DOE/NIBS
BETTER BUILDINGS WORKFORCE GUIDELINES

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- Deke Smith, Program Director, Commercial Workforce Credentialing Council, National Institute of Building Sciences

Webinar: November 7th, 2013
Webinar Outline

1) Better Buildings Workforce Guidelines Project Summary
2) Introduction to DOE Better Buildings Workforce Framework
3) Better Buildings Workforce Guidelines Background and Context
4) Project Overview
5) Project Approach and Timeline
6) NIBS Commercial Workforce Credentialing Council
7) Questions
Better Buildings Workforce Guidelines

WHAT:

- DOE and NIBS are engaging industry stakeholders to develop voluntary national guidelines for commercial building workforce training and certification programs.
- Focus on five key energy-related jobs: Building Energy Auditor, Building Commissioning Professional, Building Operations Professional, Energy Manager, and Facilities Manager (focus on Government Facilities and FBPTA).
- Guidelines can be used by existing training and certification organizations to upgrade or modify their existing program offerings or to develop new program offerings.
- Neither DOE or NIBS are developing new training or certification programs through this project—we are engaging industry to develop the guidelines that private market providers will use as the benchmark for quality.

WHY:

- Improve quality and reduce confusion and uncertainty in commercial workforce credentialing programs.
- Accelerate energy savings, carbon reductions, and clean energy job creation.
WHO WILL BENEFIT:

- **Employers, building owners, governments, programs**—Objective, consistent way to identify skilled and qualified workers
- **Workers**—Increased skills, greater mobility and clearer professional development pathways
- **Training and certification programs**—Recognized by DOE and GSA for accredited programs meeting industry guidelines for high quality

HOW:

- **Collaborative approach** taps strengths of industry and government.
  - **Industry**: Technical expertise (industry SMEs); project management (NIBS)
  - **DOE**: Project coordination; seed funding; national scope
Framework for a Better Buildings Workforce

<table>
<thead>
<tr>
<th>Technical Standards</th>
<th>Skills Standards</th>
<th>Curricula &amp; Training</th>
<th>Industry-Recognized Certifications</th>
<th>Third-Party Accreditation</th>
<th>Driving Market Demand</th>
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<tbody>
<tr>
<td>Standards, codes, and specifications defining safe, durable, high-quality work</td>
<td>Define the job tasks and the knowledge, skills and abilities workers need to perform them well</td>
<td>Built on clear learning objectives and aligned with technical and skills standards</td>
<td>National, industry &amp; government recognized certifications built on common blueprints when appropriate</td>
<td>Evaluation of program quality and alignment with industry-recognized content</td>
<td>Policy mechanisms and recognition of accredited workforce credentialing programs</td>
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Six Barriers

- **Patchwork of Technical Standards, Codes and Work Specifications**
  - Not incorporated into workforce programs

- **Lack of National Skill Standards for Emerging Energy-Related Jobs**
  - Need comprehensive Job Analyses based on clear technical standards

- **Nonaligned Training Content, Platforms, Programs**
  - Training not always based on a Job Analysis; not up to date with technology and best practices
  - Availability, cost, and quality are also concerns

- **No Infrastructure to Support National Credentials**
  - “Diaspora” of certificate and certification programs (some overlapping or duplicative)

- **Minimal Uptake of Accreditation Standards for Training and Certification Programs**
  - Lack of demand because value proposition is not compelling

- **Lack of Recognition of Quality Workforce Credentials**
  - Employers and policymakers have a difficult time identifying quality workers
Benefits of a Skilled and Qualified Workforce

Higher-quality work!

- Worker skills current with technology
- Improved building performance
- Decreased building maintenance costs
- Greater energy savings
- Increased customer and occupant satisfaction
- Greater demand for qualified workers
- Positive feedback loop
Skills and Credentials = National Priority

Council on Jobs and Competitiveness Recommendations

• Ensure that training for students and workers meets the skills in demand by the labor market
• Launch private-sector led skills initiatives

Skills for America’s Future (Aspen Institute)

• Partnerships between community colleges and businesses to improve the skills, industry-recognized credentials, and employment outcomes of American workers and students

Blueprint for America Built to Last (and 2012 SOTU)

• Train and place two million Americans in good jobs through partnerships between businesses and community colleges that give workers the skills employers need
• Create good clean energy jobs in the United States
US EE & RE Firms: Mismatch of skills of available workers, exacerbated by retirements

President’s Jobs Council: “Lack of alignment between what employers need and what skills are taught and delivered is becoming a critical problem for business and the nation.” [2011 Year End Report, p. 13]

U.S. higher education system shifting to more career-technical education

Energy-related job categories particularly lacking skilled workers
DOE Role in EE Workforce Development

**DOE**
- Technical Expertise
- FEMP
- EE Programs

**DOL**
- Apprenticeship
- WIA

**GSA**
- FBPTA

**ED**
- Perkins
- Career Clusters
Everyone is asking…

Which are the “good” or “right” energy-related credentials?

No objective criteria to help answer this question

Answers depend on who you ask…
Need a Way to Help the Market Identify High Quality Training and Certification Programs
Which products demonstrate the top energy performance?

Define Performance
Voluntary ENERGY STAR performance specifications, developed with market input

Verify
Products tested by accredited third-party laboratory and reviewed by certification body

Recognize
ENERGY STAR= products benefit from consumer trust in energy performance

CONFUSION  CONFIDENCE
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
Recognizing High Quality Products and Services

This approach has worked across the Federal government for products and various “challenges”
## Five Better Buildings Workforce Job Titles

### Project Scope

<table>
<thead>
<tr>
<th>Job Titles</th>
<th>Draft Job Descriptions (will be further revised)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building Energy Auditor</strong></td>
<td>Assesses building systems and site conditions; analyzes and evaluates equipment and energy usage; and recommends strategies to optimize building resource utilization.</td>
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<tr>
<td><strong>Building Commissioning Professional</strong></td>
<td>Leads, plans, coordinates and manages a commissioning team to implement commissioning processes in new and existing buildings.</td>
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<tr>
<td><strong>Energy Manager</strong></td>
<td>Manages energy consumption in buildings or across facilities; performs continuous site evaluations and analyses; identifies opportunities to increase building efficiency, promote renewable resources, reduce costs and increase building or facility performance.</td>
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<tr>
<td><strong>Building Operations Professional</strong></td>
<td>Manages the maintenance and operation of building systems and installed equipment, and performs general building maintenance to optimize performance, maintain the building's operability and ensure the comfort and safety of building occupants.</td>
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<tr>
<td><strong>Facility Manager (Government and FBPTA focus)</strong></td>
<td>A federal, state, or local government official who manages, monitors and coordinates facility operations and supervises and communicates with staff to ensure efficient, sustainable operations and the satisfaction of the facility occupants.</td>
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Path to Better Buildings Workforce Guidelines

National Institute of Building Sciences

Serves as secretariat, convener, and facilitator under DOE contract

Commercial Workforce Credentialing Council (CWCC)

Nominates SMEs and makes recommendations to Board of Direction

Board of Advisors → Board of Direction

Subject Matter Expert (SME) Committees
Revise and validate job task analyses; develop certification schemes and certificate program requirements

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

OUTCOMES
Voluntary guidelines for industry-delivered Better Buildings Workforce credentials

Professional certification schemes AND Certificate program requirements

New NIBS Council comprised of public- and private-sector stakeholders
Establishes CWCC policies and procedures; decides committee compositions; builds support for guidelines
# Certifications vs. Certificates

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<th>Certification</th>
<th>Certificate</th>
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<td>Results from an assessment process</td>
<td>Results from a training / educational process</td>
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<tr>
<td>Indicates mastery/competency</td>
<td>Indicates completion of a course(s)</td>
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<td>Standards set through a defensible, formal process</td>
<td>Course content set a variety of ways</td>
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<td>Typically requires some amount of professional experience</td>
<td>For both newcomers and experienced professionals</td>
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<td>Awarded by a third-party, standard-setting organization</td>
<td>Awarded by training and educational programs or institutions</td>
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<td>Has on-going requirements to maintain</td>
<td>Is the end result</td>
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*Source: U.S. Office of Personnel Management  August 13, 2008 Memo*
A Government and Industry Partnership to Advance Commercial Workforce Quality

**NIBS**∗ CWCC∗∗ develops Better Buildings Workforce Guidelines

- **Industry Technical Standards**
- **Job task analyses**∗∗
- **Guidelines for certification programs** (common certification schemes)
- **Guidelines for certificate programs** (content outlines and learning objectives)

Which are implemented by:

- **Industry certification bodies**
- **Certificate program providers**

Which seek accreditation under appropriate standard:

- **ISO/IEC 17024**
- **IREC 14732 and/or others TBD**

Department of Energy recognizes accredited programs meeting voluntary Better Buildings Workforce Guidelines

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*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)
Examples of Accreditation Requirements

- Requirements for Written Policies and Procedures
- Requirements for Staff/Personnel
- Requirements for Financial Viability
- Requirements for Certificate Program Application
- Requirements for Management Systems
- Facilities
- Job Task Analysis Basis for Curriculum or Syllabus
- Written Examinations
- Non-Written Assessments (Oral, Performance)
- Evaluation of Program Effectiveness

Administration/Management

Content
# Path to Better Buildings Workforce Guidelines

**INITIAL JOB TITLES**
- Building Energy Auditor
- Building Commissioning Professional
- Energy Manager
- Building Operations Professional
- Facility Manager

## U.S. Department of Energy
- Provides vision, funding, and technical support for the Better Buildings Workforce Guidelines project
- Engages Federal agencies and industry stakeholders to participate in the guidelines project
- Enlists the National Institute of Building Sciences (NIBS) to develop the guidelines

## National Institute of Building Sciences
- NIBS charters the Commercial Workforce Credentialing Council (CWCC)
- CWCC establishes the scope and composition of five Subject Matter Expert (SME) committees
- SME committees complete the guidelines for each occupation

## Credentialing Program Providers
- Develop training/certificate programs or professional certifications based on the guidelines
- Submit programs for third-party accreditation

## Accreditation Bodies
- Evaluate whether programs meet the guidelines

## Commercial Buildings Professionals
- Obtain high-quality, nationally-recognized credentials

## Building Owners/Managers
- Hire skilled and qualified workers

<table>
<thead>
<tr>
<th>U.S. Department of Energy</th>
<th>National Institute of Building Sciences</th>
<th>Credentialing Program Providers</th>
<th>Accreditation Bodies</th>
<th>Commercial Buildings Professionals</th>
<th>Building Owners/Managers</th>
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<td>AUG 2013</td>
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Recognizes accredited programs that meet the guidelines.
General Project Timeline

2013

• July/August—Stakeholder outreach
• September—Project announcement and launch
• October/November—NIBS Commercial Workforce Council meetings
• Mid-November—Subject Matter Expert Nominations

2014

• January/February/March—NREL conducts JTA committee meetings
• June—NREL completes JTA revision and validation
• July—NIBS convenes SMEs to develop certification schemes and certificate program requirements based on NREL JTAs
• December—Final draft of Better Buildings Workforce Guidelines available to certification bodies and certificate programs

2015 – 2016

• Accreditation
• Implementation and deployment
Council Overview

Deke Smith
Program Director
Institute Councils & Committees

- Advanced Materials Council
- Building Enclosure Council - National
- Building Enclosure Technology & Environment Council
- Building Seismic Safety Council
- buildingSMART alliance™
- Commercial Workforce Credentialing Council
- Consultative Council
- Coordinating Council
- Council on Finance, Insurance and Real Estate
- Facility Maintenance & Operations Committee
- High Performance Building Council
- Multihazard Mitigation Council
- National Council of Governments on Building Codes and Standards
- National Mechanical Insulation Committee
- Sustainable Buildings Industry Council
Council - CWCC – Organizational Relationships

**Industry Advocacy & Outreach**
- Consultative Council
- Council on Finance, Insurance and Real Estate (CFIRE)
- National Council of Governments on Building Codes and Standards (NCGBCS)

**Facility Performance & Sustainability**
- Building Enclosure Technology and Environment Council (BETEC)
- High Performance Building Council (HPBC)
- National Mechanical Insulation Committee
- Commercial Workforce Credentialing Council

**Security & Disaster Preparedness**
- Building Seismic Safety Council (BSSC)
- Multihazard Mitigation Council (MMC)
- Multihazard Risk Assessment/HAZUS

**Information Resources & Technology**
- Whole Building Design Guide
- National Clearinghouse for Educational Facilities
- National CAD Standard National BIM Standard-U.S.
- buildingSMART alliance
Path to Better Buildings Workforce Guidelines

- National Institute of Building Sciences
  - Serves as secretariat, convener, and facilitator under DOE contract

- Commercial Workforce Credentialing Council (CWCC)
  - Nominates SMEs and makes recommendations to Board of Direction
  - Board of Advisors
  - Board of Direction
  - New NIBS Council comprised of public- and private-sector stakeholders
  - Establishes CWCC policies and procedures; decides committee compositions; builds support for guidelines

- Subject Matter Expert (SME) Committees
  - Revise and validate job task analyses; develop certification schemes and certificate program requirements

- Energy Auditor
- Commissioning Professional
- Building/Stationary Engineer
- Energy Manager
- Facility Manager (FBPTA)

OUTCOMES

Voluntary guidelines for industry-delivered Better Buildings Workforce credentials

- Professional certification schemes
- Certificate program requirements
Board of Direction

- Frank DiGiovanni - U.S. Department of Defense
- Jonathan Flaherty - Tishman Speyer
- Brian Gilligan - U.S. General Services Administration
- Don Gilligan - National Association of Energy Service Companies (NAESCO)
- Benjamin Goldstein – U.S. Department of Energy
- Laurie Kerr - Natural Resources Defense Council
- Jerry Kettler - Facility Performance Associates
- John Lee - New York City Mayors Office
- Kim Lenihan - New York State Energy Research and Development Authority
- Doug Lewin - The South-Central Partnership for Energy Efficiency as a Resource
- Sukanya Paciorek - Vornado Realty Trust
- Irvin Poke - Bureau of Construction Codes, State of Michigan
- David Riley - Energy Efficient Buildings Hub
- Paul Rode - Related Companies
- Carolyn Sarno - Northeast Energy Efficiency Partnerships
Board of Advisors

• AABC Commissioning Group (ACG) - Ray Bert
• American Institute of Architects - Drake Wauters
• ASHRAE - Matt Nelson
• Association of Energy Engineers - Bill Kent
• ASTM - Christopher Surak
• BOMI International - Jeff Horn
• Building Commissioning Association - Liz Fischer
• Building Services 32BJ Training Fund - James Barry
• City University of New York - Michael Bobker
• International Code Council – Dave Walls
• International Facility Management Association - Tony Keane
• International Union of Operating Engineers - Russel Duke
• Lane Community College - Roger Ebbage
• Laney College - Peter Crabtree
• National Energy Management Institute / Testing, Adjusting and Balancing Bureau - Jim Page
• National Environmental Balancing Bureau - Tom Meyer
• National Insulation Association - Michele Jones
• New Jersey Institute of Technology - Center for Building Knowledge - Energy Commissioning Agents/Auditors - Deane Evans
• Northwest Energy Efficiency Council - Olga Gazman
• PECI - Eliot Crowe
• Southface – Brandon Jones
Charter – Initially Approved of by NIBS BOD

- Article I  – Establishment
- Article II  – Membership
- Article III  – Conduct Of Council Business
- Article IV  – Board Of Direction
- Article V  – Officers
- Article VI  – Nominations Committee
- Article VII  – Board Of Advisors
- Article VIII  – Council Committees
- Article IX  – Scheme Committees
- Article X  – Financial Affairs
- Article XI  – Antitrust Compliance
- Article XII  – Staff And Technical Consultants
- Article XIII  – Amendments
Invitation to Join the CWCC

- The National Institute of Building Sciences invites industry stakeholders, including building owners, industry trade associations, credentialing bodies, energy efficiency advocates, utility program administrators, labor unions, the real estate community and state, local and federal officials, to join the CWCC.

- If you're already a member of the Institute, you may join the CWCC by emailing us at nibs@nibs.org with "Join CWCC" in the subject line.

- Non-members may join the Institute and the Council using the discount code "CWCCJ13" for a free one-year membership. Sign up now to become a CWCC member. Go to www.nibs.org
QUESTIONS?

Contact Information

- Benjamin Goldstein: bbworkforce@ee.doe.gov
- buildings.energy.gov/workforce
- Deke Smith: dsmith@nibs.org  (202) 289-7800
- http://www.nibs.org/cwcc