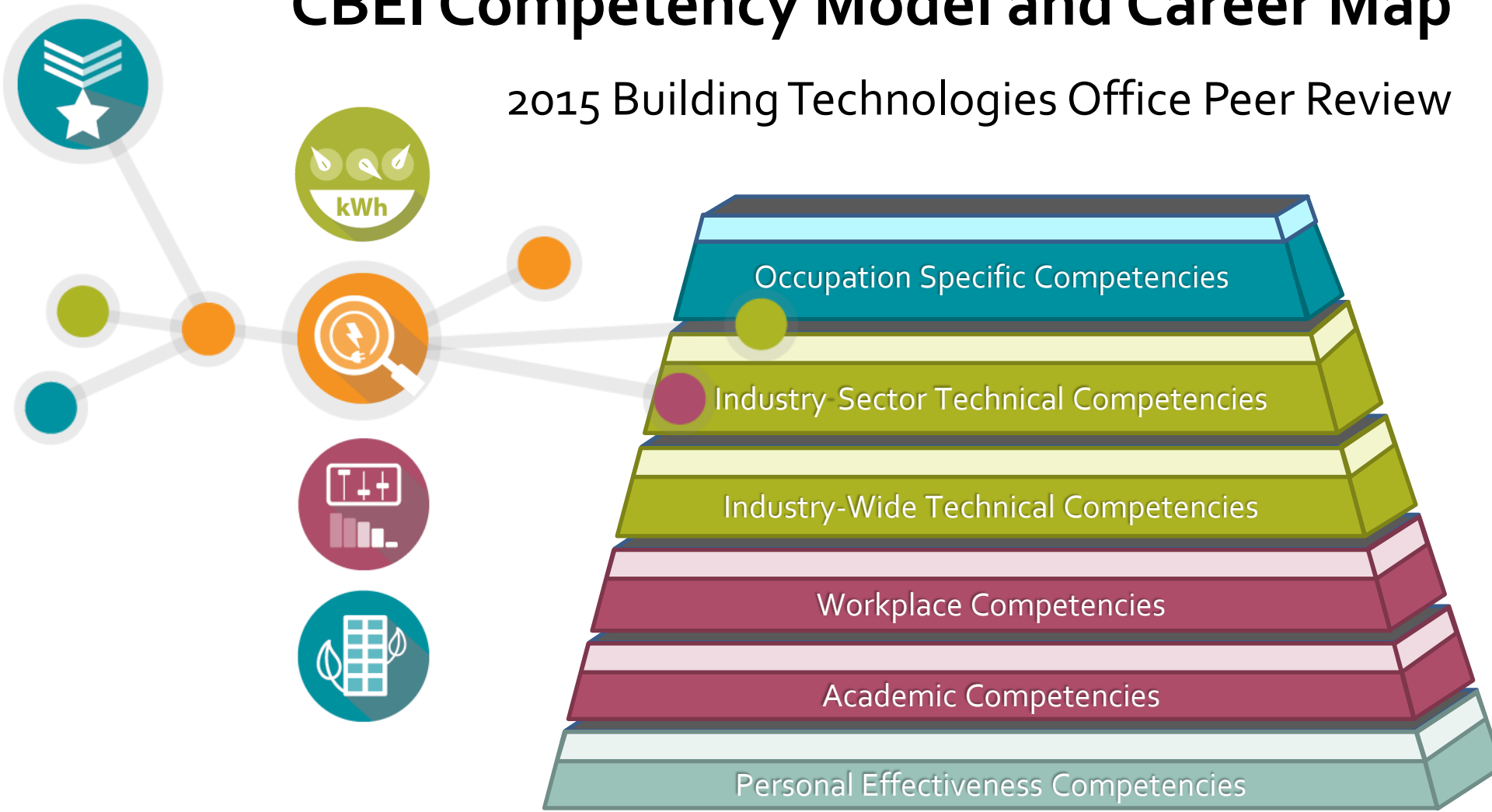


CBEI Competency Model and Career Map

2015 Building Technologies Office Peer Review



Project Summary

Timeline:

Start date: 2.01.2013

Planned end date: 4.30.2016

Key Milestones:

1. Complete competency model: 9.30.14
2. Publish competency model: 4.10.15
3. Complete beta career map web tool: 4.30.15

Budget:

Total DOE \$ to date: \$870,000

Total future DOE \$: \$175,000

Target Market/Audience:

Policymakers seeking to link program funding with recognized credentials, **professional associations** and other organizations involved in workforce development, **employers** seeking guidance on talent recruitment and cultivation, **job-seekers** seeking guidance on entry points and career advancement

Key Partners:

Consortium for Building Energy Innovation (CBEI)	National Institute of Building Sciences
Pennsylvania State University	Center on Wisconsin Strategy (COWS) at University of Wisconsin-Madison
Facility Engineering Associates	

Project Goal:

Development and translation of clear competencies, workforce development and career pathways aligned with new national building energy efficiency workforce guidelines for four of the advanced energy job titles: Energy Manager; Building Operations Professional; Energy Auditor; Commissioning Professional

Vision:

By 2030, deep energy retrofits that reduce energy use by 50% in existing SMSCB, which are less than 250,000 sq ft

Mission:

Develop, demonstrate and deploy technology systems and market pathways that permit early progress (20-30% energy use reductions) in Small and Medium Sized Commercial Buildings



Our Goals:

- Enable deep energy retrofits in small to medium sized commercial buildings
- Demonstrate energy efficient systems tailored for SMSCBs in occupied buildings – living labs
- Develop effective market pathways for energy efficiency with utilities and other commercial stakeholders: brokers, finance, service providers.
- Provide analytical tools to link state and local policies with utility efficiency programs



Economic Development
Organizations



Industry



Universities

CBEI
Partners

Purpose and Objectives: Problem Statement

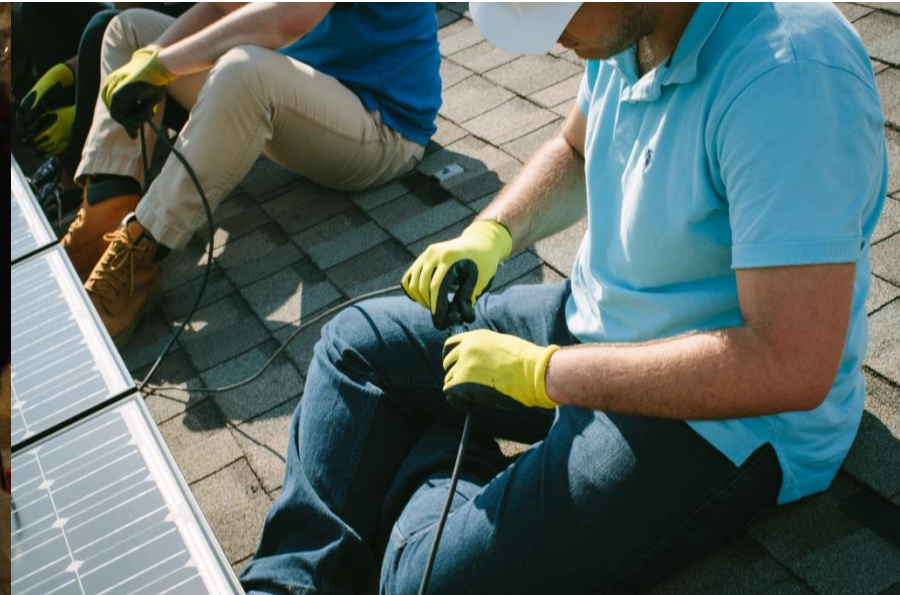
Demand is increasing for a commercial buildings workforce with advanced competencies in operations, maintenance and energy-related technologies. DOE recently released the Better Buildings Workforce Guidelines, voluntary national guidelines to improve the quality and consistency of commercial building workforce credentials for four key energy-related jobs: Building Energy Auditor, Building Commissioning Professional, Building Operations Professional and Energy Manager.

The industry needs ***documented career and development pathways and a clear representation of the competencies*** required in each role in order to accelerate the movement of competent people into these jobs.



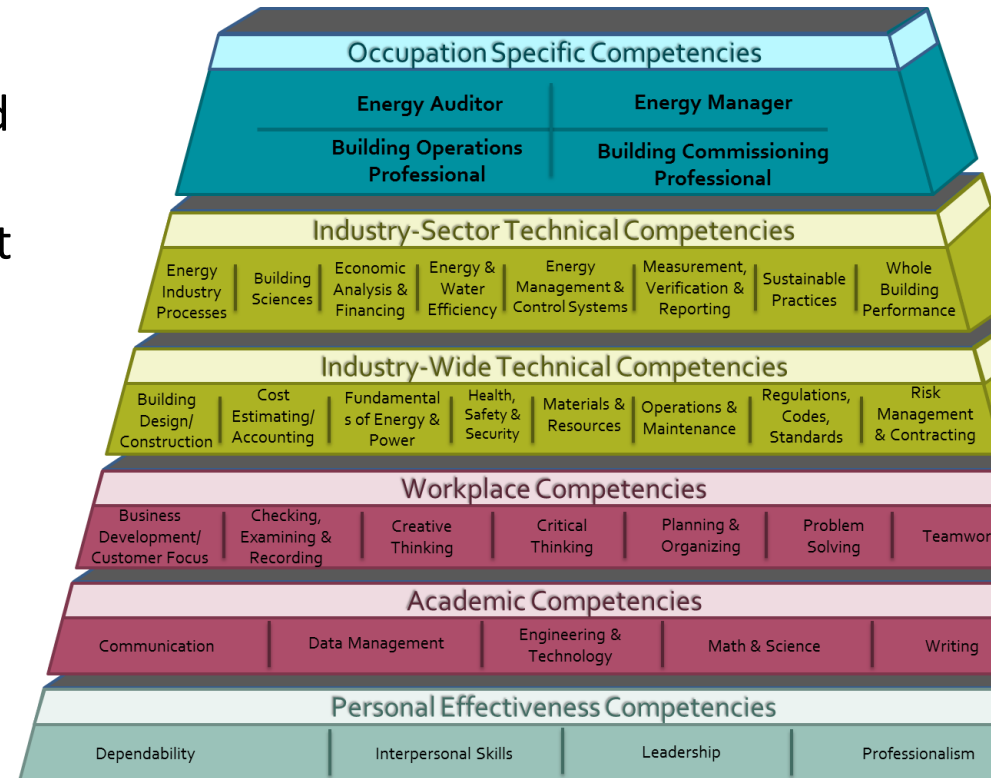
Purpose and Objectives: Target Market and Audience

1. **Professional associations and training & education providers** involved in workforce development including trades unions, veterans organizations, associations for architects and engineers, etcetera, so they can counsel workers and establish training and other programs to support movement into the four energy-related jobs
2. **Policymakers** seeking to link program funding with recognized credentials
3. **Job-seekers** seeking guidance on entry points and career advancement
4. **Employers** seeking guidance on talent recruitment and cultivation



Purpose and Objectives: Impact of Project

- Output #1: As of April 10, 2015, the **ACBW Competency Model** is housed on the Department of Labor's Competency Model Clearinghouse. It is a resource for industry which documents the foundational and technical skills and competencies required for workplace success and provides a resource for the development of curriculum, certifications, and the tests that assess work-related competencies.



- Output #2: The **ACBW Career Map** beta website depicts clear workforce development pathways and career progressions into the advanced commercial buildings workforce (ACBW). It is an easy-to-understand representation of the four job titles, associated credentials and pathways to obtain the credentials and advanced positions.

Purpose and Objectives: Impact of Project (con't)

This project will contribute to substantial improvement in workforce readiness and the demand for and employment of qualified workers in the following ways:

- Near-term – the ACBW Career Map will be used to educate training and education providers and professional associations about the existence of the Better Buildings Workforce Guidelines and associated credentials and spur them to modify and create curricula aligned with the credentials. Veterans groups and community colleges have already provided feedback indicating the career map will be valuable for this purpose
- Intermediate – trades unions, veterans' employment organizations and other groups supporting displaced workers will use the career map to counsel job seekers; employers will use the competency model to create job descriptions, establish qualifications for positions and develop internal training programs; policy makers (including state and local officials and public utility commissions) will link requirements for qualifications and energy efficiency programming to credentials



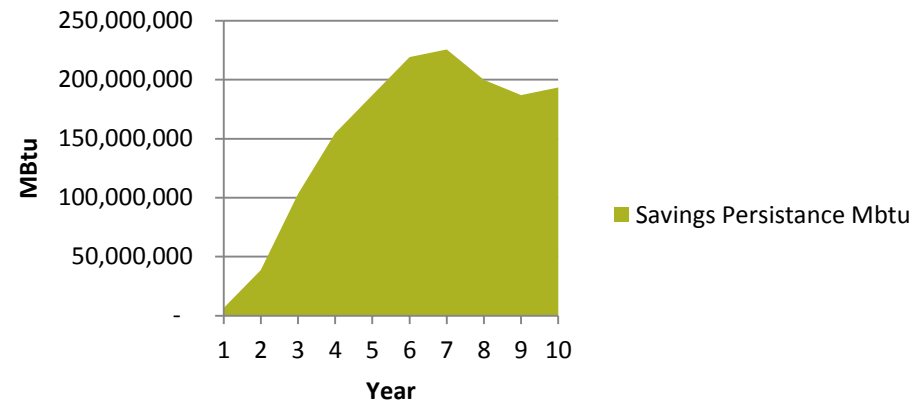
Purpose and Objectives: Impact of Project (con't)

This project will contribute to substantial improvement in workforce readiness and the demand for and employment of qualified workers in the following ways:

- Long-term – the ACBW Career Map is a go-to resource for all audiences and is accelerating the employment and career progressions of people into the advanced commercial buildings workforce
 - One of the pillars of DOE's Better Buildings Initiative to make commercial buildings 20% more energy efficient over the next 10 years is "Developing a Skilled Clean Energy Workforce"
- Guiding people into ACBW careers helps to achieve this goal

DOE's Better Buildings Workforce Guidelines investment predicated on energy savings estimates seen below. ACBW Competency Model and Career Map support achievement of the projected savings

DOE Estimate for Savings Persistence over 10 years with BBWG Investment



Approach

Tying It All Together: The Framework to Build a “Better Buildings Workforce”



Approach

Research-based process integrating existing industry data, industry interviews, thematic analysis, and prioritization

- Updated Competency Model with revised Job Task Analyses
- Attended Scheme Committee meetings for each of four credentials
- Interviewed 30 people in the advanced commercial buildings workforce
- Interviews provided information to highlight “Performance Competencies” for each job title that contribute to successful business processes
- Career Map entry points and pathways determined from interviews and thematic analysis
- Focused on strategic entry points for:



Veterans



Building
& Trades



Graduates



Energy
Professionals

Approach

Tying It All Together: The Framework to Build a “Better Buildings Workforce”



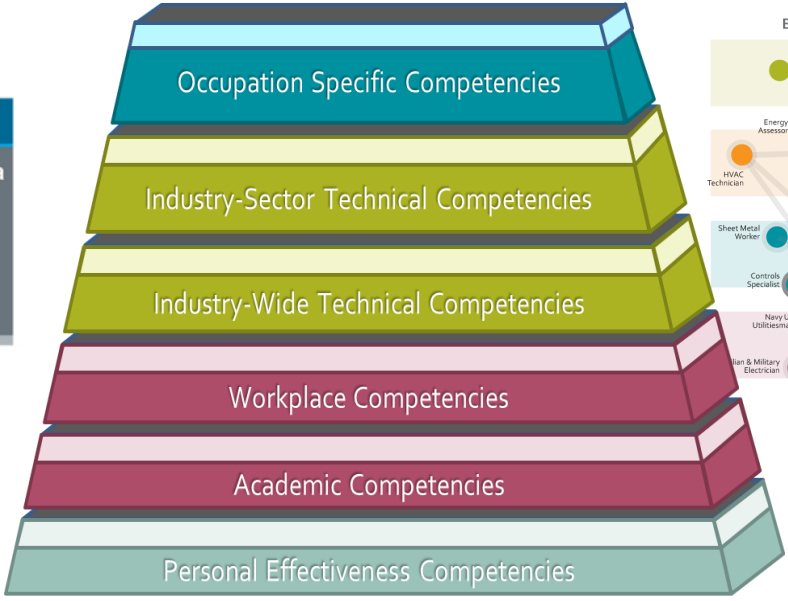
U.S. DEPARTMENT OF ENERGY Energy Efficiency & Renewable Energy

BUILDING TECHNOLOGIES

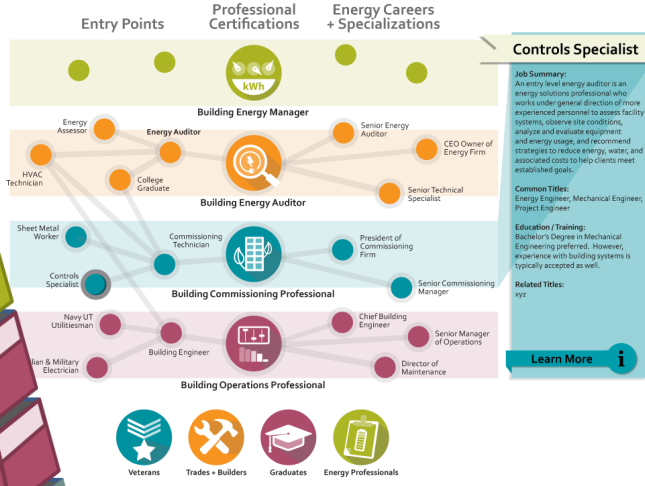
Job/Task Analysis for a Commercial Building Energy Auditor: Public Comment Draft

- Energy Auditor
- Operating Engineer
- Commissioning Authority
- Energy Modeler
- Energy/Sustainability Manager
- Facility Manager

September 2011



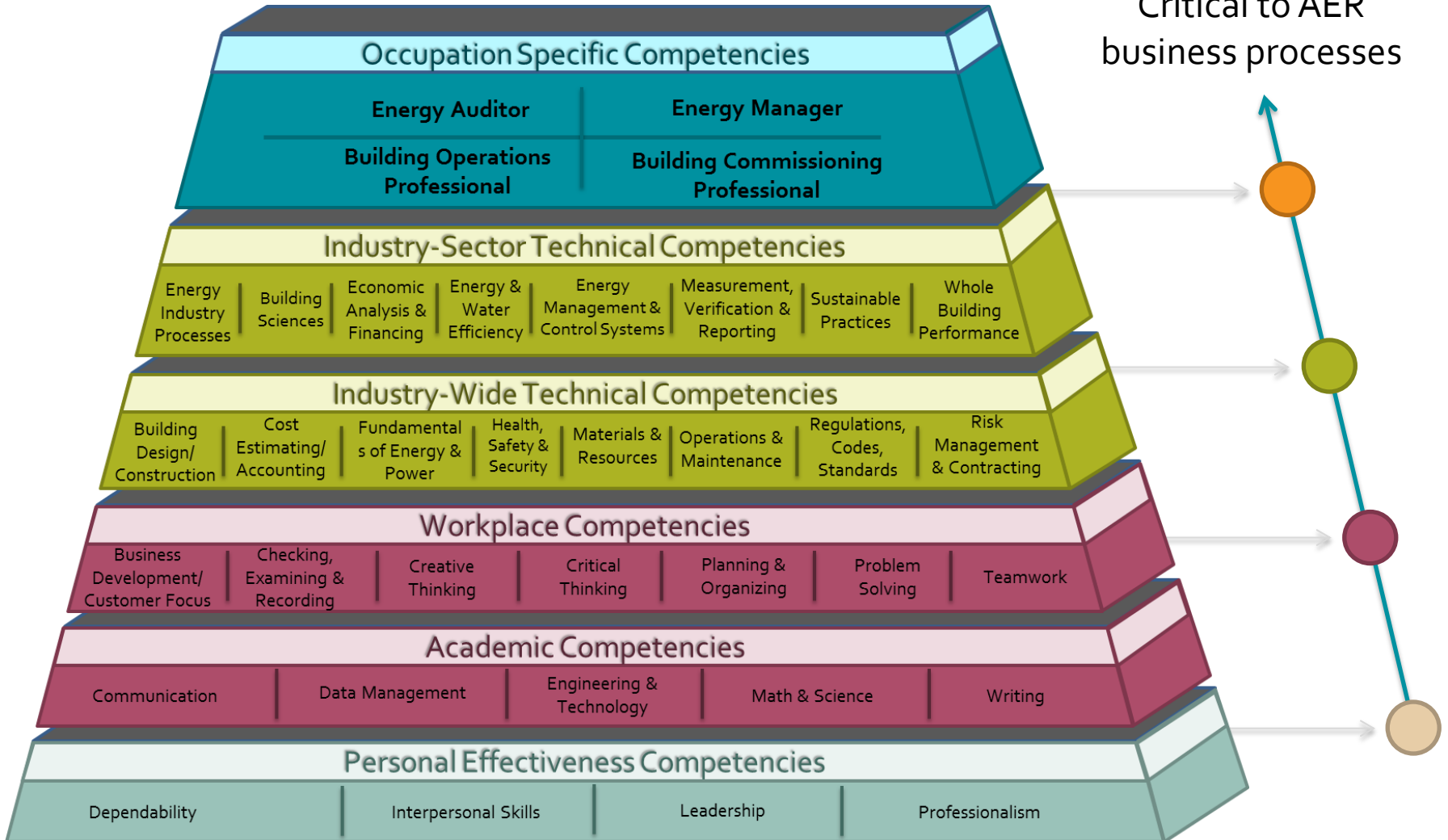
Performance competencies



Approach

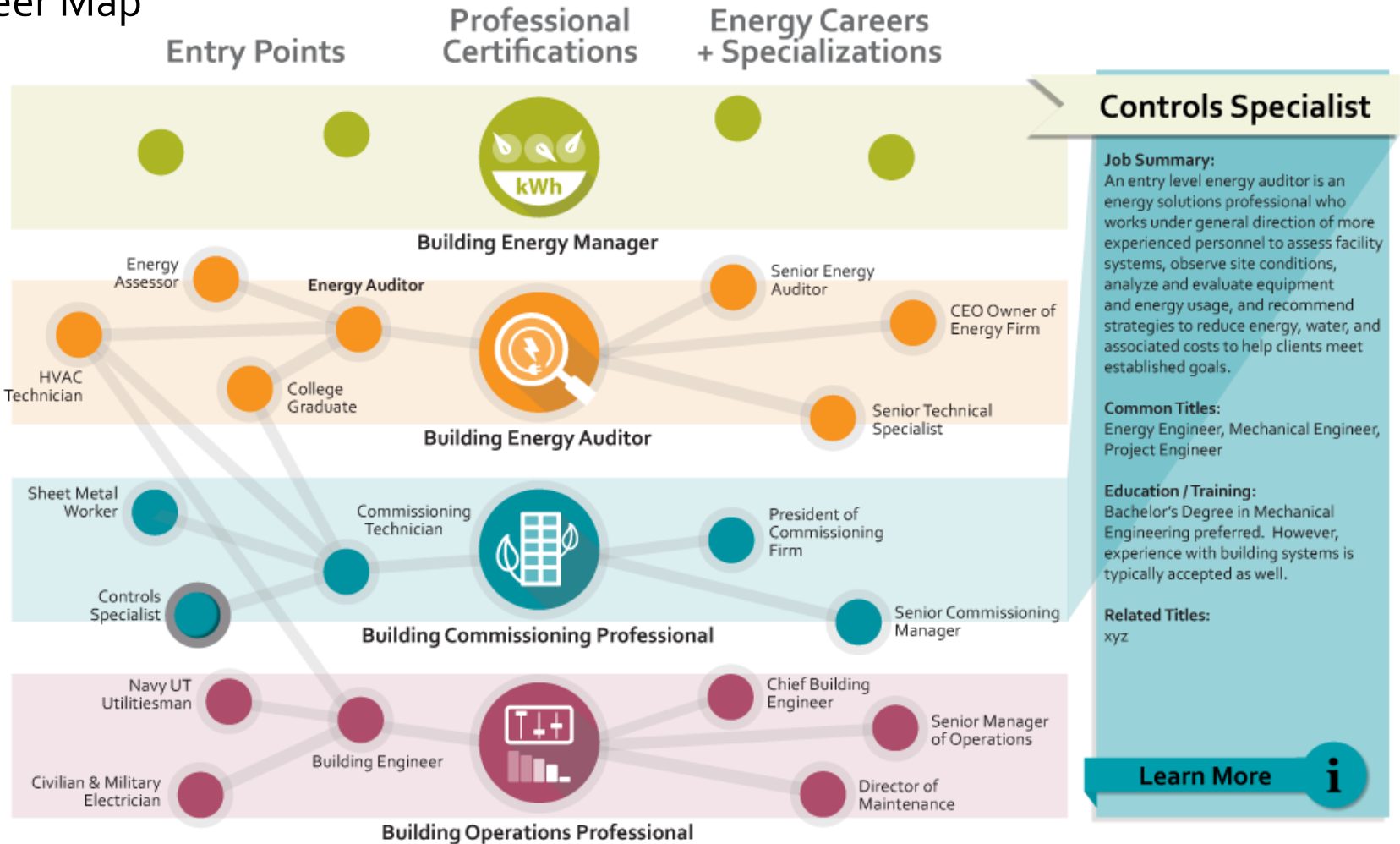
Competency Model

“Performance Competencies”
Critical to AER
business processes



Approach

Career Map



Veterans



Trades + Builders



Graduates



Energy Professionals

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Approach

Key Issues:

- Significant overlap and confusion exists across job titles and shared job responsibilities
- Extensive knowledge and skills associated with positions (e.g. Energy Auditor) blurs understanding of critical performance competencies that are needed to advance advanced energy retrofit business processes

Distinctive Characteristics:

- Utilized proven methods such as Job Task Analysis and basic competency model format and enhanced with unique insights such as performance competencies (e.g. what makes someone particularly good at their job)
- Visual, user friendly tool to engage with the workforce to enter into or to advance in this industry



Progress and Accomplishments

- **Accomplishments:**
 1. Competency model published on Department of Labor website
 2. ACBW Competency model case summary published on DOL's Career One Stop website
 3. Identified pathways to new national workforce standards
 4. Identified performance competencies
 5. Designed career map web interface
 6. Created filters in career map to highlight veterans & trades
- **Market Impact:** Main work products being introduced to market in April 2015 therefore none to report
- **Awards/Recognition:**

None at this time



Energy
Manager



Building
Energy Auditor



Building
Operations
Professional



Building
Commissioning
Professional

**Commercial Building
Workforce Credentials**

Progress and Accomplishments

- **Project Integration:** Project staff collaborated with and were members of the Board of Direction for Workforce Standards under the auspices of National Institute for Building Sciences (NIBS); participated in the NIBS-led credentialing scheme committees; conducted interviews with dozens of ACBW professionals and members of the scheme committees; utilized CBEI's Technical Advisors from Department of Labor, American Legion and NIBS
- **Partners, Subcontractors & Collaborators:** Penn State provided academic leadership, process plan and coordination; Facility Engineering Associates led development of career map and competency model; Penn State graduate students conducted research and thematic analysis; Center on Wisconsin Strategy at University of Wisconsin-Madison provided expert consulting on career mapping
- **Communications:**
 - Presented at NIBS Board of Direction meetings in 2014
 - American Association of Community Colleges, Workforce Development Institute, January 2015 "Better Buildings, Better Jobs: Mapping Careers in Commercial Efficiency"
 - Upcoming presentations:
 - ~ International Facilities Manager Association (IFMA) Facility Fusion (April 2015)
 - ~ BOMA Every Building Conference (June 2105)
 - ~ International Construction Specialty Conference (June 2015)

Next Steps and Future Plans

- The beta Career Map created in this budget period will be tested with various target audiences. Using feedback from the test users, a revised version of the Map will be completed and a long-term web host and sustainability plan will be identified
- Using DOE's, NIBS' and other commercial workforce networks, develop and execute a plan for wide-spread dissemination of the career map. 3-4 webinars will be conducted targeted at these networks to help them understand the career map and how it relates to the broader advanced commercial buildings workforce standards and credentials. Webinars will be recorded and available for online use.

Career Map Profile:

Building Operations Professional



Jeff Bartlett

Supervisory Facilities Operations Specialist:

Jeff Bartlett's first assignment in Navy was a high voltage electrician. He was then assigned as a senior electrician, and then as a journeyman electrician. At his next command, Jeff became a Master Electrician in the Navy and he was conducting various building operational task running a power plant. Later in his career, his job was strictly building operation and facilities management. Jeff then became a staff resident civil engineer for a large construction project in Porto Rico and was the Commanding Officer's Liaison for building that was being constructed. He continued to work for different customers in US and oversea maintaining bases' facility operations in the areas of electrical, plumbing, and infrastructure. Jeff is an accomplished Senior Manager with proven leadership and management skills to lead complex organizations and deliver consistent excellence. Currently he leads and manages a comprehensive predictive and preventative maintenance program for the Veteran's Administration's (VA) Consolidated Mail Outpatient Pharmacy's (CMOP) major automated systems and sub-systems. This automated facility fills 50K+ prescriptions each day for veterans around the globe.



Project Budget

Project Budget

2013/14- \$408,000

2014/15 - \$552,000

Variances: none

Cost to Date: \$960,000 – 100% will be expended as of 4.30.2015

Additional Funding: \$173,000 (Penn State)

Budget History

CBEI BP3 (past)
2/1/2013 – 4/30/2014

CBEI BP4 (current)
5/1/2014 – 4/30/2015

CBEI BP5 (planned)
5/1/2015 – 4/30/2016

DOE-
\$370,000

Penn State -
\$38,000

DOE-
\$500,000

Penn State -
\$52,000

DOE -
\$175,000

Penn State -
\$42,000

CBEI – Consortium for Building Energy Innovation (formerly EEB Hub)

BP – Budget Period

Project Plan and Schedule

Project Start: Feb 1, 2013	Completed Work											
Projected End: April 30, 2016	Active Task (in progress work)											
	◆ Milestone/Deliverable (Originally Planned)											
	◆ Milestone/Deliverable (Actual)											
	BP3 (2013-14)				BP4 (2014-15)				CBEI BP5 (2015-16)			
Task	Q1 (Feb-Apr)	Q2 (May-Jul)	Q3 (Aug-Oct)	Q4 (Nov-Apr)	Q1 (May-Jul)	Q2 (Aug-Oct)	Q3 (Nov-Jan)	Q4 (Feb-Apr)	Q1 (May-Jul)	Q2 (Aug-Oct)	Q3 (Nov-Jan)	Q4 (Feb-Apr)
Past Work												
Q1 Aligned workplan with BTO - NIBS	◆	◆										
Q1 Competency model schema complete		◆										
Q4 Draft Competency model to NIBS				◆								
Current/Future Work												
Q2 Finalize 4 competency models (with revised JTAs)								◆				
GNG/Q3 Map career draft pathways/routes								◆				
Q4 Create beta of career map web tool									◆			
Q4 Deliver plan for market deployment of model and map									◆			
GNG/Q1 Define process/principles and funding model to update career map										◆		
Q2 Update career map with emerging credentials											◆	
Q2 Test beta version of career map with target audiences and summarize findings												◆
GNG/Q3 Publically accessible career map completed and presentation of career map to 4 of 8 audience groups completed												◆

BP – Budget Period for Consortium for Building Energy Innovation (formerly EEB Hub)