Workforce Guidelines for Home Energy Upgrades

IREC Conference

Key Messages

1. Quality and price drive demand for a service
2. High-quality, low-cost home energy upgrades require:
    a. Industry-recognized standards
    b. Good training
    c. Strong professional certifications
3. Workforce Guidelines help with all of these

What are the Workforce Guidelines?

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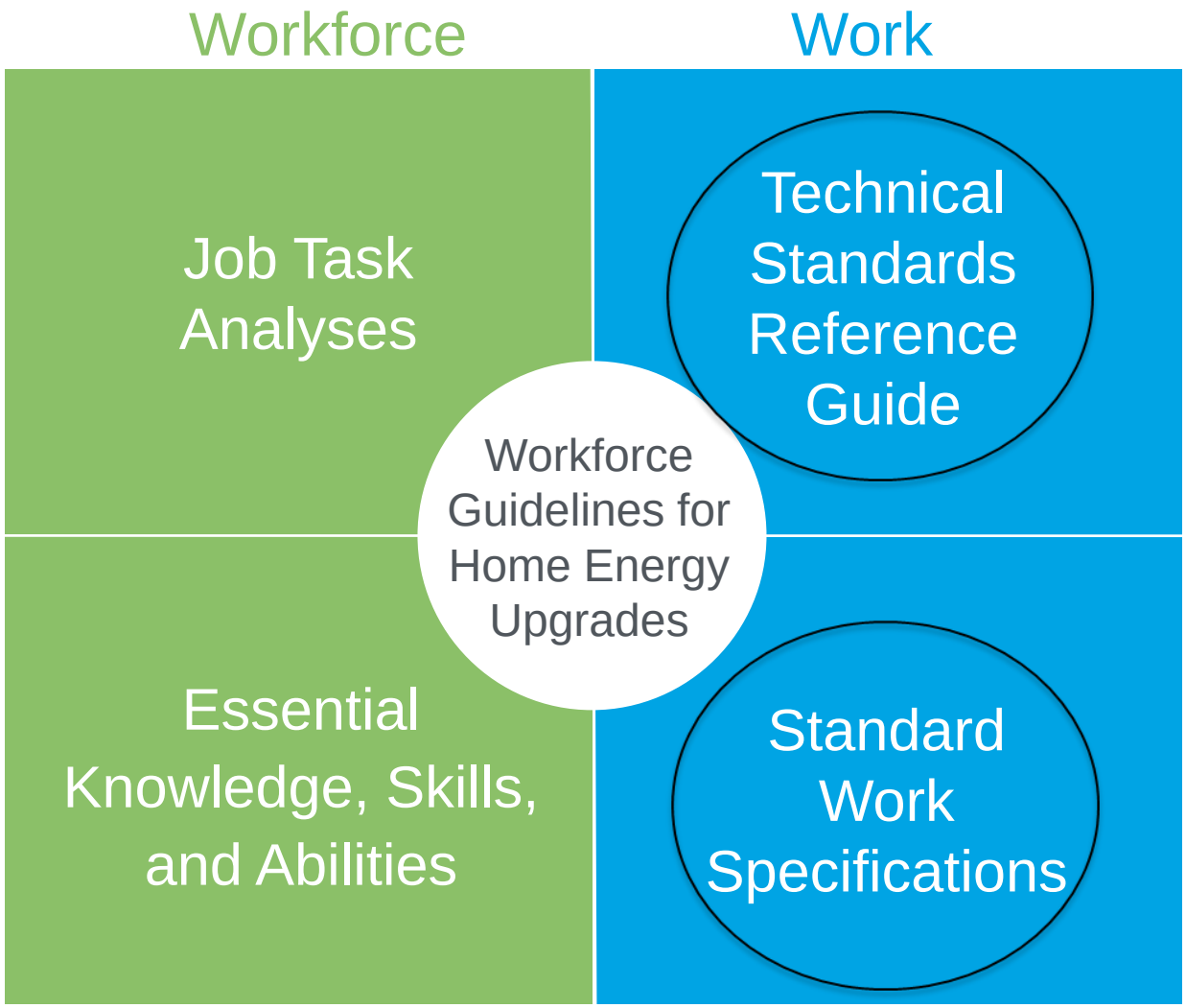
Voluntary national guidelines to support *quality work* and a *skilled workforce* in the Weatherization Assistance Program and private residential energy efficiency retrofit industry

- Developed by industry, facilitated by NREL and EERE
- Published by EERE in Spring 2011

Four Components



Retrofit Work Pyramid

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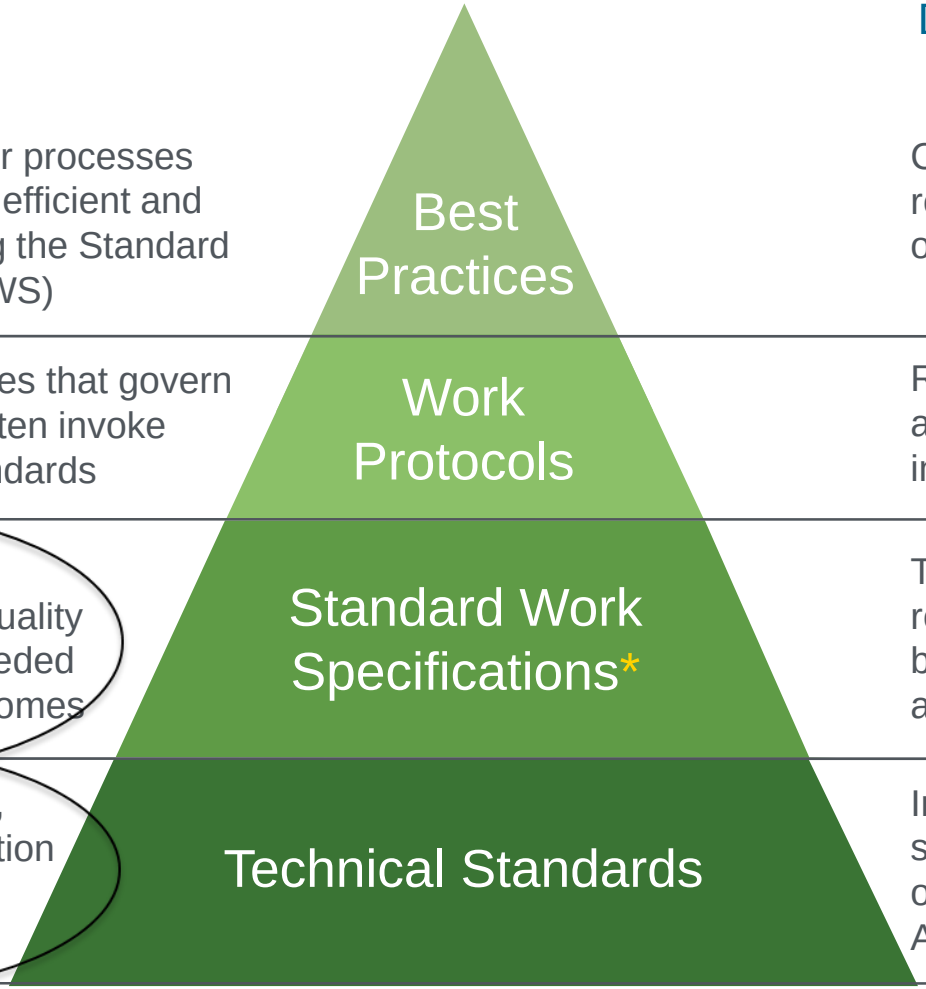
Description		Developed by
Techniques, methods, or processes believed to be the most efficient and effective way of meeting the Standard Work Specifications (SWS)	Best Practices	Companies, retrofit crews, or individuals
Sets of guidelines or rules that govern work procedures and often invoke SWS and technical standards	Work Protocols	Retrofit program administrators or individual companies
Define the minimum requirements for high-quality work and conditions needed to achieve desired outcomes	Standard Work Specifications*	Technicians and retrofit industry representatives (including building trades, manufacturers, and building scientists)
Define safety, materials, installation, and application standards relevant to residential retrofits	Technical Standards	Industry or third-party standards development organizations, such as ASHRAE, ASTM, and BPI



* Workforce Guidelines for Home Energy Retrofits

Draft SWS: Attic Insulation Prep Detail—Knee Wall

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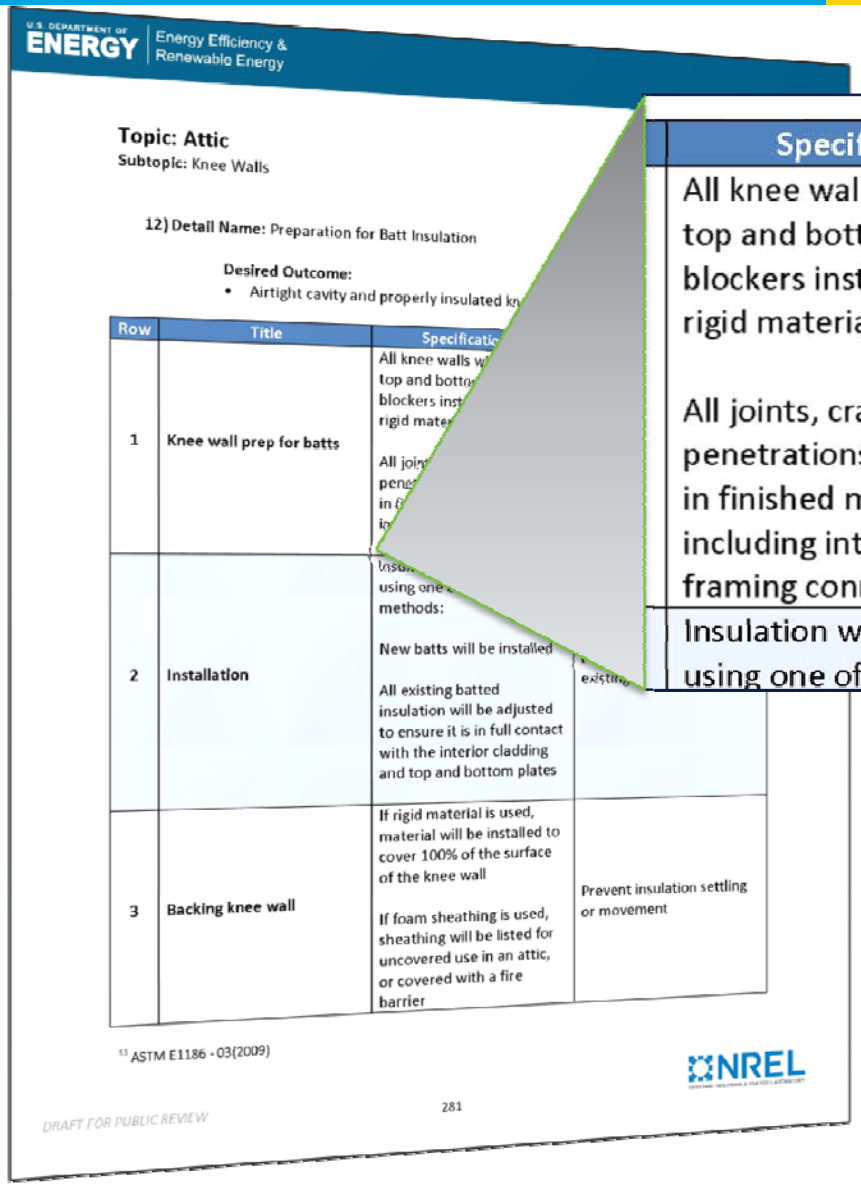

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Topic: Attic
Subtopic: Knee Walls

12) **Detail Name:** Preparation for Batt Insulation

Desired Outcome:
- Airtight cavity and properly insulated kn

Row	Title	Specification(s)	Objective(s)
1	**Knee wall prep for batts**	All knee walls w top and botto blockers inst rigid mate All join pene in t in	
2	**Installation**	Insul using one methods: New batts will be installed All existing batted insulation will be adjusted to ensure it is in full contact with the interior cladding and top and bottom plates	exist
3	**Backing knee wall**	If rigid material is used, material will be installed to cover 100% of the surface of the knee wall If foam sheathing is used, sheathing will be listed for uncovered use in an attic, or covered with a fire barrier	Prevent insulation settling or movement

[33] ASTM E1186 - 03(2009)

NREL

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Specification(s)	Objective(s)
All knee walls will have a top and bottom plate or blockers installed using a rigid material All joints, cracks and penetrations will be sealed in finished material including interior surface to framing connections	Eliminate bending, sagging or movement that may result in air leakage Prevent air leakage through the top or bottom of the knee wall [33] Create an air barrier
Insulation will be installed using one of the following	

Other industries have standards and specifications…

Examples:

- **Electronics** (Electronics Industry Alliance)

Develops standards for electronics quality & compatibility

- **Wind Power** (Int. Electrotechnical Commission – IEC)

IEC 61400-1 Wind Turbine Safety and Design

IEC 61400-23 Blade Structural Testing

IEC 61400-13 Mechanical Load Measurements

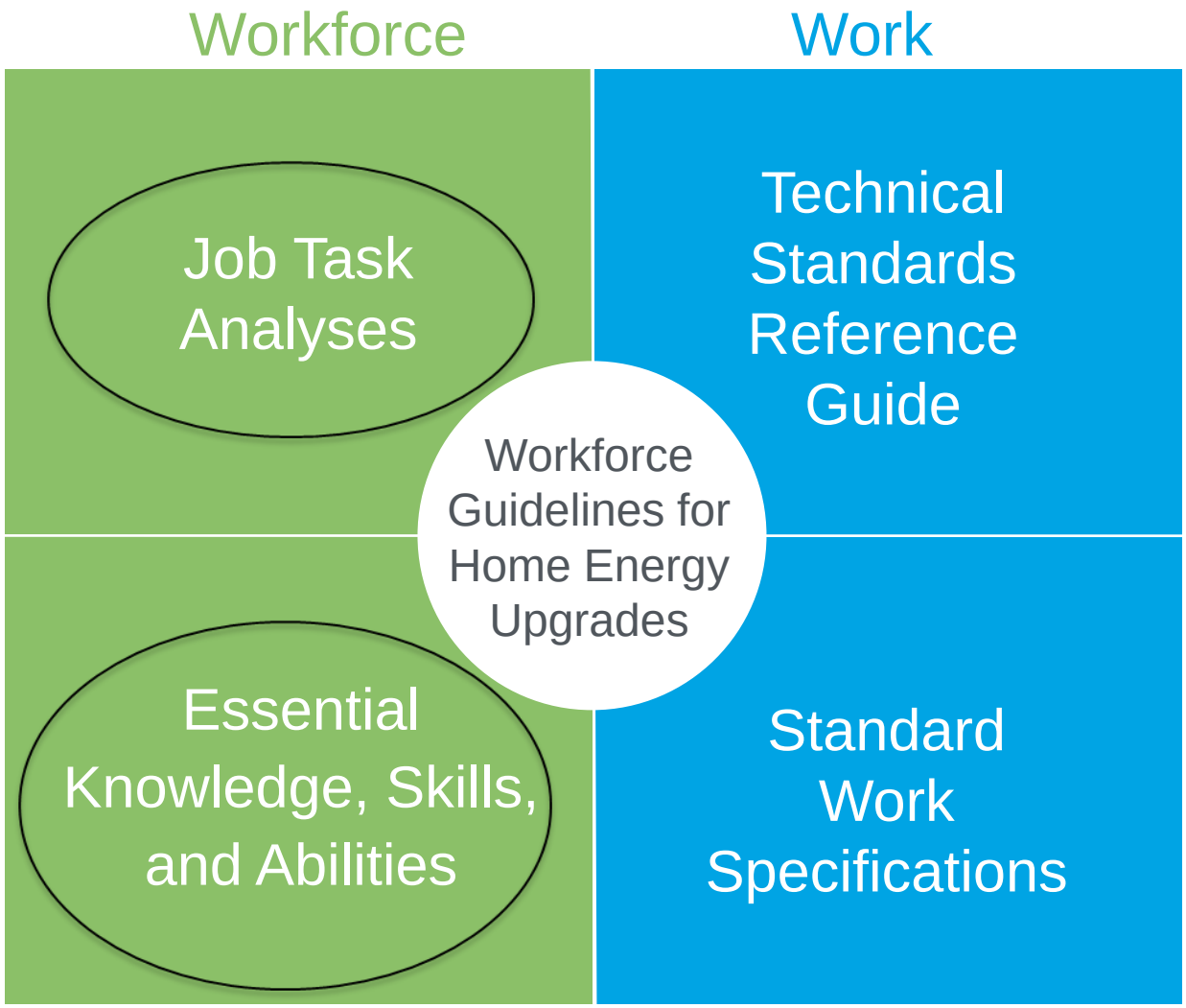
- **Golf Cars** (National Golf Car Mfr Association)

Safety and performance specs for design & performance of golf cars!

ANSI/NGCMA Z130.1 – golf cars

ANSI/NGCMA Z135.1 – personal transport vehicles

Four Components



Retrofit Workforce Pyramid

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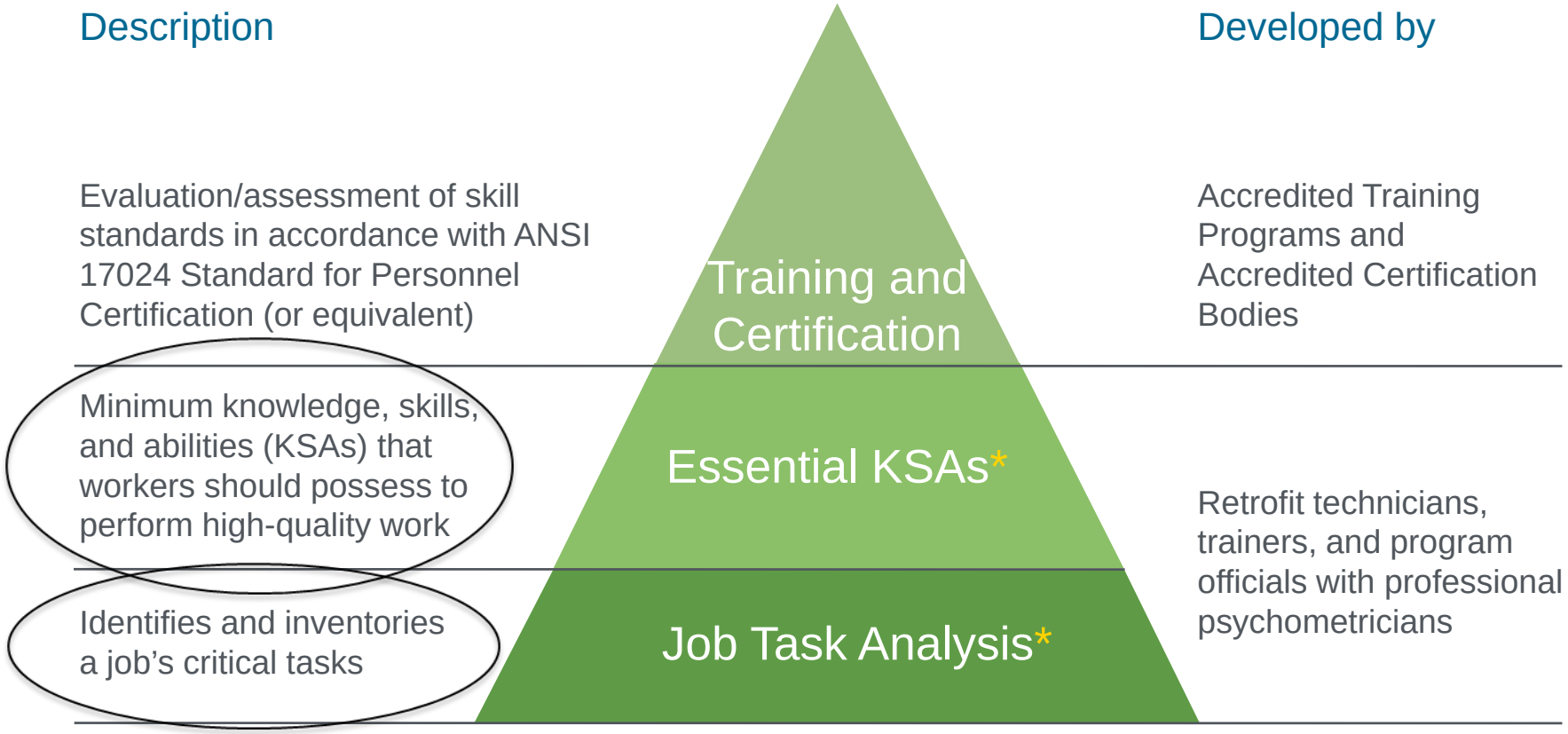

* *Workforce Guidelines for Home Energy Upgrades*

Draft deliberative, for discussion purposes only. Not for citation.

Training and Credentials – Who Needs Them?

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Requirements for some common occupations are stringent…

	Massage Therapy	Hair Styling
Required Licensure?	**YES** Required in 31 states	**YES** Required in all 50 states
Required Certification?	**Required** • Exam • 500 - 1,000 hours min. supervised classroom training • Required course content	**Required** • State licensing exam + field demonstration • HS degree • State accredited training course (9-month minimum)
Education	• Min. 500 hours • Study at accredited schools required	• 9-month course at accredited institution; On-The-Job • Continuing coursework
State Regulation	**YES** Required in 50 states, PR and VI	**YES** Required in 50 states

Training and Credentials – Who Needs Them?

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…while the requirements for other occupations are not as rigorous as you'd think…

	Tattoo Artists	Auto Mechanics
Required Licensure?	• No national or state regulation • Some Local or county licensing	None required
Required Certification?	**No** 7 States require certification through American Academy of Micropigmentation (AAM), for "permanent make-up" tattoos only.	**Voluntary only** Exam and certificate available through National Institute for Automotive Service Excellence (ASE)
Education	• None required. • Online courses, "tattoo academies," on-the-job apprenticeships (unregulated)	• None required. • Many optional programs available (mostly through manufacturers)
State Regulation	48 States require sanitation of equipment (which are two that don't?)	**No**

Training: Key Challenges

Proliferation of training and certificate programs for WAP and the Home Performance workforce

- industry, labor, government, educational institutions, NGOs

1. Major infusion of Federal and State training dollars with no standards
2. No objective measure (3rd party assessment) of training program effectiveness
3. No uniform way for workers seeking training to assess the quality of the program or provider

Solution: Training Program Accreditation

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- Voluntary, third-party assessment of training provider quality
- Interstate Renewable Energy Council (IREC)
  - Currently accredits solar training programs
- ISPQ International Standard 01022
- IREC will use the *DOE Job Task Analysis and Knowledge, Skills, and Abilities* as the foundational document for accreditation
- Available March 2011; more info shortly

Credentialing: Key Challenges

1. Lots of different credentials
   - Certifications and certificates galore
   - Credentials are not always transferable across programs and geographies (impedes mobility)
   - What's a worker or a consumer to do?
2. Competencies (Job Tasks and KSAs) upon which certifications are built are all different and in need of strengthening
3. Certification exams need to better assess field capabilities
4. Many credentials are too expensive and are not always available in all locations

Solution: Stronger, Better Certifications

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- Build a stronger, more coherent retrofit workforce certification architecture
- Certifications should be based on national, industry-recognized workforce competencies (Job Task Analyses and Knowledge, Skills, and Abilities)
- Support a life after Recovery Act for the retrofit workforce
- No new DOE certification
- More info Spring of 2011

Benefits of Workforce Guidelines

The Workforce Guidelines will benefit:

- **U.S. Workers**, by establishing a clear skill set upon which to base worker credentials and support workforce mobility up career ladders and across career lattices
- **American Homeowners**, by increasing confidence among consumers and the energy-efficiency finance community that retrofit work will produce the expected energy savings
- **State, local or Utility Retrofit Program Administrators** by providing a clear definition and baseline for quality assurance
- **Training Providers,** by assisting them in developing and upgrading course content and training curriculum, leading to better and more consistent training programs and a skilled workforce that can produce high-quality retrofit work

America Has Been Here Before…

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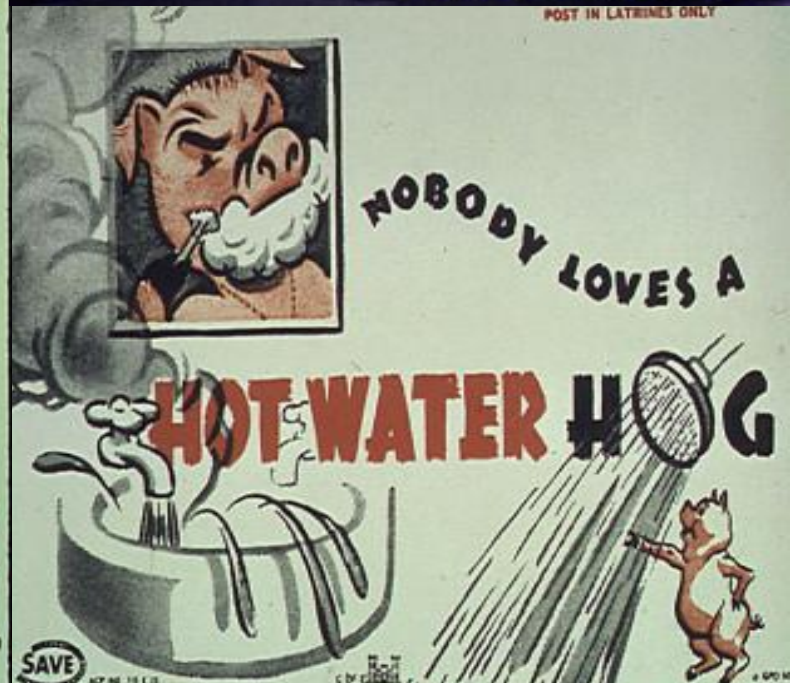

Contact Information

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Workforce Guidelines for Home Energy Upgrades

weatherization.energy.gov/retrofit_guidelines/