

Building America Annual Stakeholder Meeting

April 30, 2013

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Collective Impact For ZNERH

SAM RASHKIN
Chief Architect, BTO

Collective Impact:

The commitment of a group of important actors from different sectors to a common agenda for solving a specific social problem.

“Collective Impact” by John Kania and Mark Kramer

Stanford Social Innovation Review

Winter 2011

“Remarkable Exceptions”

- Strive Public Education in Greater Cincinnati
- Elizabeth River Project in Southeast Virginia
- Shape Up Childhood Obesity Summerville, MA

5 Conditions:

- Common Agenda
- Shared Measurement Systems
- Mutually Reinforcing Activities
- Continuous Communication
- Backbone Support Organizations

Lack of Sustainable Homes

- Affordability
- Energy Resources
- Health
- Durability
- Water Resources

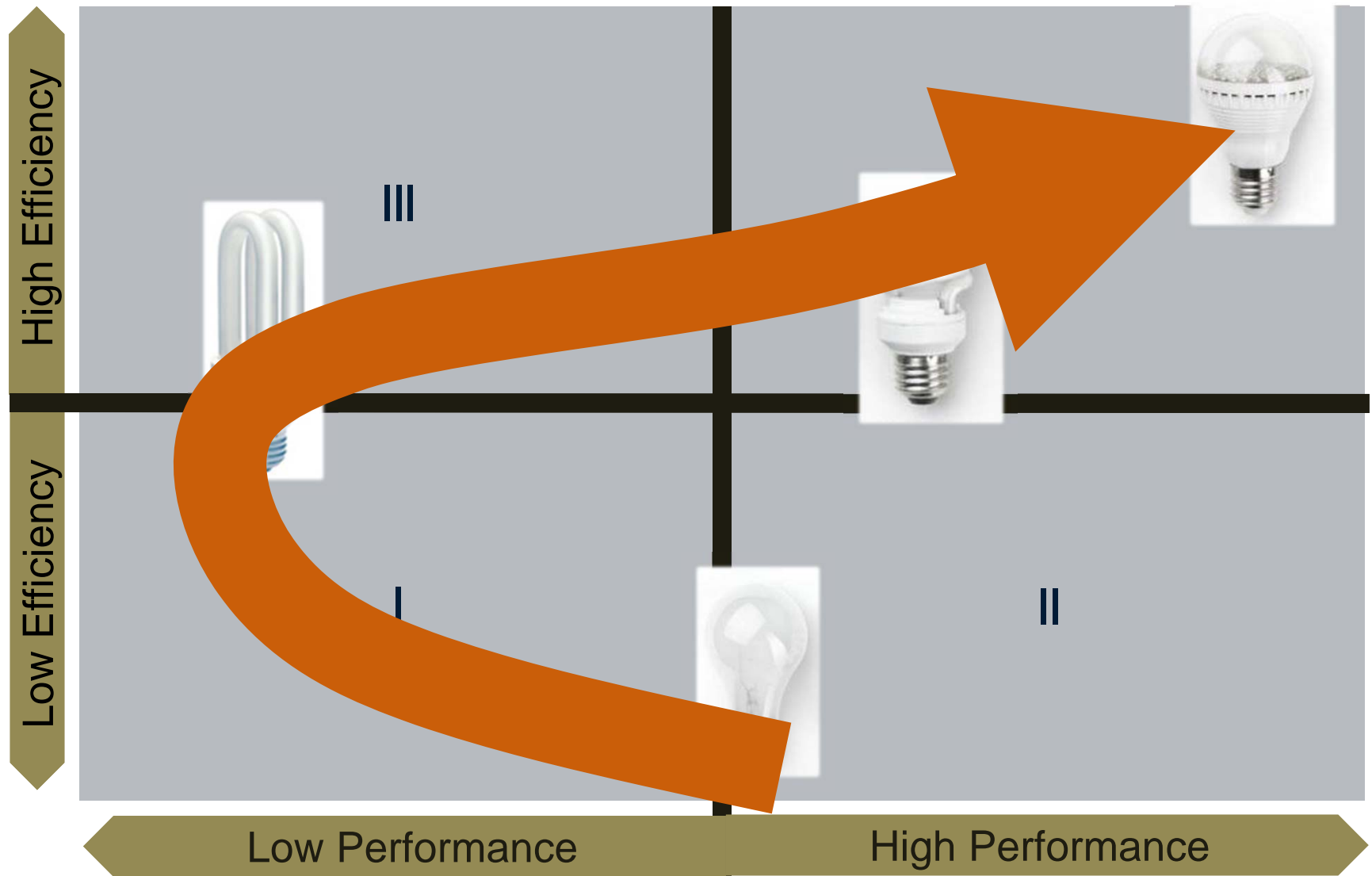
- **~\$350 Billion** Utility Bill Savings
- **~\$90 Billion** Annual Construction Revenue
- **~\$1.5 Trillion** Additional Tax Revenue
- **~120,000** Persistent New Jobs
- **~3 Million** Job-Years of Work
- **~670 Trillion** BTU Annual Energy Savings
- **~2,800 MMTCe** Reduce Carbon Emissions

Ultra-High Efficiency + High-Performance

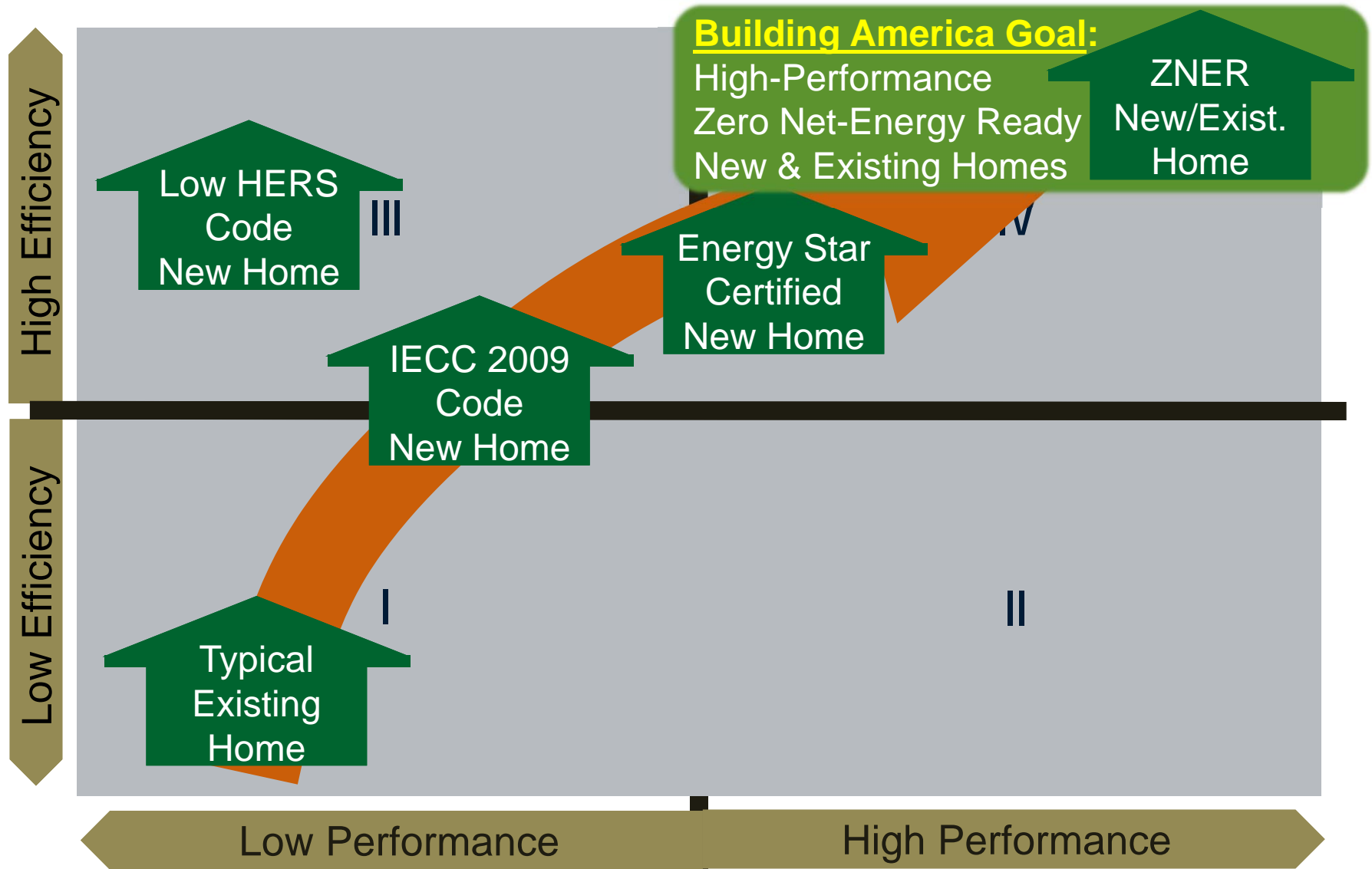
- Enclosure
- Low-Load HVAC
- Components
- Controls

- Affordable
- Comfort
- Health
- Durability
- Renewable Readiness
- Water Conservation
- Disaster Resistance

Efficiency + Performance Example



Path to Sustainability



Zero Net-Energy Ready Homes

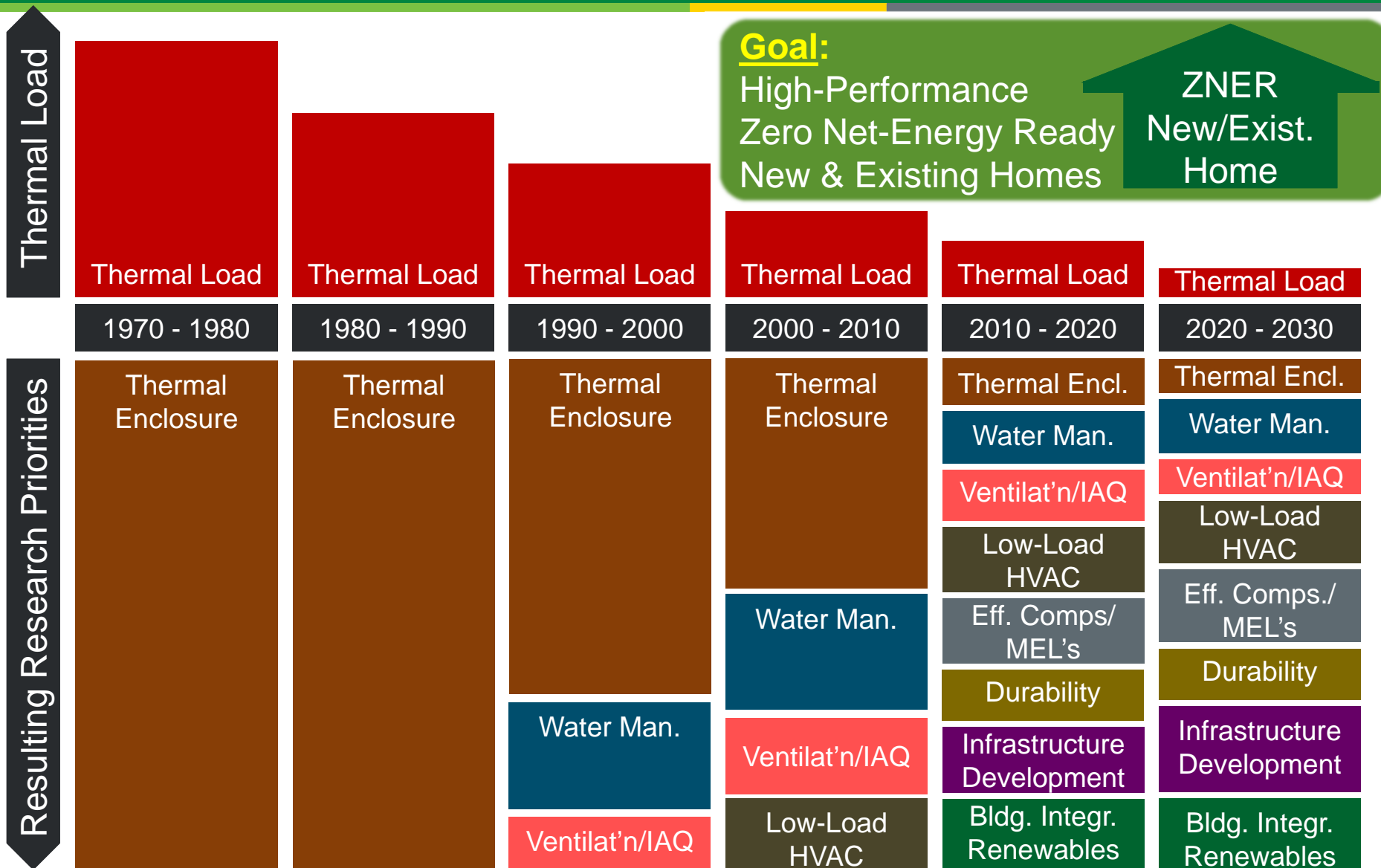
- Critical Innovations
- Central Knowledge Base
- Clear Market Definition
- Professional Infrastructure
- Value Recognition

Building America Agenda
Critical Innovations

Building America Research Agenda

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Goal:
High-Performance
Zero Net-Energy Ready
New & Existing Homes

**ZNER
New/Exist.
Home**

Building America Agenda

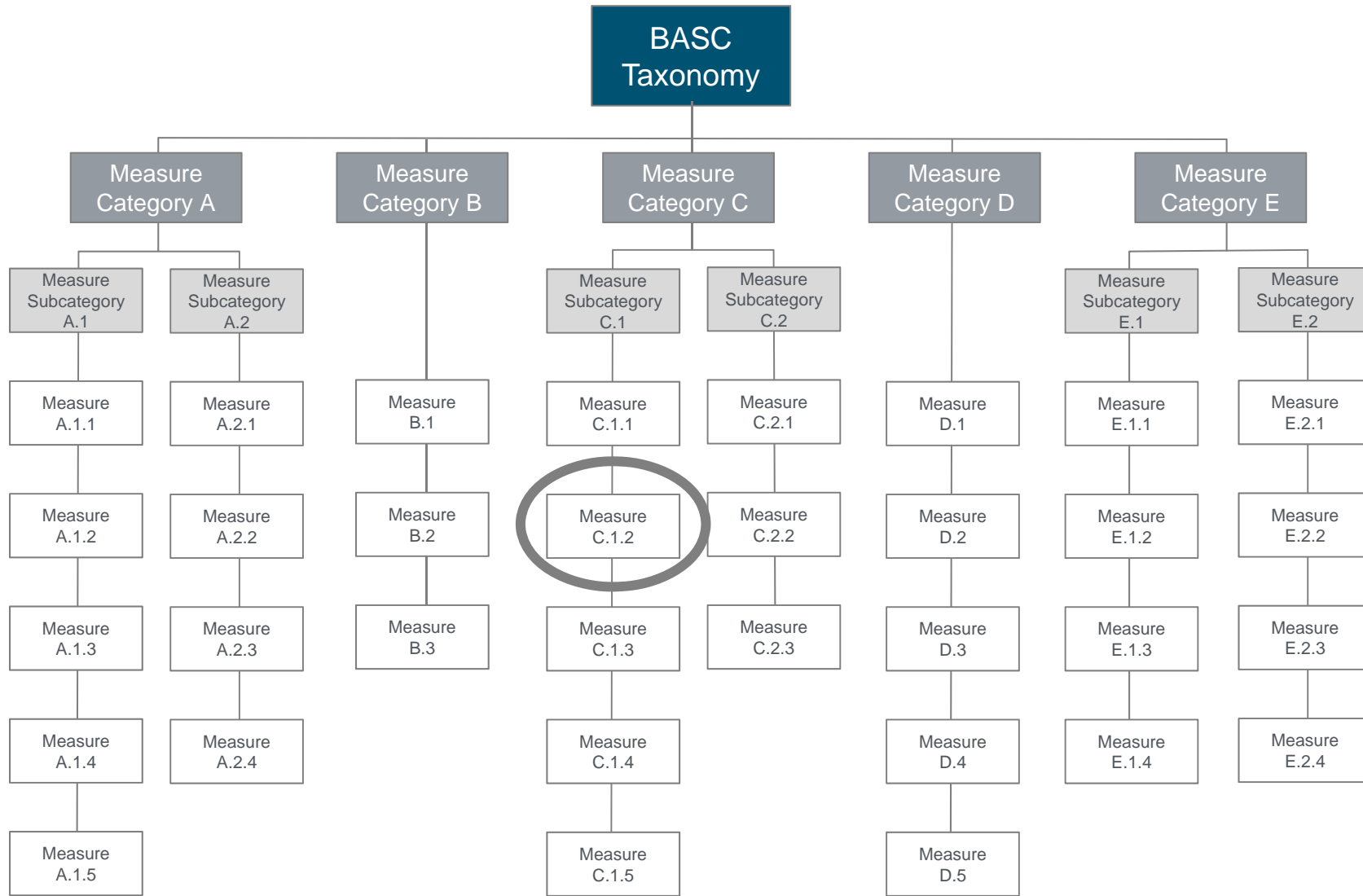
Central Knowledge Base

World-Class Research...

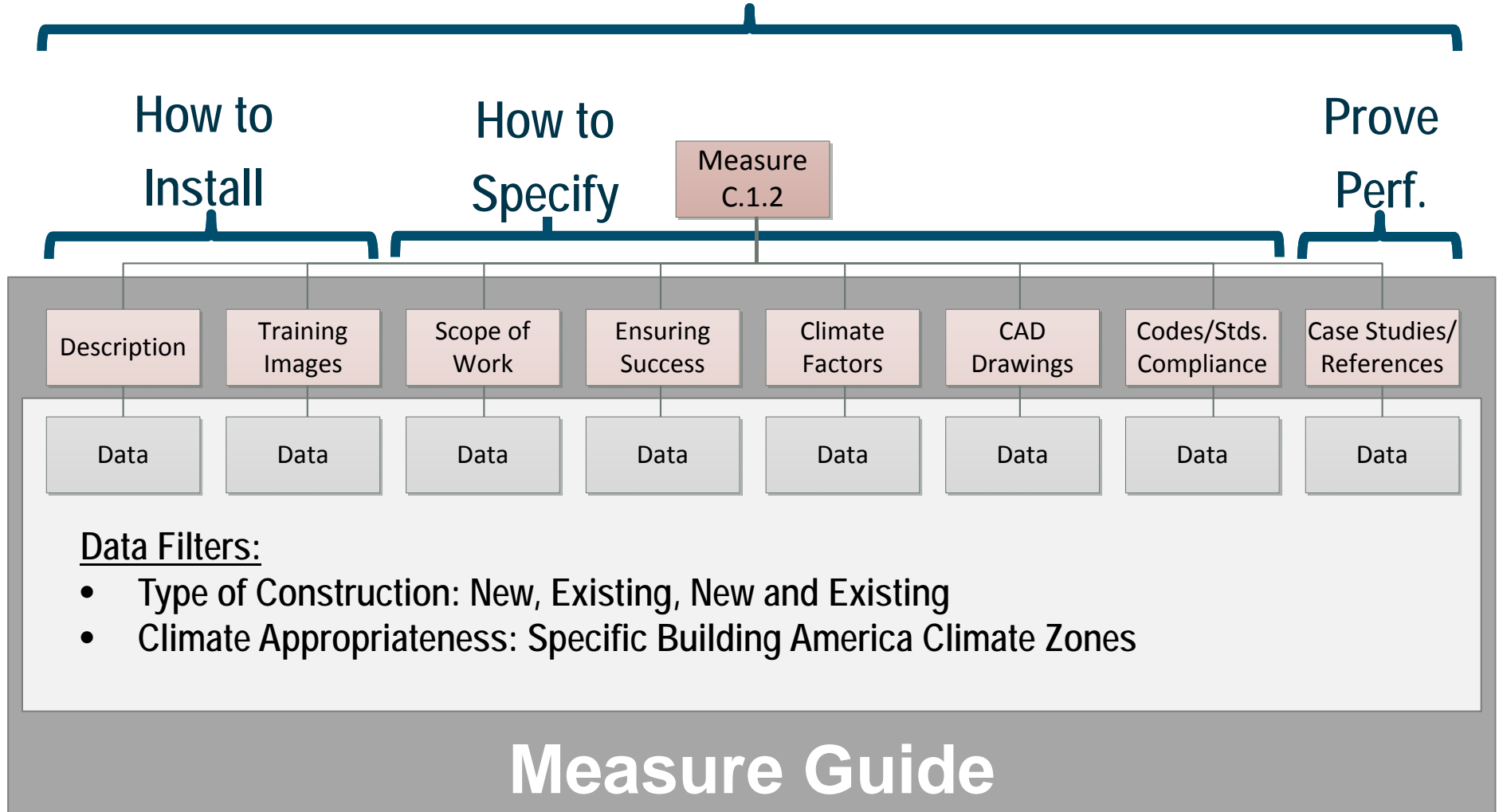


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finger ups

BASC Taxonomy and Data Base

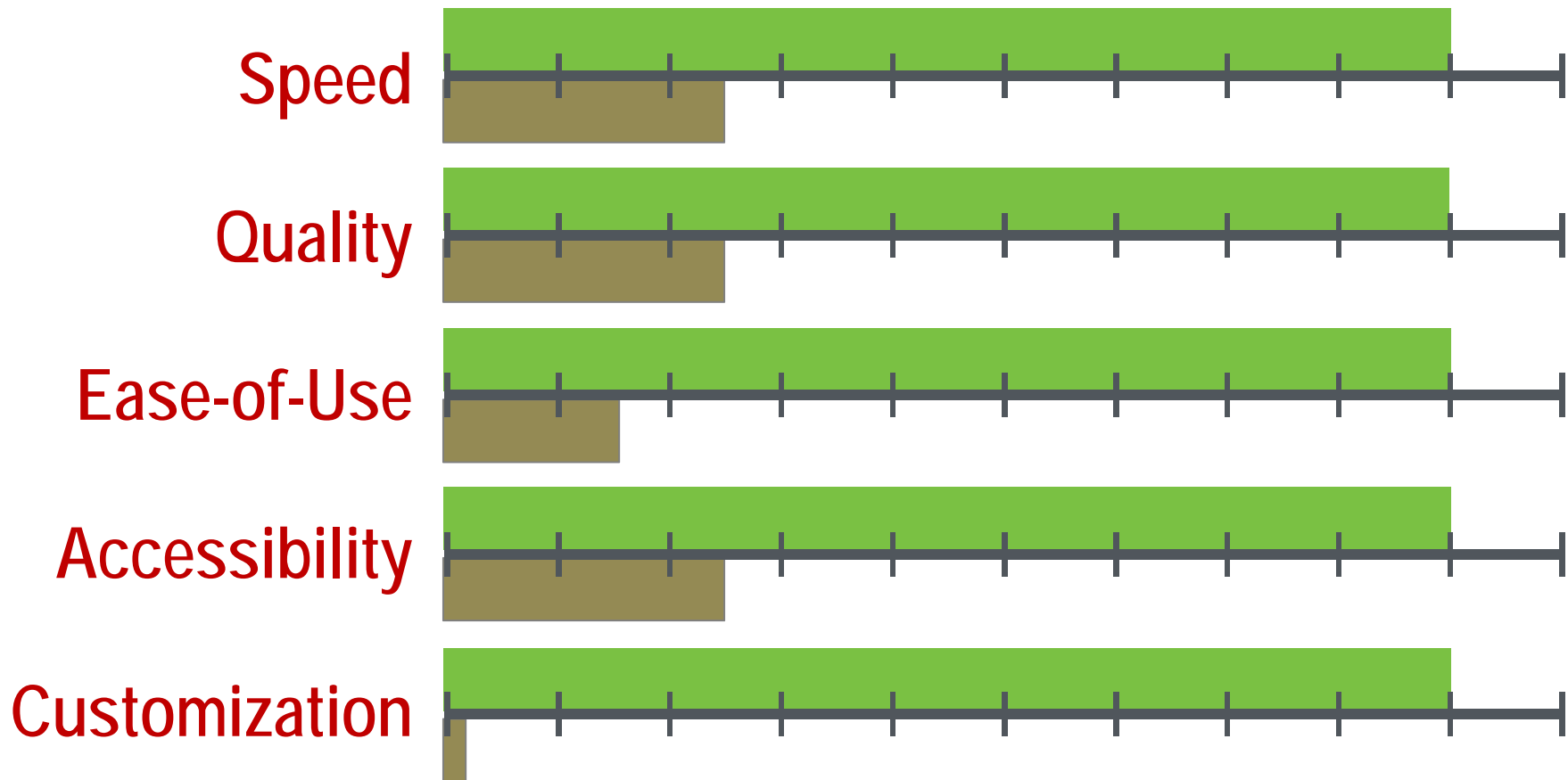


How to Educate



BASC Central Knowledge Base

Key: Pre-BASC BASC



Stakeholder Role:

- Use
- Promote
- Participate (feedback, share content)

Building America Agenda

Clear Market Definition

Clear Definition ZNERH

High-performance home so energy efficient, all or most annual energy consumption can be offset by renewable energy.



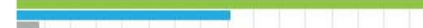
Defining ZNERH for New Homes



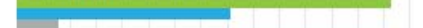
U.S. DEPARTMENT OF ENERGY
**CHALLENGE
HOME**

A Symbol of Excellence

HEALTHFUL ENVIRONMENT



COMFORT PLUS



ADVANCED TECHNOLOGY



ULTRA EFFICIENT



QUALITY BUILT



DURABILITY



KEY ■ DOE Challenge Home
■ ENERGY STAR Home
■ Existing Home

This label indicates relative performance of this DOE Challenge Home to existing homes (built between 1990 and 2010) and ENERGY STAR qualified homes. Actual performance may vary.



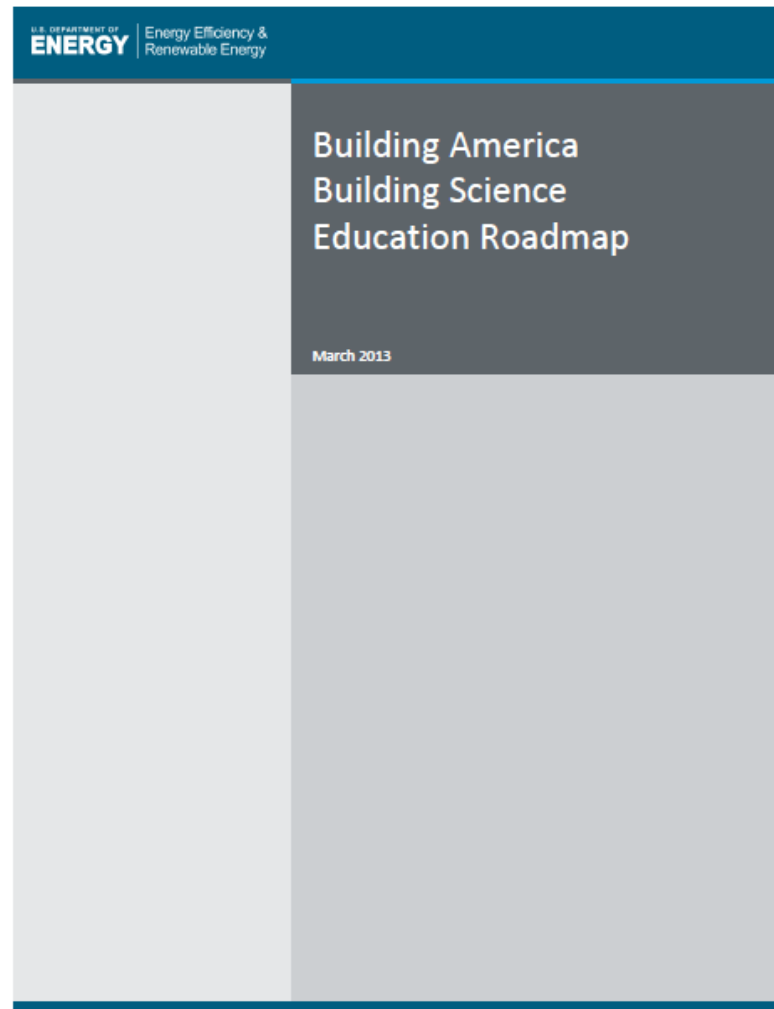
Stakeholder Role:

- Join
- Promote
- Host Training
- Collect Energy and Business Metrics

Building America Agenda

Professional Infrastructure

Building Science Education



Virtually every housing industry stakeholder group is underserved with building science education:

- Housing Industry Professionals
- Professional Organizations
- Teachers
- Students
- Affordable Housing Stakeholders
- Transaction Process Institutions

There are impressive building science education assets, but they act individually:

- Research Centers
- Universities/Colleges
- Certification/Training Programs
- Advocate Organizations
- Conferences/Events
- Technical Content
- Tools

Organize a Task Force to Lead the Following Key Actions:

- Quality Education and Practices
- Awareness of High-Performance Home Benefits
- Delivery Infrastructure

Quality of Building Science Education and Practices:

- Terminology and Standards
- University/College Programs
- Building Science Curriculum Content
- Building Science Professional Credentials
- Recognition of Credentialed Programs

Awareness of High-Performance Home Benefits:

- Targeted Audience Outreach
- University/College Outreach
- General Public Awareness

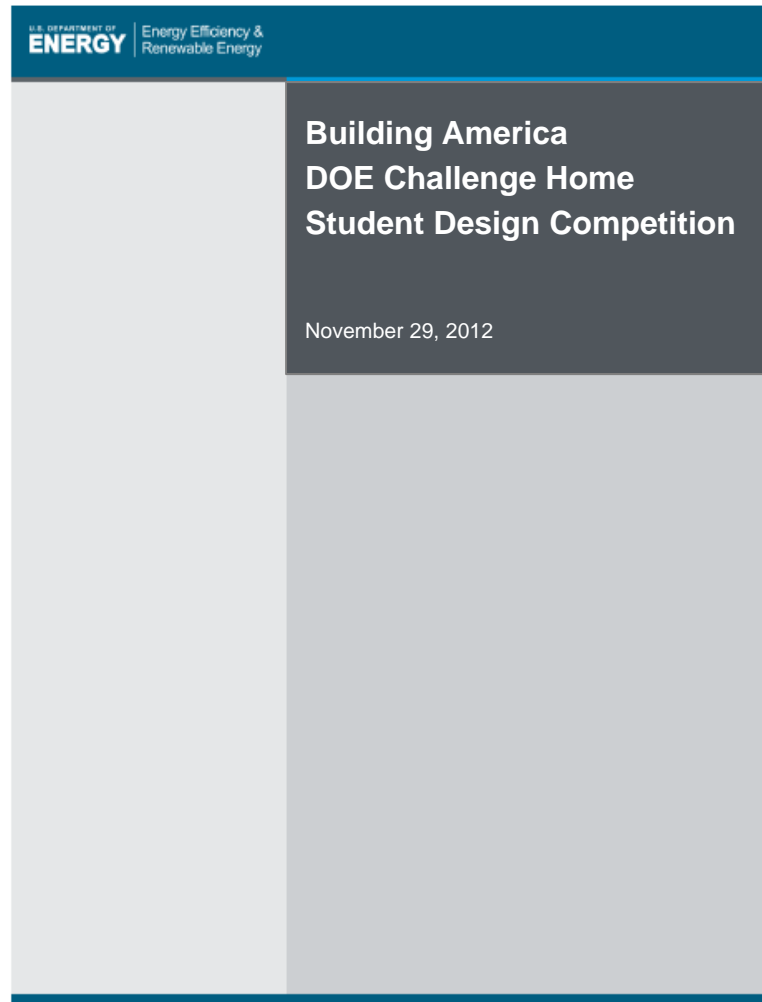
Delivery Infrastructure:

- Industry Event
- Information Sharing
- Resource/Program Development
- Building Science Accountability

Stakeholder Role:

- Participate in Action Groups
- Contribute Input
- Promote to Universities and Professionals

Student Design Competition



- Complement DOE's Solar Decathlon
- Emphasize Practical 'Shovel-Ready' Designs
- Substantially reduce participation costs with just design and technical documents
- Seek affordable housing sponsors committed to constructing winning projects
- Cornerstone of competition is to provide building science training to students

Comprehensive documents ensuring building science fully integrated in design:

- Technical Requirements
- Design
- Analysis
- Performance Metrics
- Marketing and Education

An impressive array of potential prizes including many no- and low-cost incentives:

- Student Participation Incentives
- Instructor Participation Incentives
- University Participation Incentives

Schedule for 2014 (Solar Decathlon off-year) with schools starting work fall 2013:

- Survey Existing Competitions
- Planning
- Training
- Implementation
- Outreach

Stakeholder Role:

- Promote to Schools
- Promote Winners
- Provide Training/Mentorship

Building America Agenda
Value Recognition

Transaction Process Summit



Organize a Task Force to Lead the Following Key Actions:

- Research
- Multiple Listing Services (MLS)
- Underwriting
- Appraisals

Research:

- Review Existing Evaluation Efforts
- Identify Gap in 'Value' Knowledge/Data
- Develop Research Road Map
- Promote UNC Study

Multiple Listing Service (MLS):

- Develop 'True Cost of Ownership' Calculator
- Convene a national MLS Summit to Develop Preferred Approach/Guide for Recognizing Value of High-Perf. Homes

Underwriting:

- Convene Govt. Sponsored Entities (GSE's) Meeting to Develop Preferred Policy Options for Recognizing Value of HPH's
- Pilot with 'Home Town' Banks on Discounted Interest for HPH's

Appraisals:

- Review Green Appraisal Addendum Form Implementation and Impact
- Develop 'Best Practices' for Implementing Green Appraisal Addendum Form
- Convene Appraisal Organization and Stakeholder Summit to Review 'Best Practices and Develop Consensus Implementation Process
- Promote SAVE Act

Underwriting:

- Convene Govt. Sponsored Entities (GSE's) Meeting to Develop Preferred Policy Options for Recognizing Value of HPH's
- Pilot with 'Home Town' Banks on Discounted Interest for HPH's

Stakeholder Role:

- Participate in Action Groups
- Promote Meetings and Summits
- Participate in Meetings and Summits

Collective Impact:

The commitment of Building America stakeholders to a common agenda for Zero Net-Energy Ready new and existing homes.

Thank You