ZERO ENERGY
COMMERCIAL BUILDINGS CONSORTIUM
CBC

# Commercial Buildings Consortium

Supporting Consortium for the U.S. Department of Energy
Net-Zero Energy Commercial Buildings Initiative

**Sandy Fazeli**

National Association of State Energy Officials
sfazeli@naseo.org; 703-299-8800 ext. 17
April 2, 2013

# Purpose & Objectives



## Problem Statement:

- Many energy savings opportunities in commercial buildings remain untapped, underserved by the conventional “invest-design-build-operate” approach
- The commercial buildings sector is siloed, with limited coordination between federal government, commercial property developers/owners, the commercial real estate community, financial institutions, architects/designers, and contractors
- There is a need for a coordinated, broad-based industry/ government  effort sufficient in scale to tap into these opportunities and influence the billions of dollars that that commercial building owners spend each year on new construction, renovation, and energy.

# Purpose & Objectives (cont.)



## Impact of Project (since project launch in 2009):

- **Increased collaboration:** The CBC provides an organizational framework for sustained public-private collaboration among commercial building professionals, researchers and educators, utilities, and government agencies at federal, state, and local level.
- **Increased innovation:** The CBC has identified new technologies, market strategies, and innovative public and corporate policies to advance the zero-net-energy agenda.
- **Increased demonstration and deployment:** The CBC works with DOE to identify opportunities for proving out and deploying energy-saving technologies and practices

# Purpose & Objectives (cont.)



## Project Focus and Strategies:

**Collaboration**

- Facilitate information and knowledge-sharing among stakeholders through monthly newsletter; topical webinars; report development and dissemination; and member engagement and surveys

**Innovation**

- Use CBC sector-based member working groups to capture market feedback on key barriers; identify innovative strategies and successful approaches
- Track and identify promising technologies and practices, innovative market strategies, and effective public policies

**Demonstration**

- Assist in the refinement of a standard building energy data taxonomy to streamline and lower the transaction costs of aggregating, exchanging, and analyzing data across multiple sources
- Highlight demonstration opportunities to CBC members through newsletter and targeted outreach

**Deployment**

- Support deployment of Better Building Alliance technology specifications through CBC member survey and interviews designed to capture information about corporate procurement practices

# Approach



Work with DOE to achieve near-term results while charting a path to the EISA long-term goals for net-zero commercial buildings by:

- capturing market feedback on key barriers;
- identifying innovative strategies and successful approaches;
- facilitating information/knowledge transfer among stakeholders; and
- helping to bridge the space between federal policy and programs on the one hand, and a range of industry, state, local, and utility initiatives on the other.

# Approach



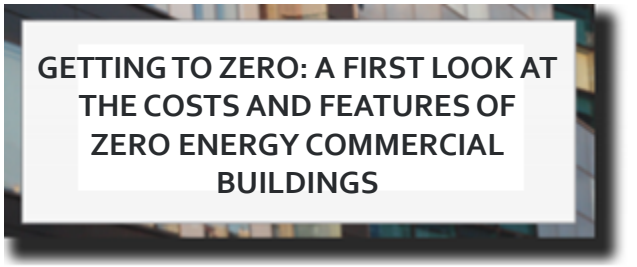
## Key Issues:

- 2011 and 2012:
  - Technology, cost, non-cost barriers to achieving wide-scale deployment of NZE
  - Assessment of state of NZE and NZE-capable buildings in the U.S.
- 2012 and 2013 (through project close in 2013):
  - Deployment acceleration of Better Building Alliance technology specifications and resources
  - Refinement of Data Exchange Specification

## Distinctive Characteristics:

- Close collaboration and regular interaction with DOE CBI staff
- Multi-disciplinary, multi-sector approach gleaning input from CBC Steering Committee, CBC members (through working groups), and other commercial building stakeholders





## Accomplishments in the Past Year:

- Identified needed cost reductions for industry acceptance of zero-energy, disseminate findings to industry stakeholders:
  - Publication of *A First Look at the Costs and Features of Zero Energy Commercial Buildings* (April 2012), dissemination of findings through press release, email campaign, and well-attended CBC webinar
- Increased outreach to and collaboration with state/local entities
  - Regular participant in SEE Action Existing Commercial Buildings meetings, contributor to working group blueprint, disseminate SEE Action working group resources and information
  - Expansion of CBC Steering Committee to include Energy Efficient Buildings Hub (EEB Hub) in Philadelphia, PA
  - Expansion of CBC membership by 40 state/local representatives

## Current Progress against Milestones:

- Milestone: systematically collect stakeholder input to refine and deploy DOE's Building Energy Performance Taxonomy (a.k.a. Data Exchange Specification)
  - Not yet completed; task put on hold as DOE conducts stakeholder assessment
- Milestone: create marketing and deployment plan for Better Building Alliance technology specifications, identify key end-use audiences and critical market channel influencers
  - Task is underway: CBC is currently working with BBA project teams to develop a survey instrument to collect CBC member input into privately-owned and publicly-owned commercial building procurement processes

## Project Goals

- Compiling and assessing, from an industry perspective, information on performance and cost of current and next-generation technologies, systems, and practices that can serve as a knowledge base for industry to achieve net-zero energy performance in commercial buildings;
- Identifying market potential, barriers, and strategic solutions needed to accelerate deployment and widespread use of these advanced technologies, systems, and practices in new and existing commercial buildings;
- Coordinating activities and promote the full exchange of information with DOE commercial sector partners; other federal agencies; utility, state, and local initiatives; and private sector activities related to advancing energy performance of commercial building technologies; and
- Disseminating this information to inform and guide decisions by all participants in the commercial building delivery and operations chain as well as national, regional, and local policy makers.

## Progress

- Three research reports covering next-generation technologies, cost and non-cost barriers, state of zero-energy
- Current and Next-Generation Technology Inventories
- Case studies of successful state/local government emerging technology demonstration programs
- Support of the High-Performance Building Clearinghouse
- Monthly newsletter/regular dissemination of news, opportunities, information
- Growth of CBC membership to 728 individuals (as of March 2013)
- Ongoing: Deployment support and acceleration for BBA technology specifications and resources

# Project Plan & Schedule*

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

| Summary | |
|---|---|
| Award Number: DE-EE002445 | |
| CDFA Number: 81.086 | |
| Project Period: October 2009-September 2013 | |
| | |
| | |

| Legend | |
|---|---|
| | Work completed |
| | Active Task |
| | Task on hold (awaiting DOE go-ahead) |
| ◆ | Milestones & Deliverables (Original Plan) |
| ◆ | Milestones & Deliverables (Actual) |

| | FY2010 | | | | FY2011 | | | | FY2012 | | | | FY2013 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Task/Event** | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| **Commercial Buildings Consortium** | | | | | | | | | | | | | | | | |
| Next Generation Technologies Inventory | | | | | ◆ | | | | | | | | | | | |
| Develop Technology Analysis Reports | | | | | ◆ | ◆ | | | | | ◆ | | | | | |
| Develop Case Studies of State/Local Technology Demonstration Programs | | | | | ◆ | ◆ | | | | | | | | | | |
| **Current work and future research** | | | | | | | | | | | | | | | | |
| Convene Stakeholders and Summarize Input into Energy Performance Taxonomy | | | | | | | | | | | | | ◆ | | | |
| Develop Deployment Support Plans and Summary Document for Better Building Alliance Technology Specifications | | | | | | | | | | | | | | | ◆ | ◆ |
| Update Final Technology Analysis Report | | | | | | | | | | | | | | | | ◆ |

**Project plan shows only major milestones and deliverables and does not include project management/reporting deliverables, the monthly CBC newsletter, collaboration with SEE Action, or other ongoing activities*

# Project Budget



| Budget History | | | | | | | |
|---|---|---|---|---|---|---|---|
| FY2009 | | FY2010 | | FY2011 | | FY2012 | |
| DOE | Cost-share | DOE | Cost-share | DOE | Cost-share | DOE | Cost-share |
| $332,591 | $130,000 | $369,082 | $140,000 | $203,714 | $37,000 | $94,613 | $0 |

Variances: No-cost extensions in 2010 and 2012 to expend remaining funds

Cost to Date: $1,199,873.71 (as of 1/31/13)

## Partners, Subcontractors, and Collaborators:

- New Buildings Institute
  - Tracking performance of zero-energy and zero-energy capable buildings
  - Research, analysis, and outreach for CBC reports
- Energy Center of Wisconsin
  - Support preparation of Next Generation Technologies Report
- Washington State University
  - Assist in developing existing technology and next-generation technology inventories
- Alliance to Save Energy
  - Website maintenance and communications (until 2012 transfer to NASEO)
  - Strategic guidance and representation of CBC at meetings, conferences
  - Assistance in report technical reviews, development, and outreach
- Association of State Energy Research and Technology Transfer Institutions (ASERTTI)
  - Communication of CBC actions and information to ASERTTI members
  - Assistance in report development and review

# Communications



Reports

- "Next Generation Technologies: Barriers and Recommendations," February 2011
- "Analysis of Cost and Non-Cost Barriers and Policy Solutions for Commercial Buildings," February 2011.
- "Getting to Zero: A First Look at the Costs and Features of Zero-Energy Commercial Buildings," March 2012.

CBC Newsletter

- Distributed monthly to CBC members; highlights zero energy news and activities, opportunities for members, and upcoming conferences

Conference presentations:

- 2010 ACEEE Summer Study
- Ecobuild 2012
- 2012 ACEEE Summery Study

Webinars:

- "Getting to Zero" Report and Webinar, April 2012
- "Strategies and Technologies for Small Commercial Buildings" Webinar, January 2013

## Next Steps and Future Plans:

- When needed, CBC will continue to convene stakeholders and summarize industry input in support of the Building Energy Performance Taxonomy/Data Exchange Specification
- CBC will continue to develop deployment support plans and summary document for Better Building Alliance technology specifications
- Update Final Technology Analysis Report, as requested by DOE
- Project close out (Sept. 2013)