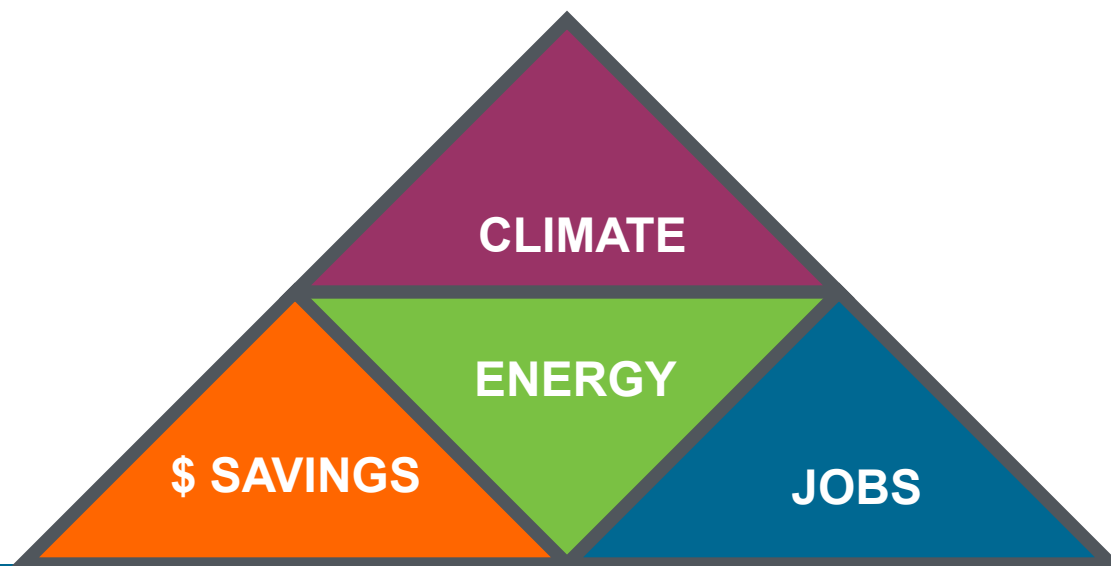


National Building Performance & Rating Program: Residential Efforts

Stakeholder Webinar
March 9, 2010

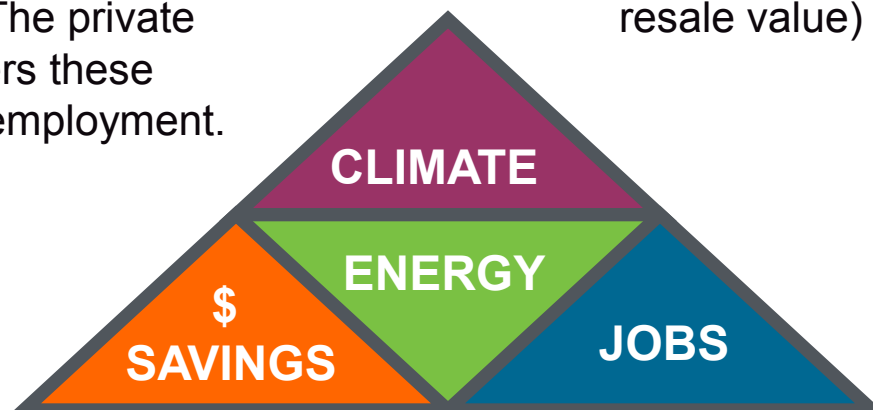


Why does the U.S. need a national program?

Energy and dollar savings; climate protection, and jobs

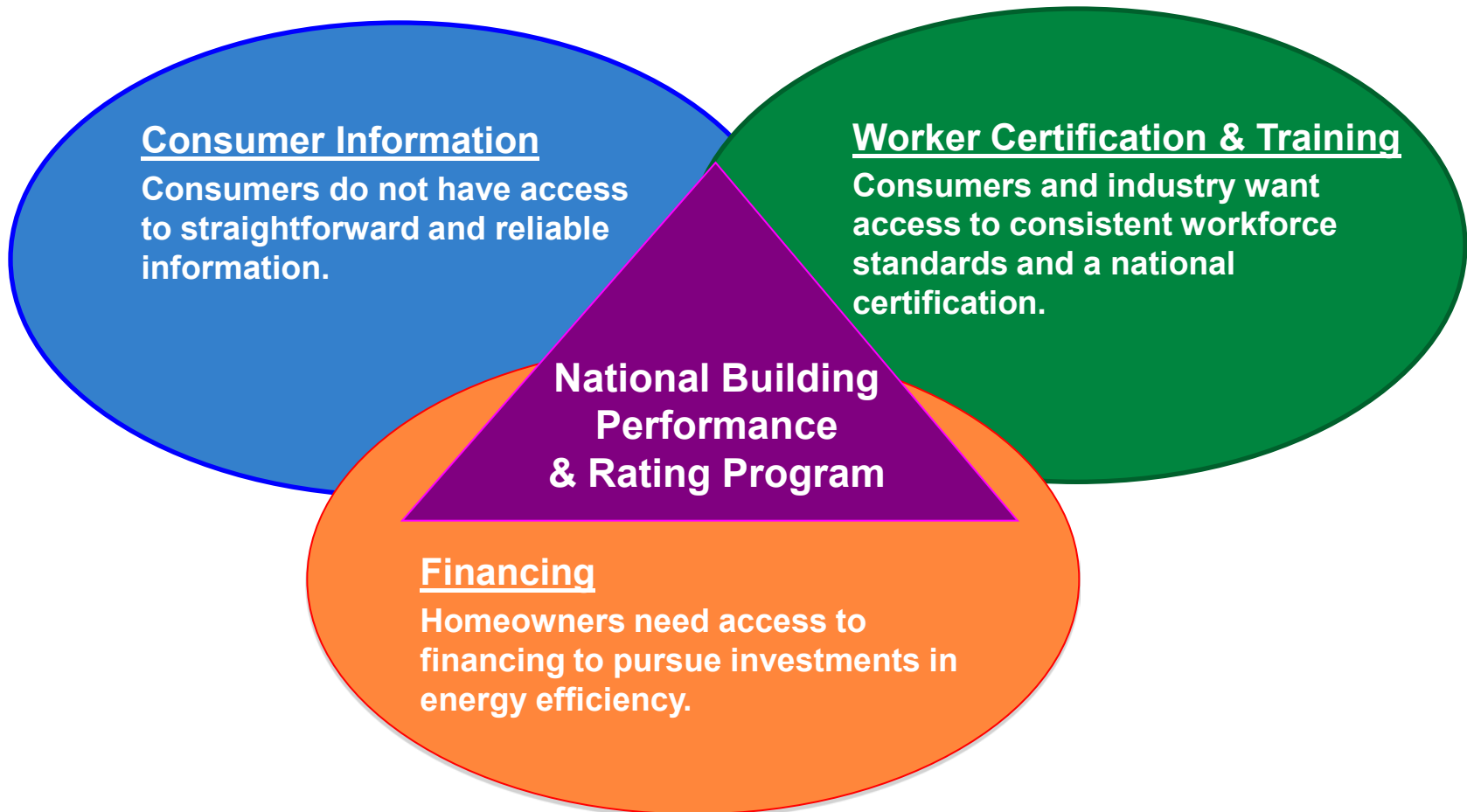
Buildings account for approximately **40%** of US energy use.

- Cost-effective, energy-saving, improvement opportunities exist and go far in protecting the climate.
 - 20+% per household
 - 20+% per commercial building
- As the Weatherization Assistance Program's funding under the Recovery Act ramps down, many weatherization workers will need to transition to other work. The private sector retrofit market offers these workers potential future employment.
- Clear, credible, consistent, and readily available information on building energy performance is critical to ramping up investment in energy-saving and cost-effective improvements.
- A national home energy label and rating can encourage consumers and banks to account for energy performance in the valuation (and resale value) of homes.



What are the market barriers?

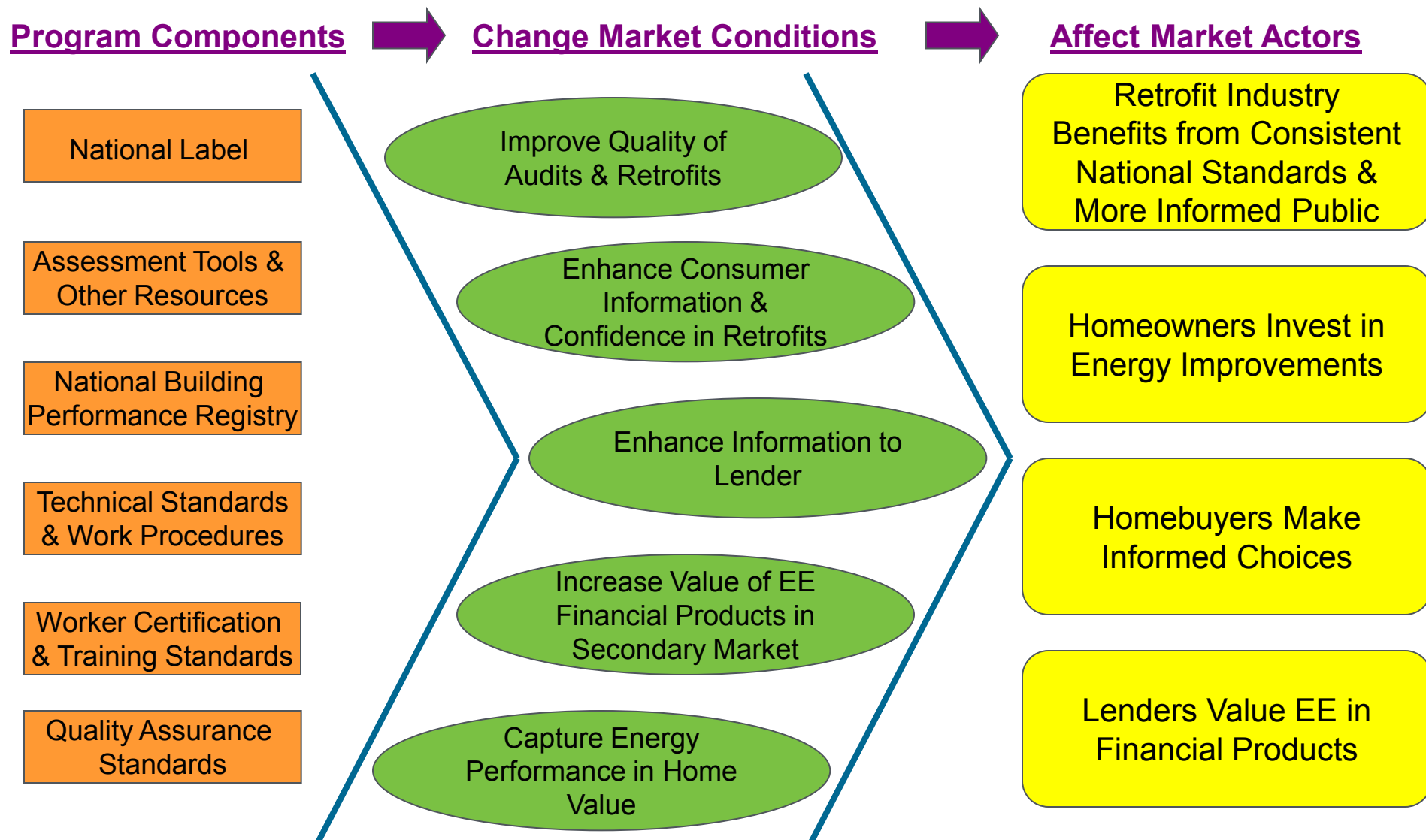
The Recovery thru Retrofit effort identified the following three major market barriers:



How can DOE help address these market barriers?



How can we positively influence the market?



Proposed Components of National Program

- National Home Energy Label
 - Standard performance rating (i.e., consistent metric and method)
 - Basic, consistent framework for national component of any label
 - Can be customized by states, local governments, other adopters
 - Publicly available tools and resources
 - Home Energy Saver PRO (HES PRO) (LBNL)
 - National Measures Database (NREL)
 - Other resources as needed
 - Technical standards and standard work procedures
 - Energy Assessments
 - Energy Audits
 - Energy Retrofits
 - Worker certification and training standards
 - Auditors, assessors, retrofit workers
 - Quality assurance standards for all points in the process
 - National Building Performance Registry
 - Repository for information from labeled homes
- Multiple Purposes: Program will be designed to help consumers at multiple entry points
- Financing prerequisites: The program will be designed to satisfy the information needs of private lenders and public financing programs in order to encourage greater financing of retrofits.

Timeline Overview

Phase 1: Research existing residential energy labeling programs and studies

Phase 2: Develop and present preliminary program design

- Design will incorporate best practices identified in Phase 1
- DOE will solicit input from stakeholders at various forums to inform the final program's design

Phase 3: Pilots

- Conduct pilots to inform program design (e.g., FHA/HUD pilots will help DOE better understand how a label and program components need to be designed to meet the needs of the financial community)

Phase 4: Launch National Building Performance & Rating Program for homes

- Coordinate with states and other stakeholders to ensure consistent information dissemination
- Support other organizations in implementation of certain functions (e.g., quality assurance, certification, accreditation)
- Include process for continuous improvement

Progress to Date: Phase 1

- Gather information about existing home retrofit, labeling, auditing, and rating programs; identify successful elements
 - US: national
 - US: state and local
 - International
- Review existing studies
 - Northeast Energy Efficiency Partnerships (NEEP) Report
 - Energy Trust of Oregon
 - Earth Alliance
 - Newport Partners
 - Others

What DOE Has Learned to Date

- A national program must allow flexibility at state and/or local level, while providing consistency across the nation
- An effective program should positively influence consumers regardless of how they enter the retrofit market
 - Homeowners
 - Interested in an audit and/or retrofit
 - Purchasing related equipment or service (e.g., new appliance)
 - Remodeling
 - Home buyers and sellers
- A national program should support the retrofit work already being conducted by the private sector and Weatherization network
- A national rating should likely
 - reflect a uniform metric allowing comparisons
 - be generated by trained 3rd parties
 - be neutral to number of occupants or occupant behavior
 - have a sufficient level of accuracy at a reasonable cost
- A “label” should be comprised of a sticker as well as back-up information, and likely include...
 - a national rating
 - recommendations for building improvements with estimated savings
 - on-line information linked to a national building performance registry

The U.S. needs a national, comparable asset rating

Many stakeholders favor a rating system that is:

- 1) national in scope; 2) performed by trained third parties; and
3) provides a score which is comparable across homes.***

“It’s nice to have something that’s recognized nationally. It lends credibility.”

– *Utility*

“The main thing is the rating has to be consistent so you can compare apples to apples; otherwise it gets confusing for home owners. Need one single data that all people use in their market.”

– *Real Estate Professional*

“The rating industry needs to be on a national scale, so big banks and big retailers and secondary markets can approach the market. Just like why the car companies don’t want state standards so they don’t have to make 50 cars, lenders will want a national system.”

– *Finance*

“In Pacific NW [consumer market research], 89% said that a rating score on a home would be a marketing advantage. Many said they would like to see it on MLS. “

– *EE Program Administrator*

From “*User Needs & Requirements for Residential Energy Ratings*”, DOE/Newport Partners

Home energy ratings must be accurate and reliable

The gap between predicted (modeled) energy use and actual energy use is a concern.

“In real estate we like data and information. The homeowner might start at a lower level [energy rating]. But, we will need HERS or something that is consistent.”

– *Real Estate Professional*

“Utility is looking to cut 50 megawatts over the next 5 or 6 years. Need to see results not just modeling.”

“Something we learned from an evaluation of 100 ratings pre and post. .. it was amazing how many individuals in their mind did a lot of work. We did a post-retrofit test, and there was no change in air leakage in what they thought they did.”

– *Utility*

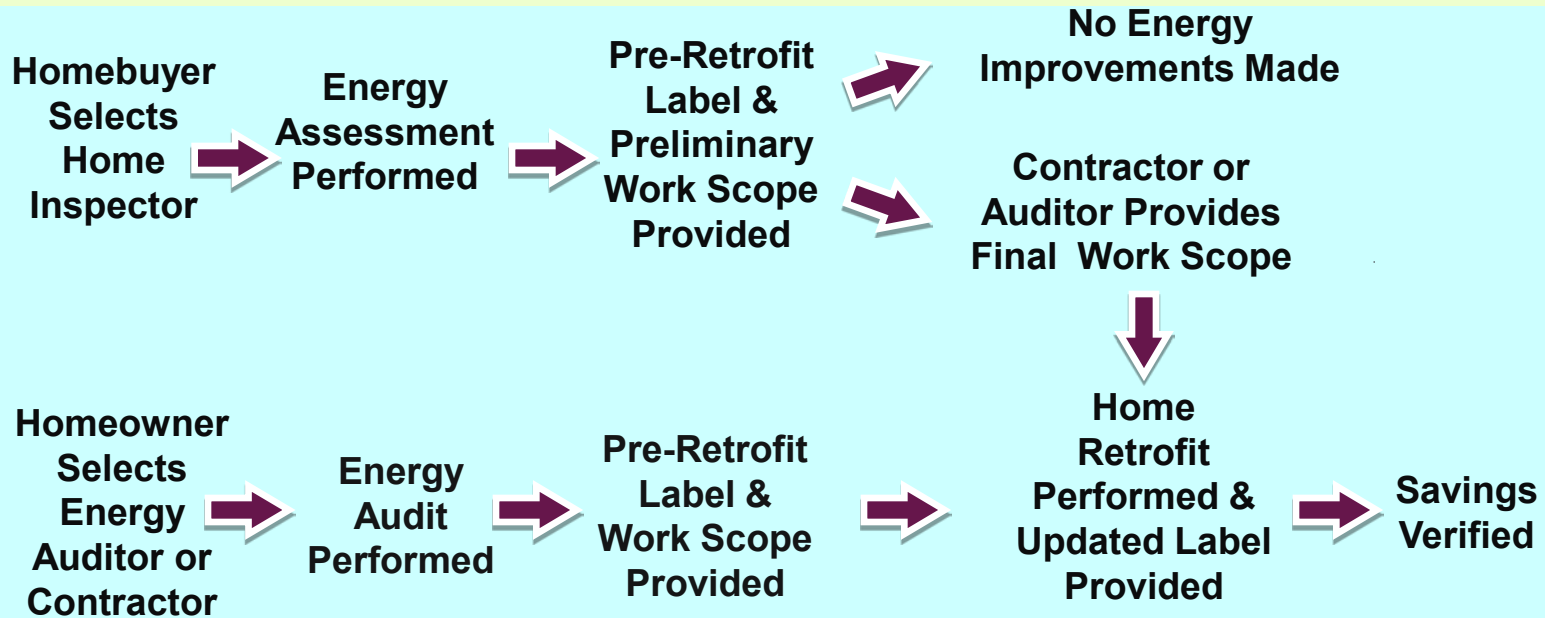
“If you’re basing incentives on it [the energy rating] but you’re off, you get in trouble. There has to be a level of accuracy. Accuracy is important.”

– *EE Program*

From “*User Needs & Requirements for Residential Energy Ratings*”, DOE/Newport Partners

Supporting Home Retrofits

Home Retrofit Process



National Building Performance & Rating Program (for homes)



Proposed Long-Term Implementation

DOE will:

- Implement the program in partnership with states, local governments, industry, and other organizations
- Support existing retrofit industry
- Support external organizations to --
 - Certify workers
 - Accredited training programs
 - Conduct quality assurance
- Continue to improve the program
- Develop comparable program for new and existing commercial buildings

| DISCLOSURE POLICIES: NBRP (DOE) AND STATE ROLES | | |
|---|--|--|
| BASIC INGREDIENTS | NBRP (DOE) Role | STATE Role |
| 1. ENABLING LEGISLATION | --- | Lead |
| 2. RATING SYSTEM | Lead | Engage and monitor to ensure system fully supports state needs |
| 3. RATING SYSTEM MANAGEMENT | Lead | |
| 4. TRIGGER POINT | --- | Lead |
| 5. DATA COLLECTION AND REGISTRY | Lead | Engage and monitor |
| 6. ENFORCEMENT | --- | Lead |
| 7. RATER INFRASTRUCTURE | Residential - Lead Commercial - TBD | Residential - engage Commercial - TBD |
| 8. PHASE-IN STRATEGY | --- | Lead |
| 9. LINK TO INCENTIVE PROGRAMS | Facilitate | Lead |

From “Valuing Building Energy Efficiency Through Disclosure and Upgrade Policies: A Roadmap for the Northeast U.S.,”
Dunsky Energy Consulting for the
Northeast Energy Efficiency Partnerships

National Building Performance & Rating Program -- Residential Timeline with Key Deliverables

| | Deliverable | Deadline |
|---|--|---|
| General | Energy Trust of Oregon/ACI/BPI Labeling Summit DOE/home inspectors meeting Research existing programs & studies Present draft program design Launch National Building Performance and Rating Program (residential)* Continuous program improvement Request for Information (RFI) on performance metrics, label | January 2010 February 2010 March 2010 June 2010 September 2010 Ongoing April/May 2010 |
| Pilots | Investigate opportunities for field tests Roll out DOE/FHA pilot | March - December 2010 March 2010 |
| Technical Standards, Standard Work Procedures & Best Practices | Develop best practices for attic insulation and duct sealing Develop Standard Work Procedures for energy assessments Establish quality assurance protocols Establish standard work procedures for retrofit measures | February 2010 April 2010 August 2010 Ongoing |
| Workforce Certification & Training Standards | Inventory existing certifications for auditors, retrofit workers Release draft certification & accreditation standards* | April 2010 September 2010 |
| Tools | Completed alpha version of HES PRO Updated retrofit cost database Integrate revised cost assumptions into HES PRO Solicit feedback on HES PRO Complete beta version of HES PRO* Collect data for National Building Performance Registry | December 2009 January 2010 February 2010 March 2010 April 2010* Ongoing |
| Performance Metrics/Label | Develop performance metric options and recommendations Draft home energy label options with recommended information | April 2010 June 2010* |

* Denotes "Recovery through Retrofit" activity

http://www.whitehouse.gov/assets/documents/Recovery_Through_Retrofit_Final_Report.pdf

Topics for Further Study

| Question | Pilots | DOE Research |
|---|--------|--------------|
| ACCURACY | | |
| How accurate does an assessment, rating, and work scope need to be to satisfy FHA's needs? | ✓ | |
| How accurate is Home Energy Saver PRO? | ✓ | |
| What is the optimal set of building parameters needed to accurately determine building energy use, while minimizing the cost and level of effort required to perform home audits? | ✓ | |
| What data is there regarding post-retrofit savings? | | ✓ |
| At what point in the process should health and safety issues be identified, home occupants educated, and issues remediated? Who performs these services? | | ✓ |
| DATA | | |
| What types of information should a National Building Performance Registry collect and provide access to? | | ✓ |
| How can data exchange be facilitated? | | ✓ |

Topics for Further Study (continued)

| Question | Pilots | DOE Research |
|--|--------|--------------|
| PERFORMANCE METRIC / LABEL | | |
| How should a consistent performance metric be structured? Absolute vs. relative; use of models and energy bills; site versus source | | ✓ |
| What types of information and display should be supported? Energy use, energy costs, carbon, retrofit measures? | ✓ | |
| What should verification requirements be? | | ✓ |
| Are there limitations on what inspectors will be able to do in terms of generating a label vs. what auditors or other contractors can do? | ✓ | |
| What types of information and display motivate <u>homeowners</u> to get home energy improvements? | ✓ | ✓ |
| What types of information and display will most effectively motivate <u>homebuyers</u> to consider and act on a home's energy performance as part of their purchasing transaction? | ✓ | |
| QUALITY ASSURANCE | | |
| What are the best ways to carry out quality assurance at all points in the energy retrofit process? | | ✓ |
| What entities are best suited to uphold quality assurance standards? | | |

Next Steps

- Provide Feedback on Webinar Topics
 - The following email address will be monitored for one week after each webinar: buildingratingwebinars@ppc.com
- Stakeholder Engagement
 - Session on overall approach at ACI Conference, Tuesday, April 20
 - Topic-oriented webinars in May, July, and September
 - Request for Information (April/May 2010)
 - Expected to cover performance metrics, label
 - Meeting on workforce certification and training program accreditation (May 2010)
 - Additional forums to be planned
- Develop and Initiate Pilots
 - HUD/FHA pilot under design; expect to begin in April