade is an assemblage of different materials and equipment individually serving a specific function in the overall product. Every

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<sup>5</sup> House of pressure was created in the late 1990's by Anthony Cox, Head Trainer at New River Center for Research and Training, a WAP training center.

<sup>6</sup> See, Title 10 Code of Federal Regulations section 440.18(d) and (e).

car factory has specifications for the proper way to install the various parts to produce the end product. Similarly, the energy upgrade can be broken down into its component parts with specifications for proper installation and desired function.

The Standard Work Specifications for Home Energy Upgrades (SWS) are intended to form the foundation of the Guidelines effort and include documents covering single-family, manufactured housing and multi-family housing. In order to set standards for the performance of workers, training programs and the overall effectiveness of an individual job, the quality of the work must be defined. The SWS document is being developed in an open effort that brings together building scientists, trainers, healthy homes and health and safety experts, labor, weatherization workers, program administrators, product manufacturers and DOE’s Federal Partners at U.S. Environmental Protection Agency (EPA), Department of Agriculture (USDA), Department of Housing and Urban Development (HUD) to develop a commonly agreed upon baseline for quality work in home energy upgrades. As the largest and most long-lived energy efficiency program in country, the Weatherization Assistance Program serves as the lead and ongoing custodian of the Guidelines effort.

Taken at its most basic level, a home energy upgrade job is a collection of individual measures (such as air sealing of the envelope, tuning of the HVAC system, attic insulation, etc.) aimed at increasing the energy efficiency of a particular system in a building. These individual measures are the focus of the SWS. Measure by measure, the work of an energy efficiency retrofit crew is broken down into desired outcomes and the minimum specifications that are required to achieve those outcomes.

It is important to note that the SWS are not being developed as a prescriptive path to achieving the desired outcomes. This is by design. In any task there are a myriad of ways to achieve a particular result. For example, there are many ways to create an effective air barrier across an open soffit from rigid foam board, to plywood, to drywall. In order to give crews, trainers and program administrators maximum flexibility in their work, the SWS are focusing on *what* outcome the work should achieve, not *how* to achieve it.

**Topic: Air Sealing - Attics**

**Subtopic: Cathedralized Attic Ceilings**

**3.1004.1 Detail Name: Sealing Cathedralized Attic Ceilings (insulation installed at roof deck)**

**Desired Outcome:**

**Cathedralized attics sealed to prevent air leakage**

Row	Title	Specification(s)	Objective(s)
3.1004.1b	Backing and infill	Backing or infill will be provided as needed to meet the specific characteristics of the selected material and the characteristics of the open space  The infill or backing will not bend, sag or move once installed	Minimize hole size to ensure successful use of sealant  Ensure closure is permanent and supports any load (e.g., wind, insulation)  Ensure sealant does not fall out

In the example above from the draft SWS the *Objective* column represents the “*why* are we doing this” for the specific measure. The *Specification* tells us “*what* is the bare minimum

level of work quality required” for this measure. With these objectives and specifications in hand, a training program can explain, measure by measure, what the minimum requirements are to do this particular task correctly and why the task is being done. Trainers and work crews have the flexibility to decide what materials and techniques are best suited to a given situation to meet the objectives. Inspectors are also able to make objective decisions as to whether a particular job is acceptable. Either the work performed by the crew achieved the objectives and met the specifications, or it didn’t. This removal of grey area in what constitutes a quality job means that inspections, training, and financing can all be based on a measurable set of outcomes. This reduces confusion and allows stakeholders to know what they can expect from retrofit work and that there is a mechanism for holding contractors accountable.

There are many documents in the market, both within the Weatherization program and among private vendors, which serve as reference manuals for the installation of home energy upgrade measures. There are state specific installation standards, such as the single-family, multi-family, and mobile home Weatherization Installation Standards (WIS) that have been developed for the California Department of Community Services and Development (CSD), the WAP state grantee. Some state level efforts even approach a similar format to the SWS. The difference between other efforts to create such documents, which have been valuable and needed resources, and the Standard Work Specifications themselves lie in both the process for developing the work and the end product itself.

The SWS has gone through a rigorous review and has had broad stakeholder inclusion. As the effort of a large government agency, the SWS process is able to bring a wide and diverse group of stakeholders into the effort from around the country. Industry representatives, government agencies, and subject matter experts from all sectors of the residential building industry have had an opportunity to participate in the development process.

The final product of the Standard Work Specifications effort is also expected to be quite different from other products on the market. While many resources approach the subject of measure installation, most do so from an instructive point of view. Best practice guides give the user a path to completing the work, describing step by step the writer’s opinion of the best approach to completing the task. The SWS are not intended to give instruction, but serve a function one layer below the best practice. They simply describe the desired outcome of a particular task and the minimum conditions necessary to achieve the outcome. This is intended to leave the specifics of how to achieve that outcome to those doing the work. By focusing on outcomes, the SWS give flexibility to individual crews, trainers and policy makers to approach the work in the way that best serves their particular need. The WAP recognizes that conditions vary and crews need the latitude to customize the process to use the materials available in their region, adapt the work to a specific climate zone, or develop proprietary techniques for completing the work faster and cheaper than the competition. As long as the installation achieves the outcomes called for in the SWS, any number of paths could be developed to achieve those outcomes. This outcome driven approach is intended to allow for process innovation and changes in technology, allowing the private market to continue to develop resources targeted to those working in the industry. Best practice guides and innovative training will still be needed. The SWS simply give those tools a nationally accepted base upon which to innovate.

A point of confusion surrounding the SWS often occurs in relation to the audit. The SWS do not specifically address the process of assessing a building. The SWS document is meant to be relevant a step later in the home energy upgrade process. It is imperative that an assessment of the home is performed by a qualified auditor, who is following a high-quality audit

procedure. Once the auditor has conducted a whole-house assessment and developed a list of recommended measures, the standard work specifications can be used to define the required outcomes of those measures and to assess the quality of the installed work.

Given the importance of the audit in successfully completing a home energy upgrade, the Weatherization Assistance Program has developed or participated in the development of multiple resources to improve energy audits. The Weatherization Assistant is an energy audit software tool developed for the Weatherization Assistance Program that contains the National Energy Audit Tool (NEAT) for site-built single-family houses and the Manufactured Home Energy Audit (MHEA) for mobile homes. The WAP is currently developing a fully-featured Multifamily Tool for Energy Auditing (MulTEA) in direct response to auditing needs expressed from the field that will be a part of the Weatherization Assistant suite of resources for use by the WAP and beyond. For multi-family, the WAP is currently working on technical guidelines for the data gathering and analysis portion of multifamily energy audits for the program since none currently exist. The WAP's work in the area of residential auditing is vital to program success and the proper application of the Standard Work Specifications.

This definition of the work and the specifications for producing that work are a major step in establishing residential energy upgrade work as a true national industry. Even if consumers and stakeholders do not have a technical understanding of what is contained in the SWS document, the mere existence of a foundational document with national acceptance has the potential to build confidence in the industry. The SWS provide a common yardstick against which consumers, financiers and policy makers can measure the performance of their service providers.

## **Validate the Training: The Job Task Analyses and Accreditation of Training Programs**

The Weatherization program has always relied upon regular training to ensure the competency of its workforce. A network of highly skilled trainers and Weatherization Training Centers with fully equipped facilities has traditionally delivered training to the national network of local agencies. The Recovery Act created an immense need for newly trained workers as the program ramped up its production to unprecedented levels. This need outstripped the capacity of the traditional training infrastructure and created an opportunity for other training organizations to provide services to the WAP. What had traditionally been a training landscape in which trainers, local agencies and state offices all knew one another suddenly became a marketplace with dozens, if not hundreds of organizations selling their training services to the WAP, its grantees and subgrantees. The informal feedback loop that had always been in place to verify the quality of the training was diluted with the influx many unknown entities. This uncertainty in the Weatherization program echoed a need identified by CEQ (CEQ 2009) in the larger industry for a way to recognize high quality training. Once again, the home energy upgrade industry was lacking a basic component of many other industries, a mechanism for ensuring that the workforce was being trained to a nationally accepted standard. To address this need, the Weatherization program undertook an effort to create an accreditation for energy efficiency training programs. The foundation of that effort was the development of Job Task Analyses.

A Job Task Analysis (JTA) is a formal process, overseen by a professional psychometrician, which brings together a group of industry professionals to draft a document that clearly and concisely lists the required tasks and the associated knowledge, skills and



abilities for a particular occupation. Various certification and training organizations have developed versions of job task analyses that have been used to inform a number of efforts. What had been lacking prior to the Guidelines project was an effort to develop JTAs specifically targeted at the actual workforce for both Weatherization and the typical home performance crew. It was also the case that even when existing JTAs in the market were developed, it was done without the structure required by an organization like the American National Standard Institute (ANSI). ANSI provides a broadly accepted and rigorous approach to the development of professional JTAs. Any effort that intends to have national credibility needs to meet such a standard.

For the Weatherization and Energy Upgrade industries, four individual job classifications were initially identified:

- Installer/Technician: Performs the actual installation of the work.
- Crew Leader: Directs and supervises the work of the Installers
- Energy Auditor: Assesses the home before the work begins for energy savings opportunities and writes a scope of work for the crew.
- Quality Control Inspector: Inspects the quality of the installed work.

For each job classification, there is now a document that clearly delineates what is required of a professional performing the job.<sup>7</sup> These four JTAs are now the basis for a new third party accreditation of energy efficiency training programs<sup>8</sup> and a suite of national worker certifications. The WAP commissioned the Interstate Renewable Energy Council (IREC) to develop and administer an accreditation program for energy efficiency training programs. IREC's Institute for Sustainable Power (ISP) Quality standard is an internationally recognized standard for the accreditation of renewable energy and energy efficiency training programs. The IREC ISPQ International Standard 01022: 2011 specifies requirements for competency, quality systems, resources, and qualification of a curriculum against which trainers and training programs can be evaluated.<sup>9</sup> The four WAP-developed Job Task Analyses are the basis upon which IREC accredits energy efficiency training programs. Training programs must demonstrate that they have the capacity in curriculum, staff and facilities to adequately train workers in all of the skills listed in the JTA. The ability to identify qualified training providers without an expensive process of trial and error allows program managers to be more efficient with limited resources and gives individuals pursuing training the ability to make decisions based on the objective quality of a training provider.

## **Certify the Worker**

The accreditation of training programs goes a long way towards ensuring that workers have access to the resources that they need to develop their skills. In order to form a complete picture of a program's ability to deliver quality services, there also needs to be a mechanism for evaluating the workforce itself. The national worker certification program that is being

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<sup>7</sup> The four job task analyses are available at: <http://www1.eere.energy.gov/wip/certifications.html#jta>

<sup>8</sup> Accreditation is through the Interstate Renewable Energy Council.

<sup>9</sup> The IREC ISPQ International Standard 01022: 2011 is available at

<http://irecusa.org/wp-content/uploads/2011/12/IRECISPQInternationalStandard01022-2011.pdf>

developed for the WAP is the final chapter in the effort to create a baseline standard of quality across the Weatherization and home energy upgrade industries. The certifications will be piloted in June with a national rollout anticipated for September, 2012. Building up from the Standard Work Specifications, to the Job Task Analyses, to the Accreditation of Training Programs - the certification of workers is the functional outcome of the Guidelines project. The worker in the home and their ability to consistently do a quality job is the target at which the preceding resources are aimed.

Like the Job Task Analyses, the development of the certification framework followed a clearly defined path as prescribed by ANSI. The International Organization for Standardization (ISO 17024: 2003) standard provides a framework for the quality and rigor of a personnel certification program. A committee of Subject Matter Experts was convened by NREL and charged with developing a certification blueprint that defines the pre-requisites and testing structure, both written and practical, that form the evaluation. The certification blueprint is the document to which all certifications would need to comply to be considered valid. The WAP decided to take this certification blueprint and put it into operation for the WAP workforce by contracting with a certifying body to develop testing and administer the certification program. A competitive solicitation was issued by NREL for a certifying body accredited, or with a pending accreditation, through the American National Standards Institute (ANSI) under the ISO 17024: 2003 standard.<sup>10</sup> The Building Performance Institute (BPI) competed for and was selected through this solicitation to deliver the four new professional certifications first to the weatherization network and then to the greater home performance marketplace. This does not mean, however, that only one certifying body that can administer these certifications. Getting the certifications into the market was an important effort for the WAP's programmatic needs, but there is no limit on other efforts to develop and administer certifications based on the NREL-developed blueprint.

The national certification program is the effort that creates the most confusion among those working in the industry. This confusion occurs because there are a number of certifications which seem similar to the Home Energy Professional certifications. Other certifications validate a worker's competence in a varied range of assessment or installation skills and knowledge. But nothing currently in the marketplace matches exactly what a WAP or home performance crew does on a daily basis. Without a clear definition of job classifications in the marketplace, it has been difficult for certification bodies to produce a product with national relevance. This has left many crews with certified workers without the specific skills needed to perform on the job. The products of the Guidelines project give definition to both the work and the workforce. From that foundation, it made sense for the WAP to produce a certification program that allowed a national industry to assess the skills of its workforce based on the SWS and JTAs produced specifically for the work being done.

The four new Home Energy Professional certifications are *job* oriented and require a fully trained or experienced professional to demonstrate the knowledge, skills, and abilities to successfully perform in a specific role. Each certification requires the worker to have completed associated pre-requisites in order to sit for the exam. These range from education and building science related course-work, to on-the-job experience. These professional certifications are

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<sup>10</sup> The International Organization for Standardization ISO 17024: 2003 standard is available at [http://www.iso.org/iso/catalogue\\_detail?csnumber=29346](http://www.iso.org/iso/catalogue_detail?csnumber=29346)

intended to build upon each other and provide a career ladder in the home energy upgrade industry. A critical component of the certification process is a test on knowledge, skills and abilities of a candidate in the field. This is reflective of an industry that requires the practical application of knowledge. Can you actually do the work that you understand in theory? The certifications are assessments that build upon the other pieces of the Guidelines effort. This alignment of the various components of the quality assurance process allows everyone working in the industry to be speaking the same language and to have a common expectation of what it means to deliver a quality product.

## **The Guidelines for Home Energy Professionals Project and Industry**

While the Guidelines for Home Energy Professionals project is still an effort in development, there are some reflections to be shared on the process to this point. The most salient outcome of this effort has been the exposure of drastically differing points of view as to what the home energy upgrade industry is and should become. There has been a lot of positive feedback for the project from those who consider themselves already a part of the “weatherization” or “home performance” industry. For these groups and individuals, many of the issues addressed under the Guidelines project have been outstanding needs for many years. The home performance industry has existed variously as an extension of government mandates, to a private market industry aimed at upper income environmentalists, to a repository for utility rate-payer dollars. Each of those constituencies brings differing priorities to the industry and often different requirements for quality and worker competence. Contractors who attempt to craft a business within this structure have often been left feeling as though it is a constantly shifting assemblage of bureaucratic hoops and competing requirements. For these individuals, the Guidelines project seems to be viewed as an opportunity to align many differing efforts into a common understanding of the work and the requirements of the workforce.

On the other side of the coin, are the organizations and individuals that understand home performance and efficiency to be an extension of existing trades. The opinion here is that this work can and should be isolated to the efforts of traditional trade contractors in their existing work. Many HVAC organizations have indicated that they feel that they have been doing efficiency work for years in their industry and that any effort to create a separate industry specific to energy efficiency risks encroaching on their traditional role. Other trade and industry organizations have indicated that they feel that existing standards and codes are sufficient to cover the work performed by any energy upgrade industry. The Guidelines project has been met with some measure of resistance by those working in traditional trade and standards development organizations and has been the subject of letters to the Secretary of the Department of Energy as well as Congress.

In light of the concerns raised, it is important to emphasize the intent of the process of developing the SWS and certifications as well as their intended use. Much effort was made during the development process to include a broad cross section of interested groups. It is certainly the case that not every concern of every special interest can be addressed to that interest’s satisfaction. However, the development process was one of open public comment and review and the resulting products are taking into account the opinions and concerns of all who chose to participate. It is also the case that none of these tools are being developed with the intention of mandating them in the broader market. These tools were developed for use by the WAP with the potential for wider adoption.

The broader concern implied in various responses to the project speaks to an existential question that must be addressed the greater home performance industry. It is the question of whether the work done by the thousands of energy upgrade contractors across the country should be defined as an industry unto itself. Is weatherization, home performance, energy upgrade, work simply a cobbling together of insulation contractors, HVAC contractors and appliance salespeople? Or is the work that we do something cohesive and valuable as would define a national industry? If this is to be an industry, and if we are to realize the opportunity of millions of under-performing homes feeding into a robust economy of workers, manufacturers and trainers, then the industry must begin to speak with a unified voice. A common understanding of the basics underpinning all industries is useful to consider. What do you produce? How do I know that you produce it well? How can I tell that someone is qualified to sell me your product? How do I work in your industry? The Standard Work Specifications, Accreditation of Training Programs and Home Energy Professional Certifications are a step towards answering these questions. They are not the final answer, they are not meant to be, but they are a good start.

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