

# Better Buildings Workforce Guidelines

2016 Building Technologies Office Peer Review



## BETTER BUILDINGS WORKFORCE

- Home
- Framework
- Resources
- Projects
- Participate



Interested in aligning your program with Better Buildings Workforce Guidelines: [Download Job Task Analyses and Certification Schemes at the NIBS resources site](#)

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The Better Buildings Initiative is a broad, multi-strategy initiative to make commercial and industrial buildings 20% more energy efficient over the next 10 years. DOE is currently pursuing strategies across five pillars to catalyze change and accelerate private sector investment in energy efficiency.

The pillars are:

- Developing Innovative, Replicable Solutions with Market Leaders
- Making Energy Efficiency Investment Easier
- Improving Effectiveness of Federal Incentives
- Federal Government Leading by Example
- Developing a Skilled Clean Energy Workforce

# Project Summary

## Timeline:

Start date: 2013-08-02

Planned end date: 2016-10-18

## Key Milestones

1. Milestone 1; JTA and Scheme release 2015-02
2. Milestone 2; 1<sup>st</sup> BBWG certification recognized, 2015-08
3. Milestone 3; 1<sup>st</sup> BBWG certificate developed, 2016-07

## Budget:

### **Total Project \$ to Date:**

- DOE: \$1,095,000
- Cost Share: thousands of volunteer subject matter expert hours

### **Total Project \$:**

- DOE: \$1,215,000
- Cost Share: thousands of volunteer subject matter expert hours

## Key Partners:

National Institute of Building Sciences
National Renewable Energy Laboratory
Professional Testing, Inc.
American National Standards Institute
American Association of Community Colleges

## Project Outcome:

The Better Buildings Workforce Guidelines address commercial building workforce training and certification programs aimed at increasing the overall level of competency for four key energy-related jobs: building energy auditor, building commissioning professional, energy manager and building operations professional. The BBWG Program is the component of the Better Buildings Initiative – a broad, multi-strategy initiative to make commercial and industrial buildings 20% more energy efficient over the next 10 years – aimed at raising the bar for the workforce needed to operate high performance buildings that can deliver the targeted energy savings.

# Purpose and Objectives

**Problem Statement:** Improving the operational performance of commercial buildings requires highly skilled and qualified professionals, particularly as building technologies become more advanced. Yet the lack of national guidelines for energy-related professional credentials represents a major barrier to the quality, consistency and scalability of this workforce.

**Target Market and Audience:** The BBWG are intended to benefit training and certification programs; employers and building owners/managers; governments and utility programs; and professionals.

Buildings are one of the heaviest consumers of natural resources and account for a significant portion of the greenhouse gas emissions that affect climate change.

- Energy efficiency improvements with very favorable payback periods often *do not get implemented* due to other operational priorities
- Energy efficiency projects that are implemented may *not be sustained* due to lack of supportive operational and maintenance practices
- Commissioning or re-commissioning new equipment or systems only addresses a *point in time*

# Purpose and Objectives

Who are the skilled and qualified workers in advanced energy occupations?

## Define Skills

Voluntary **Better Buildings Workforce Guidelines**, defined by industry and government

## Verify

Third-party accreditation of certification or training programs

## Recognize

DOE recognition of accredited programs = consumer trust in program quality and workforce performance

CONFUSION .....► CONFIDENCE

# Purpose and Objectives

## A Government and Industry Partnership to Advance Commercial Workforce Quality



\*National Institute of Building Sciences

\*\*Commercial Workforce Credentialing Council

\*\*\* Building Energy Auditor; Building Commissioning Professional; Energy Manager; Building Operations Professional; Facility Manager (Government and FBPTA focus)

# Purpose and Objectives

## Impact of Project:

- For certification programs—Recognized by DOE as accredited programs that meet high-quality industry guidelines
- For employers and building owners/managers—Objective way to identify high-quality certification programs that train skilled and qualified workers
- For governments and utility programs—Objective criteria for specifying workforce certification requirements for contracts on government buildings or for contractors participating in incentive or ratepayer-funded programs.
- For workers—Transparency in the training and certification market; clearer professional development pathways; increased skills and greater mobility.

# Purpose and Objectives

## Impact of Project:

### Near-term outcomes

1. BBWG JTA and schemes available for certification bodies
2. BBWG materials approved by ANSI available to credentialing bodies
3. First DOE recognized certifications in market
4. Training materials available for educational organizations

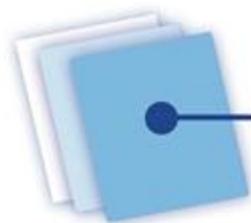
### Intermediate outcomes

1. Multiple DOE recognized certifications available
2. Requirements for BBWG jobs in regulations and procurement language
3. Government and private sector aligning around BBWG requirements
4. Community colleges and professional societies offering BBWG aligned training and certificates

### Long-term outcomes(3yr.+ after project)

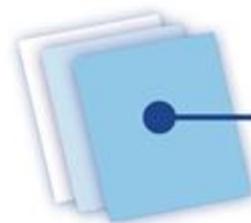
1. Multiple DOE recognized certifications and certificates available
2. Government and private sector worker transportability
3. Multiple educational offerings available
4. Market moved from confusion to confidence following Energy Star model
5. Demonstrated reductions in commercial building energy use identified

# Approach



Professional certification schemes

AND



Certificate program requirements

# Approach

## Key Issues:

1. Obtaining ANSI review and pre-approval to encourage certification bodies to seek accreditation
2. Time requirements for accreditation
3. Changing regulations and procurement practices to build demand
4. Supporting capstone level certifications with corresponding education and certificate offerings

## Distinctive Characteristics:

1. Collaborative development of Job Task Analysis and Schemes by public – private partnership through NIBS CWCC
2. DOE Recognition for qualified energy efficiency workers
3. Focus on whole workforce development environment – characteristics, qualifications, education, demand development



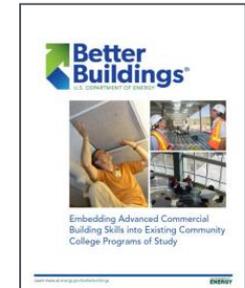
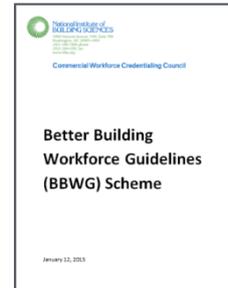
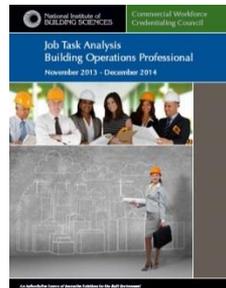
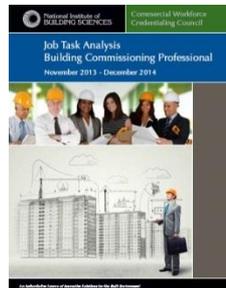
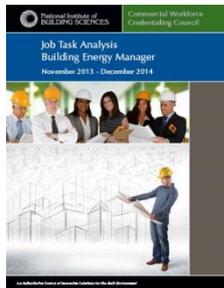
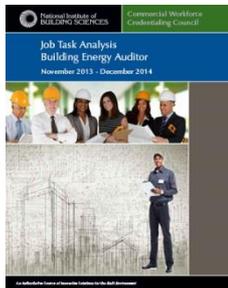
**RECOGNIZED PROGRAM**

MEETS U.S. DEPARTMENT  
OF ENERGY GUIDELINES

# Progress and Accomplishments

## Accomplishments:

- BBWG materials completed and available on NIBS website for download and use, linked from DOE site
- Crosswalks of existing ANSI approved credentials – AEE CEM and ASHRAE Cx
- First DOE Recognition awarded to AEE CEM
- Supporting materials for community colleges available and program underway to support implementation
- ANSI pre-approval received



## Market Impact:

1. NIBS Commercial Workforce Credentialing Council Board Advisors and Direction continues to see active participation from members

# Progress and Accomplishments

## Market Impact (contd.):

2. Multiple credentialing bodies are seeking ANSI accreditation
3. Federal agencies (GSA/DoD/OPM/CEQ and others) are working with BBWG on workforce development and procurement implementation – GSA FBPTA and DOE Energy Manager
4. Certificate program development initiated to broaden reach to market and support education

## Awards/Recognition:

- ANSI pre-approval under ISO 17024 part 8 received

## Lessons Learned:

1. Requires a holistic approach to supply and demand development to ensure success
2. Building demand takes time and requires broad reach
3. Integrating into federal worker job requirements and development
4. Educational institutions need assistance to integrate BBWG course outlines and learning objectives into curriculum

# Project Integration and Collaboration

## Project Integration:

1. Ongoing operation of NIBS CWCC BOD and BOA provides connection to credentialing bodies and commercial/government employers
2. Working with GSA and DoD to support job requirements
3. Working with American Association of Community Colleges to support education program development

## Partners, Subcontractors, and Collaborators:

- National Institute of Building Sciences
- National Renewable Energy Laboratory
- Professional Testing, Inc.
- American National Standards Institute
- American Association of Community Colleges
- CWCC members (see next slide)
- Energy Efficiency SMEs

# Project Integration and Collaboration

## Partners, Subcontractors, and Collaborators:

<b>Commercial Workforce Credentialing Council</b>	
<b>Board of Direction</b>	<b>Board of Advisors</b>
US Department of Defense	Building Services 32BJ Training Fund
Tishman Speyer	AABC Commissioning Group (ACG)
US General Services Administration	CUNY
National Association of Energy Service Companies (NAESCO)	NSF BEST Center/Laney College
Department of Energy	PECI, Technical Program Manager
NRDC	IUOE Stationary Engineer Training Department
Facility Performance Associates	Lane Community College - Energy Management Program
NYC Mayor's Office	New Jersey Institute of Technology (NJIT) Center for Building Knowledge - Energy Commissioning Agents/Auditors (ECAA)
NYSERDA	Building Commissioning Association
The South-central Partnership for Energy Efficiency as a Resource	NEEC - Northwest Energy Efficiency Council
Vornado Realty Trust	BOMI
Director of the Bureau of Construction Code, State of Michigan	Southface
EEB Hub	National Insulation Association
SVP of Engineering, Related Companies	IFMA
NEEP	Association of Energy Engineers
	National Environmental Balancing Bureau
	ASHRAE / Eco Commissions
	NEMI / TABB
	ASTM International
	ICC
	American Institute of Architects

# Project Integration and Collaboration

## Communications:

- NIBS Building Innovations Conference – January 2015
- ASHRAE/AHR Expo – January 2015
- AACC WDI – January 2015
- ANSI WorkCred – April 2015
- Better Buildings Conference 2015
- Energy Exchange - August 2015
- NIBS Journal – August 2015
- Greenbuild – October 2015
- NIBS Building Innovations Conference – January 2015
- AACC WDI – January 2016
- ANSI Webinar – February 2016

# Next Steps and Future Plans

## Next Steps and Future Plans:

- Support programs applying for accreditation
- Develop Certificate recognition program for Building Operations Professional and another BBWG job
- Continue to work with GSA/DOD/OPM/CEQ on common energy efficiency job requirements in federal agencies
- Continued engagement with GSA and other federal agencies to include preferential language in contracts
- Ongoing engagement with cities on energy efficiency legislation
- Ongoing support and outreach activities including operation of CWCC

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# REFERENCE SLIDES

# Project Budget

**Project Budget:** Project initiated 2013-07, 7 contract mods through completion 2015-12. New contract initiated 2016-02 for FY2016.

**Variations:** Less travel funds required than anticipated used to offset additional time/tasks through extension to 2015-12.

**Cost to Date:** Portion of prior funding expended in Q1FY15, new FY16 funding started in February.

**Additional Funding:** Significant amounts of volunteer time were involved in the creation of the JTA and schemes and the guidance and oversight of the program by the Boards.

## Budget History

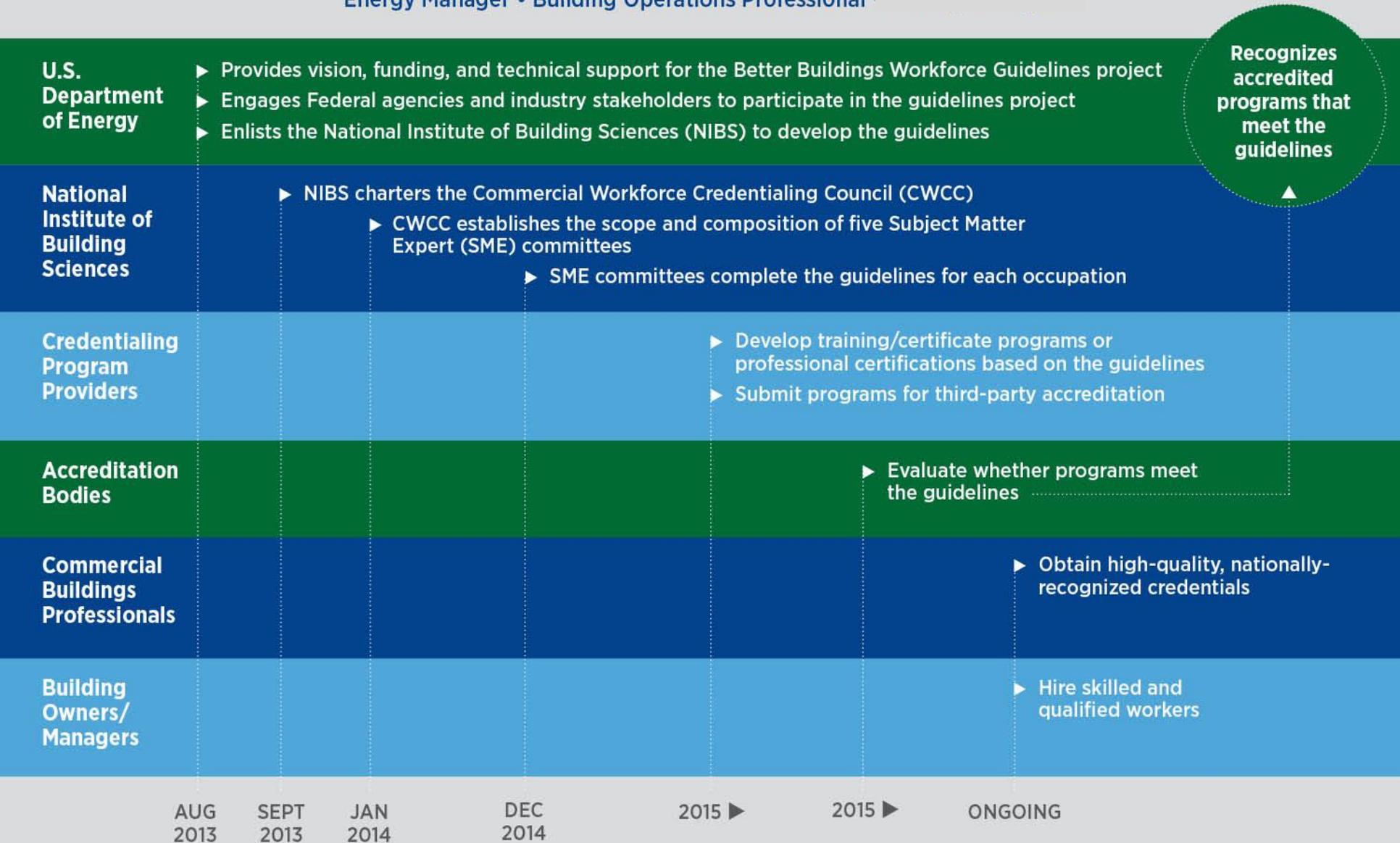
FY2013 – FY 2015 (past)		FY 2016 (current)		FY 2017 – FY2018 (planned)	
DOE	Cost-share	DOE	Cost-share	DOE	Cost-share
\$1,095,000	+/- \$1.5M	\$125,000	+/- \$48K	\$125,000	+/- \$48K

# Project Plan and Schedule

## Path to Better Buildings Workforce Guidelines

### INITIAL JOB TITLES

Building Energy Auditor • Building Commissioning Professional  
Energy Manager • Building Operations Professional



# Project Schedule

