



# ENERGY EFFICIENCY: Savings, Jobs, and Competitiveness

**Kathleen Hogan**

Deputy Assistant Secretary for EE  
Office of Energy Efficiency and  
Renewable Energy

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

# Energy Efficiency: Top Priority Energy Resource

Savings

Jobs

Competitiveness

Economy

Environment

**DOE Priorities**

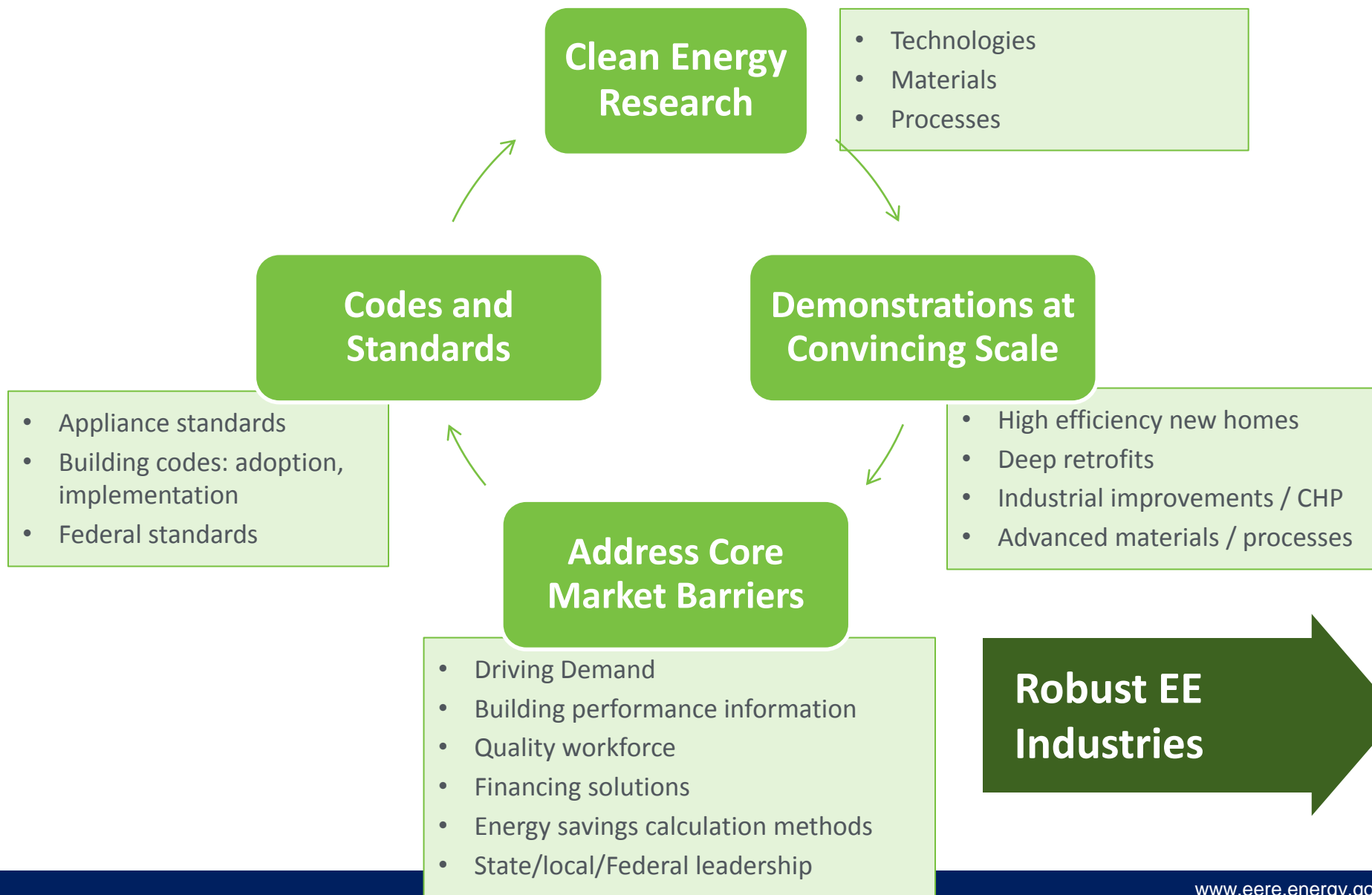


**Accelerating progress  
across technology pipeline**

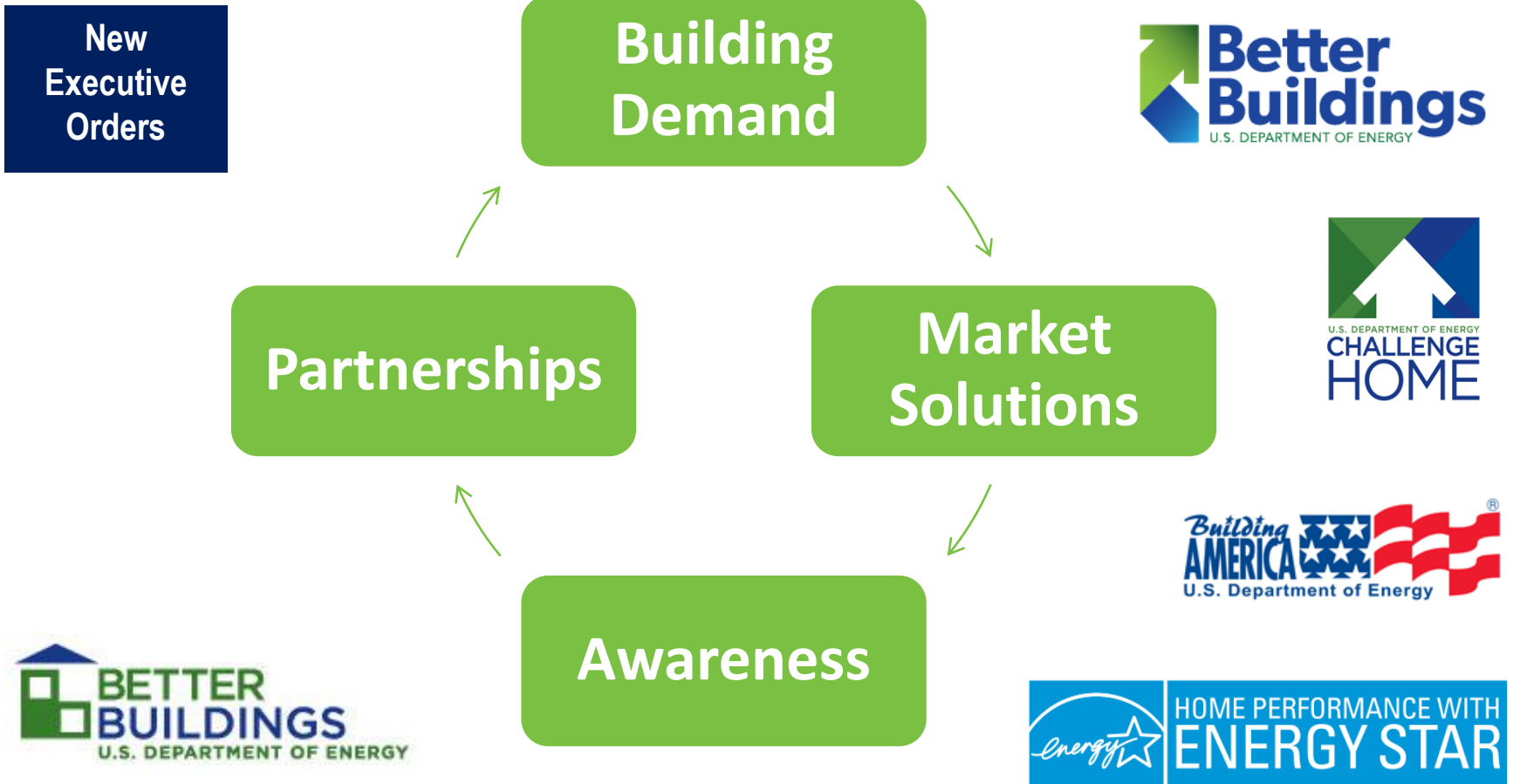
**Growing energy efficiency  
industry – adoption at scale**

**Growing clean energy  
manufacturing**

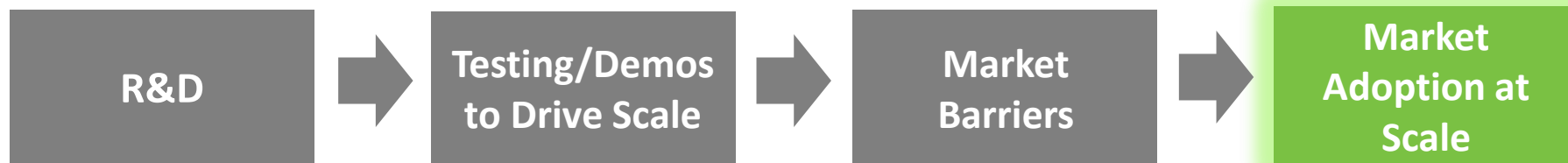
# Accelerating Progress



# Accelerating Progress



# Commercial Buildings Portfolio: Market Driven Approach to Saving Energy



Technologies

Product Specifications

Product Challenges



COMMERCIAL BUILDING ENERGY ASSET SCORE

Add'l Financing / Incentives

-- 179D tools

-- QECB

Advanced Energy Design Guidelines

Federal Leadership

Data Access / Measuring Savings

Workforce Development

# Better Buildings Challenge: Replicable Business Models

## GOALS:

- 20% savings in C&I buildings by 2020
- Replicable, demonstrated models across different organization types / ownership types / building types

## CHALLENGE:

- Partners commit to:
  - Set public energy savings goals
  - **Share implementation strategies and results**
- Financial allies commit financing \$
- Program administrators commit energy use data and multimeasure programs



### Better Buildings Challenge: Snapshot

Partners/Allies	Commitments	Progress
<b>Commercial</b> 48 Commercial real estate, healthcare, hospitality, retail, schools, university, state and county government	2 billion square feet 300 manufacturing facilities	53 showcase projects 48 implementation models identified
<b>Industrial</b> 10 Energy-intensive industries to light manufacturing		
<b>Community</b> 37 Municipalities and business		
<b>Financial</b> 14	\$1.7 billion in financing	\$800 million extended
<b>Utility</b> 3 Investor-owned and public power	Provide customers with easy access to energy bill data; help customers improve millions of building square feet	Update in spring
<b>Federal Agencies</b>	\$2 billion in projects	\$400 million awarded

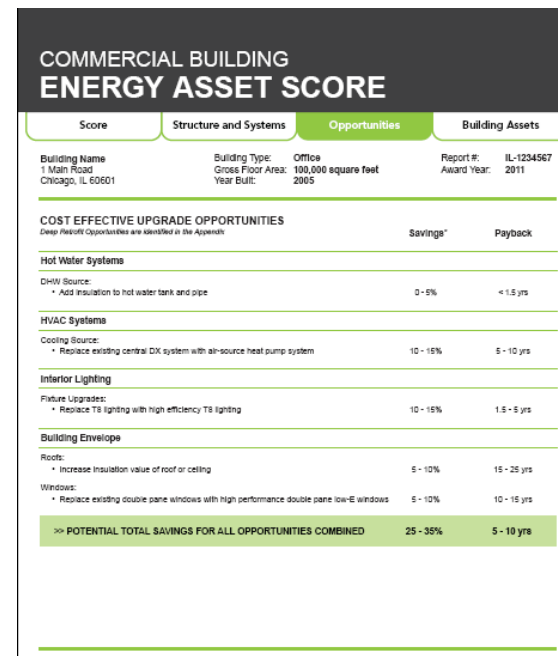
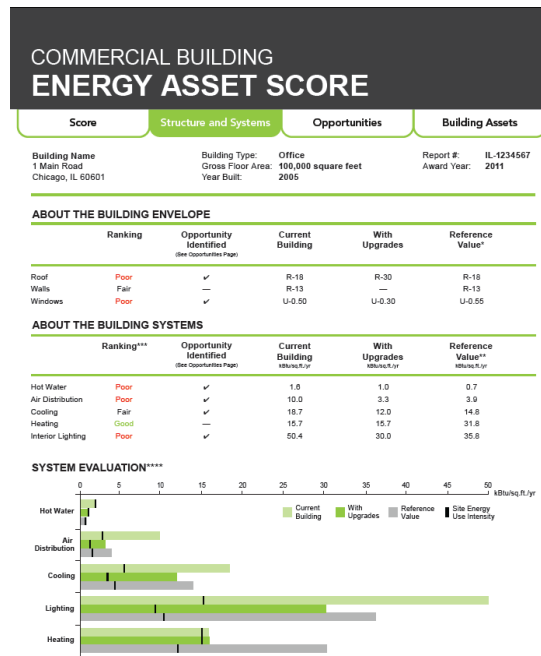
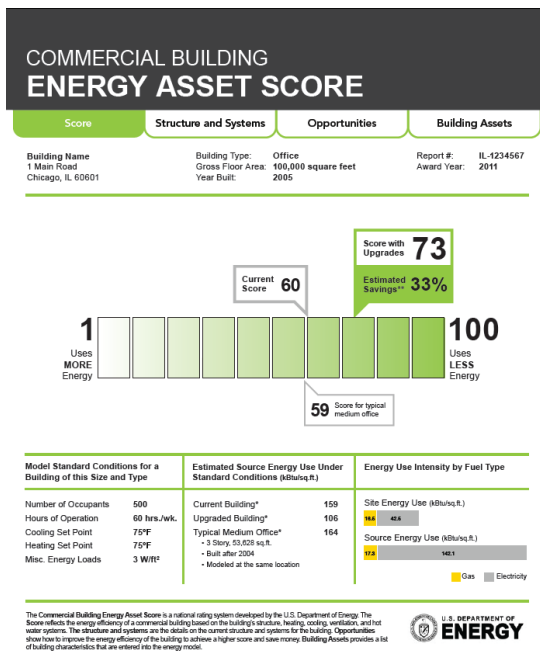
# Better Buildings Challenge:

## 2013 & Beyond

- \$5 B in investments and growing
- Hundreds of implementation models/replicable solutions linked to results
- Expanding the Better Buildings Challenge to under-represented sectors/barriers/solutions
- Utility focus
- Recognition of partner success
- Expanding the impact; getting actionable solutions/models out

# Commercial Buildings: Building Performance Information

- Assess building assets; assist appraisers; complement operational information
- Initial positive pilot complete for 4 building types; look for RFI and 2<sup>nd</sup> phase pilot





# Commercial Buildings: Utility Opportunities and Resources

## Technology Campaigns

- Lighting Energy Efficiency in Parking (LEEP) Campaign – thru 2014 ([www.leepcampaign.org](http://www.leepcampaign.org))
- RTU Early Retirement Campaign (later this year)

## Demonstration of Small Building, Service-Delivery of EnMS Program Pilot

- Scoping EnMS/continuous improvement programs based on ISO 50001
- Interested parties?

## Building Performance Database

- Tool backed by empirical data on the actual energy performance and physical and operational characteristics of commercial and residential buildings
- Continuing to aggregate data

## Standard Energy Efficiency Data (SEED) Platform

- Provides state/local governments and building owners/managers with easy, flexible and cost-effective means to collect and analyze energy performance data about groups of buildings and track compliance with energy disclosure laws

## Upcoming Commercial Buildings Funding Opportunities

- Will be available on <http://www1.eere.energy.gov/financing/index.html> in spring 2013

# Industrial EE and Combined Heat and Power (CHP)

**August 2012 Executive Order – Goal of 40 GW of new, cost-effective CHP by 2020**

## **Regional IEE/CHP Dialogues**

- State best practice policies and investment models that address barriers to greater investment in industrial energy efficiency and CHP

## **Clean Energy Application Centers (CEACs)**

- Engagement with utilities on program design, technical assistance, training, and awareness

## **EPA Boiler MACT Rule Compliance**

- DOE Technical Assistance for 14,000 major source boilers

## **Forthcoming Guide on Model Policies for CHP**

- SEE Action Industrial EE and CHP Working Group

# Industrial Energy Management

## Goal: Consistent, Effective, Low cost Industrial Energy Management Efforts to Capture Operational/Capital Savings

Harmonizing SEP and other industrial continuous energy improvement programs, EM&V and other common practices (building upon ISO50001)

- with Northwest stakeholders

Developing suite of user-friendly, online energy management resources

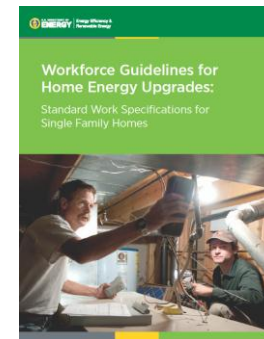
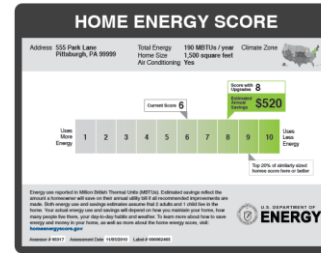
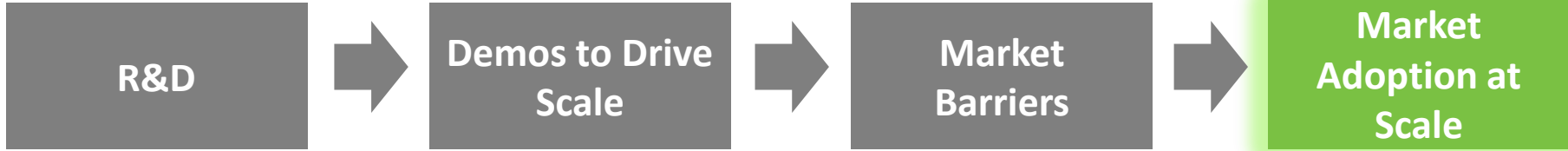
- eGuide for ISO 50001 implementation
- eGuide Lite (for small-medium sized manufacturers)
- EnPI plant-wide, statistical energy performance measurement and reporting tool

CEE efforts to improve consistency and pursue standard program offerings for utilities and Administrators

Assisting CA SEP Demonstration Pilot in response to CA PUC requirements for Continuous Energy Improvement (CEI) offerings

Looking for opportunities to expand regional approaches (ala NW Strategic Energy Management Collaborative )

# Residential Buildings Portfolio: Market Driven Approach to Saving Energy



# Residential Market Opportunities: Technology Research Priorities Road-Map

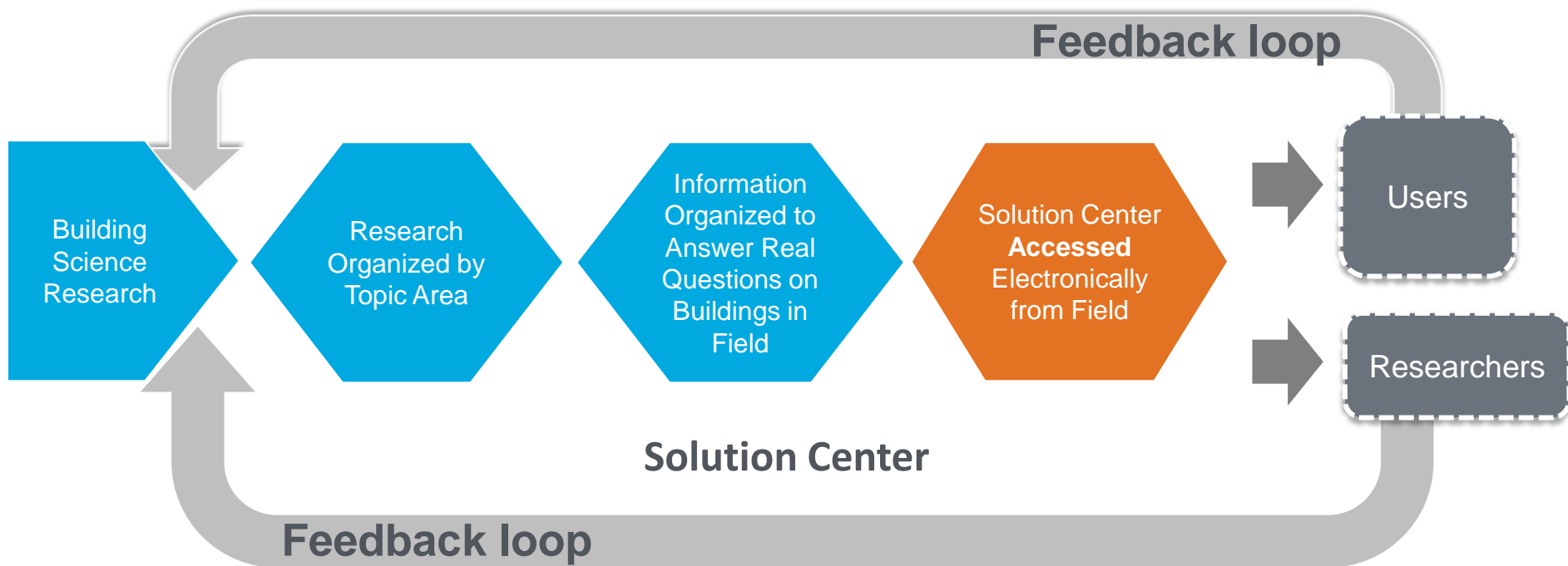
***DOE Challenge Home: At least 40%-50% more energy efficient than a typical new home; verified by a qualified 3<sup>rd</sup> party .***



# DOE Tools for Builders, Contractors, and EE Researchers



*Building America Solutions Center App will be available end of January 2013*



# Better Buildings Neighborhood Program Grantees Selected for Impact and Diversity of Project

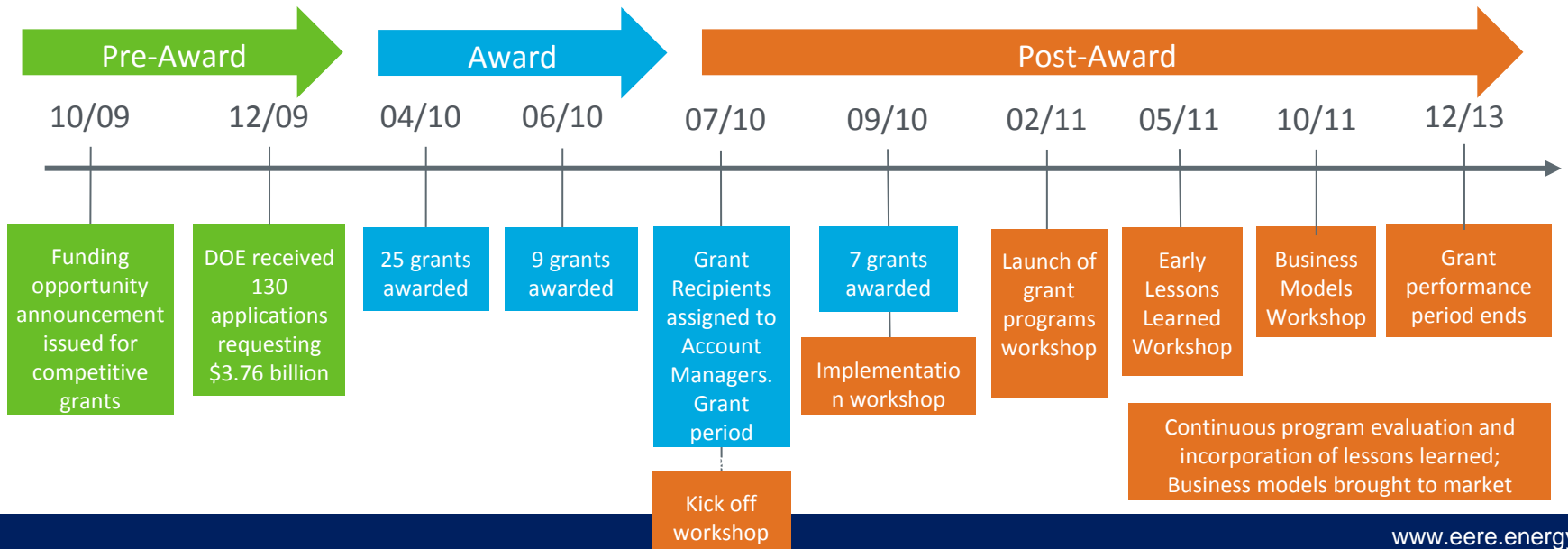
## Overview & Selection Criteria

- 3-year grants of \$1.5 to \$40 million each
- 41 Grant Recipients
- Financial Leverage and Program Sustainability
- Project Impact
- Program Approach
- Partnership Structure and Capabilities

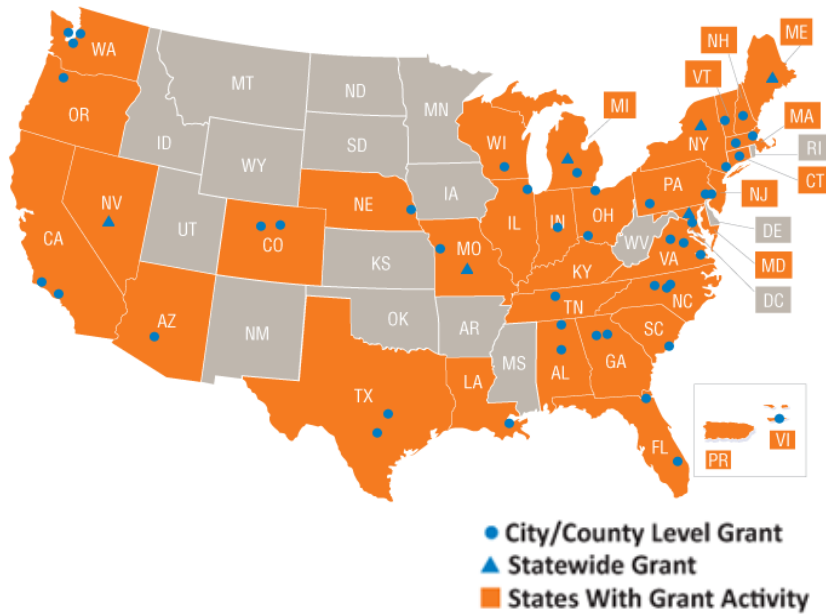
## Demographic Diversity

- 31 states; 7 state-wide programs
- 4 programs span a region or group of locations
- Many programs focus on neighborhoods within a city
- Rural and urban mix
- Socioeconomic mix
- All climate zones covered

## Many Building Types Being Upgraded



# Better Buildings Neighborhood Program Tests New Approaches

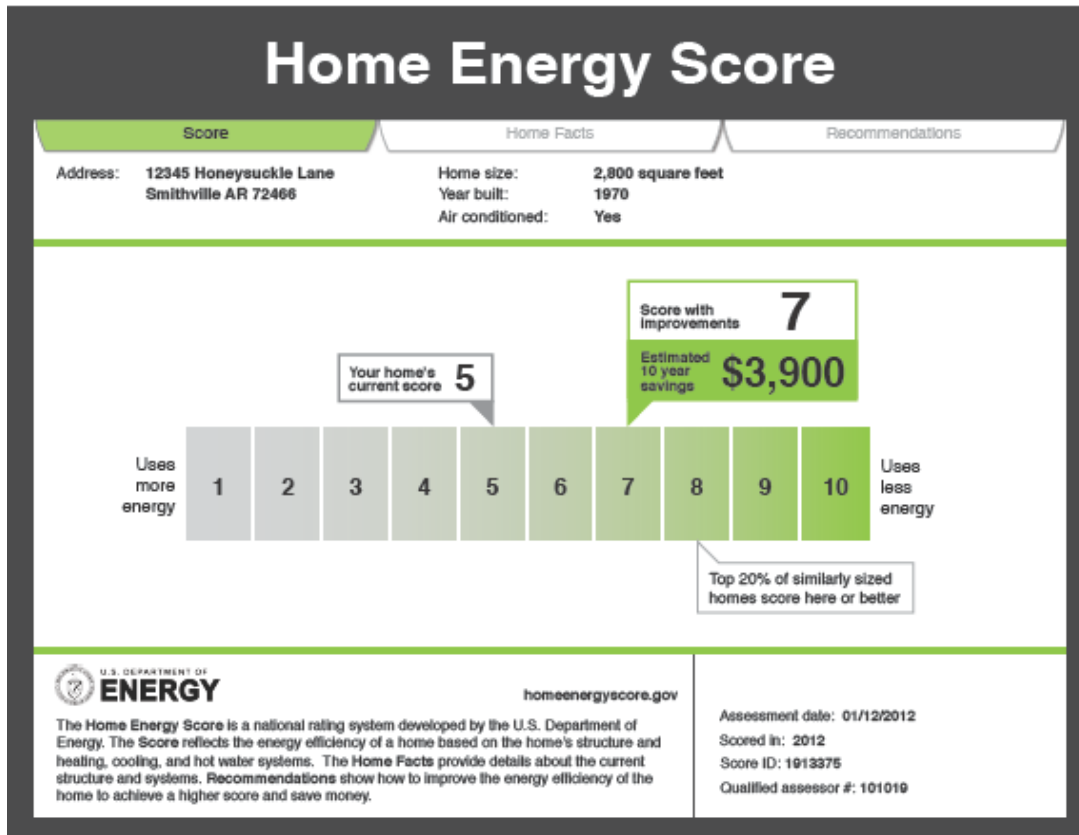


Driving Demand	Financing	Data and Evaluation	Workforce Development
22 Different Approaches	21 Combinations	12 Evaluations Being Performed	9 Models Being Tested

*Better Buildings Neighborhood Program Web-Based App available late fall 2013*



# Home Energy Score



- Quick (1-hr), inexpensive (~\$100) web-based audit
- Motivate home improvements
- Allows homeowners to compare the energy efficiency of their homes to other homes in their climate zone
- Can be easily integrated into any utility's program (and labeled under utility program name)
- Will be launched nationally this spring

# Guidelines for Home Energy Professionals

## Standard Work Specifications (SWS)

- Define the minimum requirements for high quality work
- Reference technical codes and standards

*Single Family Home SWS avail. Q1 2013 / Manuf. Housing and Multifamily avail. June 2013*

## Effective Training

- Job Task Analysis (core competencies)
- Voluntary training program accreditation

*Training Program Accreditation has been available since May 2011*

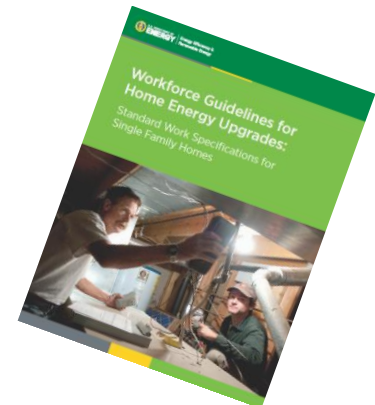
## 4 New Home Energy Professional Certifications

- Accredited to ANSI/ISO 17024 Standard
- Supported by DOE and NREL, developed by industry, administered by BPI

*Completing pilot phase; will be available to market spring 2013*

## Better Workforce Industry and Opportunity

*Guidelines were written in collaboration with 2,000 home performance industry members and with 30+ years of DOE weatherization experience.*



# Home Performance with Energy Star



Home Energy Assessment



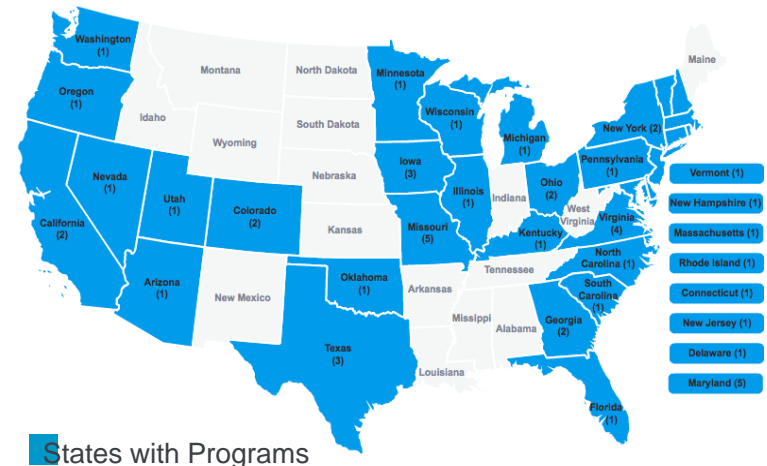
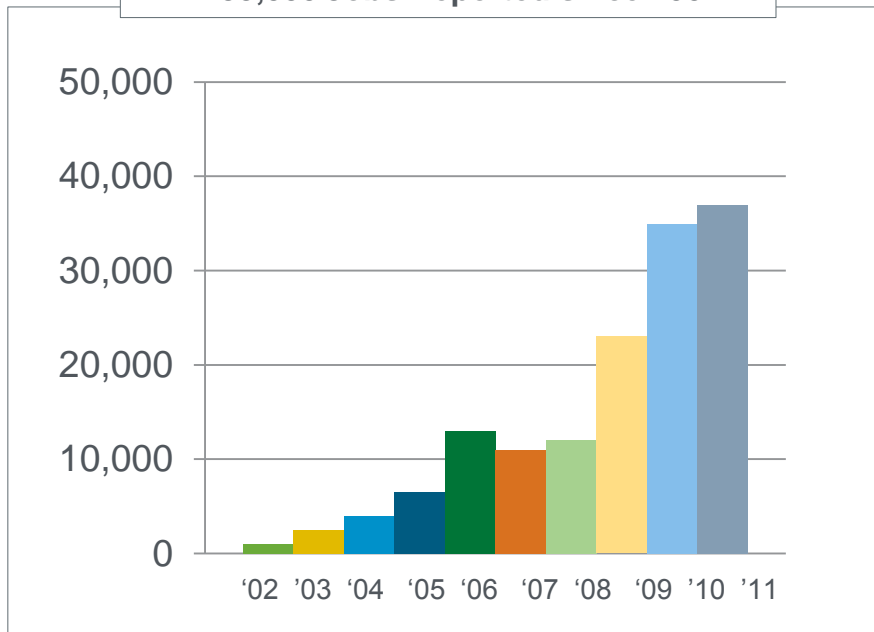
Installation



Verification

- *Encouraging more participation*
- *Providing hands-on technical services to partners*

~ 135,000 Jobs Reported since 2002



# Solar Decathlon



Solar Decathlon 2013 will combine home energy efficiency efforts in one great event held in the Great Park in Irvine, CA.

# Uniform Methods Project (UMP)

## Purpose: Uniformity/Transparency in Energy Savings Calculations for EE Programs

- Savings estimates for identical measures vary widely with no clear explanation of why
- Widespread use of UMP protocols could provide consistency across Technical Reference Manuals (TRMs)

## Plan: Develop/Publish 15-20 Protocols for Savings Calculations of EE Measures

- Address most common residential and commercial efficiency measures in incentive programs
- Present step-by-step calculations for determining gross savings

## Collaboration: Developed with EM&V Industry and Major Energy Efficiency Stakeholders

- Including the major U.S. firms that do as many as 70% of energy efficiency evaluations
- Industry review process allows for input from large array of stakeholders; 636 comments from 46 organizations

- *7 Energy Efficiency Protocols will be publicly released by end of January 2013*
- *Opportunity to lead in adoption/use of protocols in the energy efficiency industry*
- *Learn more at [www1.eere.energy.gov/office\\_eere/de\\_ump.html](http://www1.eere.energy.gov/office_eere/de_ump.html)*



# Energy Bill Data: Key Building Block for Successful EE

## Data Access and Privacy – Voluntary Code of Conduct

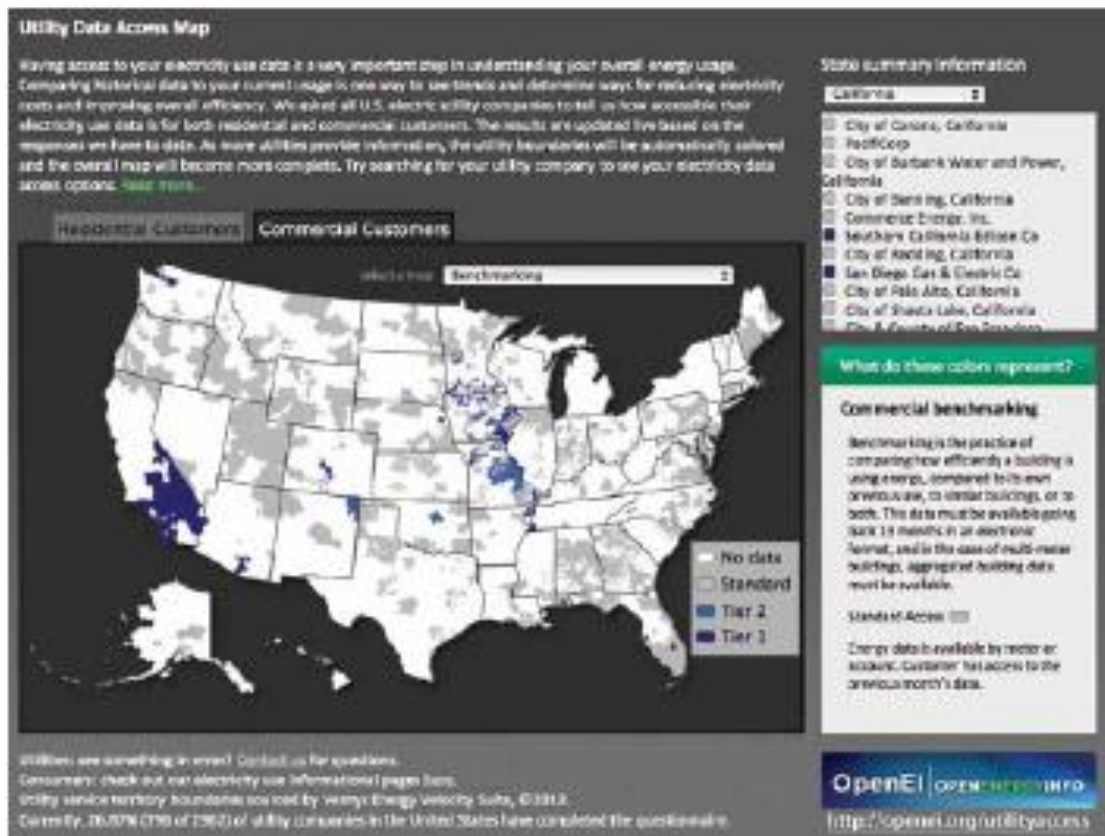
- A stakeholder developed, transparent code that will address how entities manage customer data

### Green Button

- Standardized data access
- Commitments from ~ 20 utilities representing ~30 million households

### Utility Data Access Map

- Interactive Web platform that enables electric utilities to show customers, in a simple way, the data they can access on their electricity use
- Access it at [www.openei.org/utilityaccess](http://www.openei.org/utilityaccess)



# State and Local Policies:

## Building Energy Codes

### Goals:

- Better Codes for Increased Energy Savings
- 70% Initiative for Increased Adoption (40 states by 2015)
- 90% Compliance by 2017

### Opportunity for utilities to meet energy savings goals

- Code compliance levels are below 100% level,
- Offers opportunity for utilities who significantly improve code compliance

### DOE Assistance -- Standardized Tool by September 2013

- Estimate potential energy savings from increased energy codes compliance
- Provides a standardized approach for estimating savings
  - Uses basic data on projected residential and commercial sqft growth, energy mix (e.g., fuel source for heating), and target compliance rate
  - Calculation engine (peer reviewed, publicly available) estimates the energy savings from increased compliance with code
  - All info presented in simple concise format and in units relevant to utilities (e.g., therms and kWh)

# SEE Action: State and Local Policies

- Network of 200+, led by state and local policymakers, bringing EE to scale
- Facilitated by DOE and EPA; builds upon the National Action Plan for Energy Efficiency
- Provides best practices and recommended approaches on key EE policy/program areas based on state/local experience
  - Guidance Documents
  - Trainings
  - Dialogues and Events
  - Technical Assistance



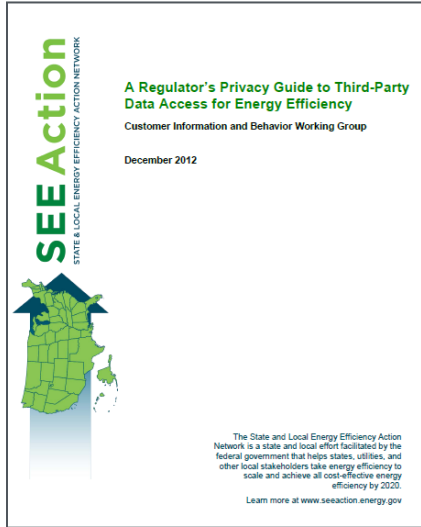
Sign up for news alerts

[www.seeaction.energy.gov](http://www.seeaction.energy.gov)





# SEE Action: Selected Efforts



- Energy Efficiency Program Impact Evaluation Guide
- Privacy Guide to Third-Party Data Access for Energy Efficiency
- Using Integrated Resource Planning for Cost-Effective Energy Efficiency
- Energy Benchmarking, Rating, and Disclosure for Ratepayer-Funded Programs

*Search all 40+ publications at [www.seeaction.energy.gov/publications](http://www.seeaction.energy.gov/publications)*



## IEE/CHP Regional Dialogue Meetings

More information at [www.yesevents.com/se\\_iee\\_chp](http://www.yesevents.com/se_iee_chp)

*January 24, 2013, Little Rock, AR; March 13, 2013, Baltimore, MD*

## Regional Regulatory Policy Games

More information at [www1.eere.energy.gov/seeaction/rpg.html](http://www1.eere.energy.gov/seeaction/rpg.html)

*Southeast and Northeast/Mid-Atlantic Games coming soon*

# Working Together

- **Strengthening Partnerships**
- **Implementing Pilots/Solutions**
- **Sharing What is Working**
- **Finding New Opportunities**



- **Robust Energy Efficiency Industry**
- **Market Adoption of Advanced Technologies**
- **Stronger Economy; Improved Environment;  
Increased Competitiveness**