



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy



Energy Efficiency: Progress and Next Steps

NASEO Annual Meeting

September 13, 2011

Kathleen Hogan

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

EE Priorities

• **Federal Policies**

- R&D
- Test procedures / Appliance Standards
- Support ENERGY STAR

• **Building codes**

• **EE markets/services**

- Residential Retrofits
- Commercial Retrofits
- Industrial Improvements

• **State/local Policy**

• **Education/ Outreach**

Spend ARRA funding quickly & effectively

Build EE infrastructure for longer term (post Recovery Act)

Take EE to scale & create a new EE economy

Create Jobs

Save Money

Enhance Competitiveness

EE is fastest, cheapest, largest, way to save energy and build jobs

EE can save 20% of energy use -- \$200 Billion/yr – with 700,000 jobs

Advancing EERE Portfolio: Recent Funding Awards

Sunshot Initiative - \$145 million, 24 states

- Improve solar materials, manufacturing processes, supply chains
- Streamline building codes, zoning, permitting rules

Renewable Energy Research, Development and Deployment: \$110 million

- Hydropower - \$17 million, 16 projects (11 states)
- Geothermal - \$38 million, 32 projects (14 states)
- Offshore wind - \$43 million, 41 projects (20 states)
- Biofuels - \$12 million, 3 projects (3 states)

Electric Vehicles - \$15 million in 24 states

- Clean Cities: EV deployment and infrastructure
- Graduate Automotive Technology Education (GATE): workforce training, commercialization

Recovery Act Success

- **Total OWIP Funding (WAP, SEP, EECBG): \$11.3 billion**
 - More than 24,600 jobs created/ maintained
 - Over 500,000 homes weatherized
- **SEP: \$3.1 billion**
 - Over 50% of funding expended; 6 states have spent more than 75%
 - \$530 million in Revolving Loan Funds; 40+% expended; \$200+ million in loans
- **Between April 1 and June 30, 2011:**
 - 4,800 jobs
 - billions kWh in energy savings
 - 110 MW of solar PV installed
 - 15,000 buildings (240 million square feet) upgraded

Challenge: Transitioning from ARRA investment:

- High impact ARRA funding
- Growing impact of financing programs
- Building EE industry beyond ARRA

Growing the Efficiency Economy; Enhancing Competitiveness

- Better Buildings: New Residential and Commercial / Industrial Business Models
- Appliance Standards and ENERGY STAR
- Building Energy Codes
- Residential EE Industry Support
 - Home Energy Score Program
 - Workforce Guidelines
 - Financing
- Commercial / Industrial EE Industry support
 - Asset Rating
 - Superior Energy Performance
- State / local government assistance
 - Community Energy Strategic Planning Academy
 - SEE Action Network
 - SEP Competitive FOA

Better Buildings Initiative: Challenge

Goals for Commercial Sector:

- 20% improvement and \$40 billion in savings in commercial buildings by 2020
- Reform outdated incentives and challenge private sector to act.

Challenge:

- Leadership opportunity for CEOs, Univ. Presidents, Governors, Mayors, and industry
- Engaging Portfolio Partners, Community-based Partners, Financial Allies
- Challenge partners commit to:
 - Set public energy savings goals
 - Announce innovative strategies
 - Undertake showcase project
 - Share information on implementation strategies and results as models for others to use
- Financial allies commit to provide financing
- DOE supports and recognizes partners
- Formal launch of program this Fall

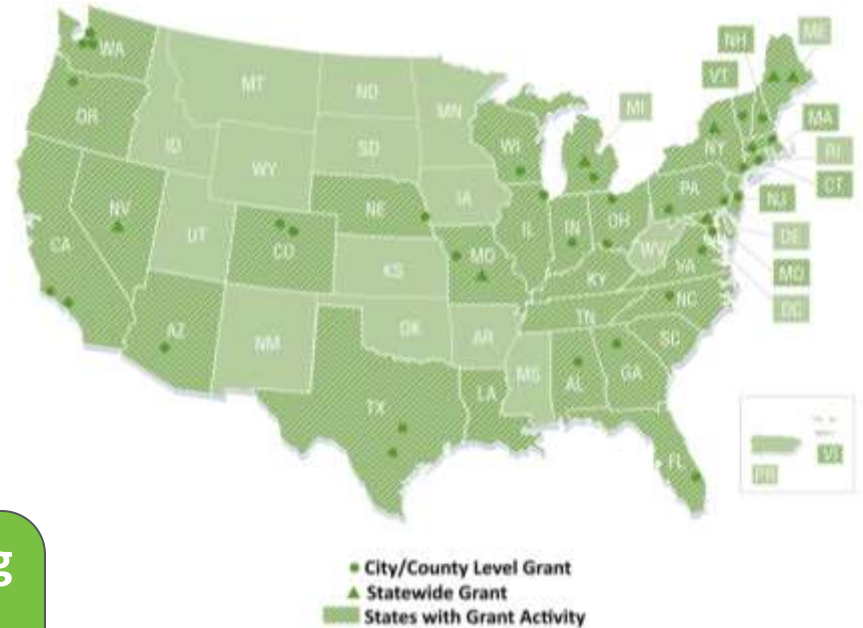
June soft launch

- 300 million sq ft
- \$575 M committed in financing

BetterBuildings Residential

Overview

- 32 States
- 41 3-year grants of \$1.5 to \$40 million each
 - 34 grants start Year 2 this summer
 - 97% launched by this spring
- Retrofits Target:
 - 160,000 residential (single and multifamily)
 - 10,000 commercial, agricultural, public



Driving Demand

→ 32 Different Approaches

Financing

→ 21 Combinations

Developing Effective Service Delivery Business Models

Workforce

→ 9 Models Being Tested

Data and Evaluation

→ 12 Evaluations Being Performed

Progress and Next Steps

- 2011: ~ 9,000 retrofits through June
- Sharing / Improving:
 - Feb. Start-Up Lessons Learned Workshop
 - May: “What’s Working” Workshop
 - 5 case studies released
 - October: Business Models Workshop

Appliance Standards Program

Background

- Nationally legislated to address state-by-state patchworks
- Covers over 50 products
- Helping avoid need for up to **30 power plants** (energy consumption of Spain)
- Consumer benefits of **\$15 billion a year** as of 2010; **nearly double by 2025**

Updates

- 21 of 22 consent decree standards complete
- Supporting variety of approaches: consensus agreements, negotiated rulemaking
- Refrigerator / Freezer rule finalized August 26
 - Consensus with manufacturers, consumer groups, environmentalists
 - Average savings of **\$200** over life of refrigerator
- Proposed Determination for Set-Top Boxes published June 15
- Upcoming for FY12:
 - Sample Final Rules: Fluorescent Lamp Ballasts, Distribution Transformers, Residential Clothes Washers
 - Sample Test Procedure Final Rule: TVs

Support for ENERGY STAR

DOE Roles

- Leads test procedure development,
- Runs a testing/verification program for ENERGY STAR®
- Supports ENERGY STAR Most Efficient

Updates

- Many test procedures in development/improvement
- Pilot verification program: **over 230 products** bearing the ENERGY STAR logo
- Commencing full testing program
- ENERGY STAR Most Efficient:
 - Targets 5% of models
 - Pilot underway for Refrigerators, CW, CAC, furnaces, GSHPs, and TVs



ENERGY STAR Letter



Department of Energy
Washington, DC 20585

December 9, 2010

Ms. Leslie Jones
ENERGY STAR Program
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Room 62023
Washington, DC 20460

Dear Ms. Jones:

On October 20, 2010, the United States Department of Energy (DOE) notified Electrolux Major Appliance (Electrolux) that DOE had tested the Frigidaire brand chest freezer model FFN09M5HW* manufactured by Electrolux as part of the ENERGY STAR Testing Pilot Program, and that, according to Stage I testing, this model exceeded allowable ENERGY STAR energy-efficiency requirements by 20 percent. DOE gave Electrolux until November 1, 2010, to request additional testing or have this matter referred to the United States Environmental Protection Agency (EPA) for disqualification from the ENERGY STAR program.

Building Codes

Goals:

- **50% Better Codes for Increased Energy Savings**
 - Exploring performance-based options and alternative paths to compliance
 - Voluntary Codes: Submitted outcome and performance-based proposals
- **70% Initiative for Increased Adoption**
 - Comprehensive adoption strategy
 - Goal: 40 states/territories to adopt ARRA target codes or most current model codes by 2015
- **90% Compliance by 2017**
 - Continue technical and financial support to the states
 - Increase the number and availability of compliance guides and field measurement tools

Cost-Effectiveness RFI

- **Goal: Transparent and consistent** national and state-specific cost effectiveness analysis to support adoption and compliance efforts.
- **Timeline:**
 - **September 2011** – RFI published/comment period begins
 - **October 2011** – Comment period ends
 - **November 2011** – Summarize comments and finalize methodology
 - **December 2011** – Draft of cost effectiveness assessment of 2009 IECC (2006 baseline)

Residential Retrofits: Addressing Market Barriers

Motivate Homeowners and
Improve Supply of High Quality Services & Access to Financing

Consumer Information

Consumers do not have access to straightforward and reliable information.

Worker Certification & Training

Consumers need access to clearly identifiable skilled workers

New Delivery Models

Need residential retrofit programs with faster uptake / lower transaction costs

Financing

Homeowners need access to financing to pursue investments in EE

Innovation / Market Segment Focus

Need to address new technology, low income, multifamily, etc,

Building Residential Retrofit Industry: Better Information / Demand

Home Energy Score:

A Reliable, Easy to Understand Tool

- DOE has completed 9 pilots across U.S. – over 1,000 homes
- Analysis underway - focus:
 - Efficacy of the scoring tool and methodology
 - Homeowner understanding and response
 - Assessor feedback
- Based on findings, DOE will refine the tool and the program
 - National Launch -- Nov/Dec 2011



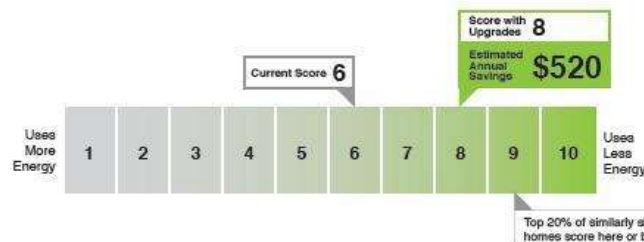
Home Energy Score Testing Locations

HOME ENERGY SCORE

Address 555 Park Lane
Pittsburgh, PA 15201

Total Energy 190 MBTUs / year
Home Size 1,500 square feet
Air Conditioning Yes

Climate Zone



Energy use reported in Million British Thermal Units (MBTUs). Estimated savings reflect the amount a homeowner will save on their annual utility bill if all recommended improvements are made. Both energy use and savings estimates assume that 2 adults and 1 child live in the home. Your actual energy use and savings will depend on how you maintain your home, how many people live there, your day-to-day habits and weather. To learn more about how to save energy and money in your home, as well as more about the home energy score, visit: homeenergyscore.gov



U.S. DEPARTMENT OF
ENERGY

Assessor # 05317 Assessment Date: 11/05/2010 Label # 000062465

Building Residential Retrofit Industry: Workforce Guidelines - Residential

Premise: Demand is function of price and quality.

Goals:

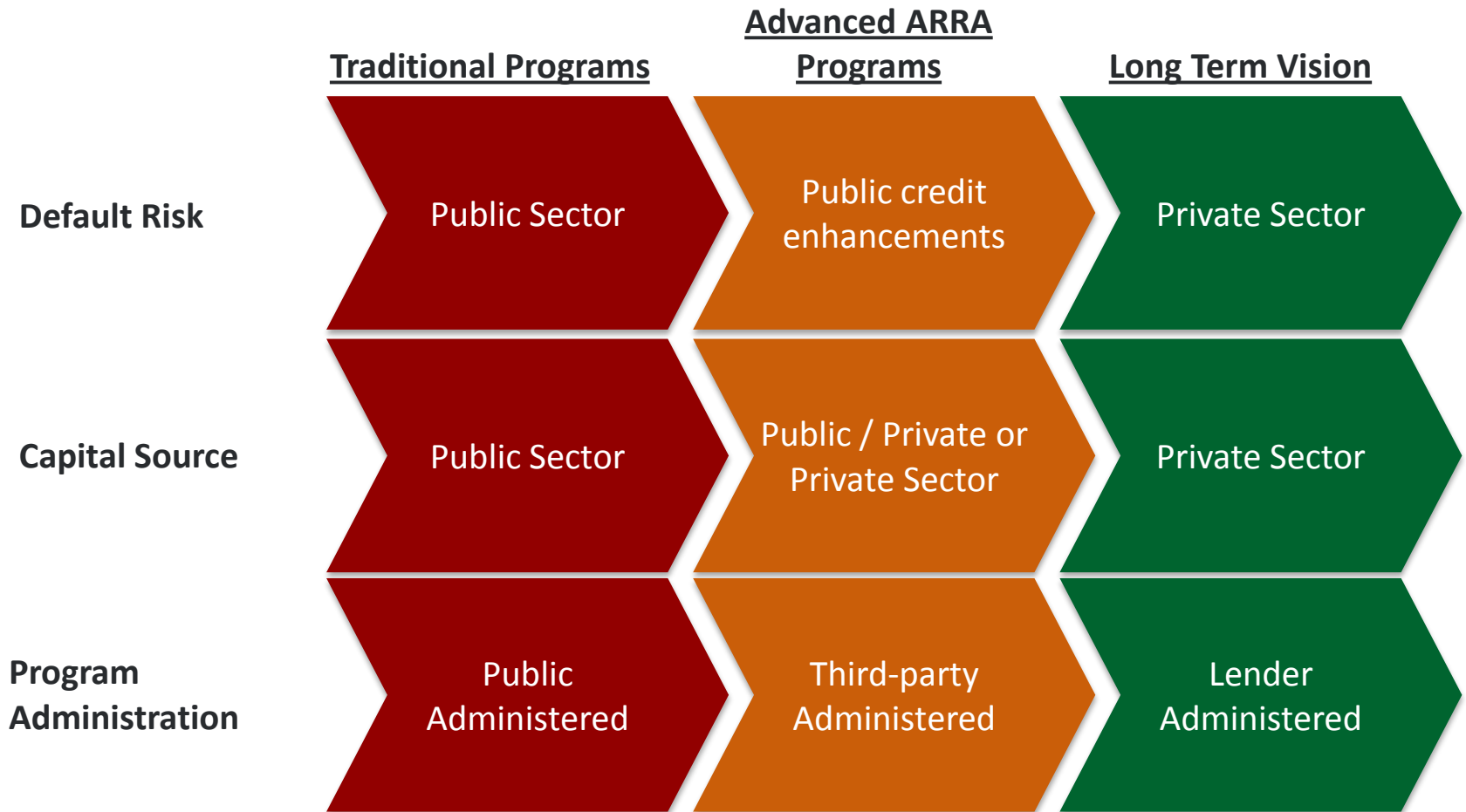
- Help improve retrofit work quality
- Increase workforce career mobility
- Assist trainers developing training materials
- Build confidence of consumers and lenders

Status:

- 1) **Job Task Analyses** - Published on EERE/WAP Workforce Guidelines Website; outreach plans underway
- 2) **Standard Work Specifications** - 2nd round of public comment late 2011
- 3) **Standardized Training Curriculum** - available online (WAPTAC.org)
- 4) **Training Program Accreditation** - available now (IREC is the accreditation body), announcement and outreach plans underway
- 5) **Worker certification** - certification blueprints finalized, new certification tests developed by December 2011.

Greater Access to Financing

Financial Market Maturity Continuum



Building Commercial / Industrial Retrofit Industry:

Workforce - Commercial

- **Work Quality**

- Multifamily Standard Work Specifications – Webinars Fall 2011, Industry Review and Public Comment early 2012
- Commercial Building Retrofit Guides – Guides for four building classes complete by January

- **Training**

- Programs for Superior Energy Performance Commercial Building credentials – In development, 2011
- Core Competencies for 6 job categories (with GSA)– Public comment begins late September 2011

- **Implementation (ongoing)**

- Superior Energy Performance (Industrial and Commercial Buildings)
- Federal Building Personnel Training Act (with GSA)
- Utility, State and Local Government programs
- Better Buildings Challenge

Building Commercial / Industrial Retrofit Industry:

Commercial and Industrial Programs

Commercial Buildings

- Better information to value EE
 - Asset rating to support appraisal and other efforts
 - RFI – initial scoping document -- out for comment until Sept. 22
 - Pilot in Spring 2012
 - Goal for Public Rollout in Fall 2012
- Highly efficient technologies
 - Commercial Building Alliances: Roof Top Unit Specification

Industrial Facilities

- Reshaping Save Energy Now as part of Better Buildings, Better Plants Challenge
 - Improving program cost-effectiveness
- Advancing ISO50001 and Superior Energy Performance
 - Supporting tools
 - Workforce training and certifications

State/Local Government Assistance

Community Energy Strategic Planning Academy

Purpose: Help communities develop effective energy strategies.

The Academy will equip participants with tools, capabilities, and direct assistance to effectively develop and implement plans and realize benefits of clean energy.

Participants / Materials / Timing

- Participants selected through competitive process; 40 participants.
- All materials from the Academy will be available to all communities through the DOE Technical Assistance program.
- Graduation: December 2011

Community Energy Strategic Planning Academy
The Planning Process; Engaging Stakeholders
Creating an Energy Vision; Assessing Energy Environments & Crafting Goals
Developing Strategies; Prioritizing Options; Project Financing
M&V Planning; Completing, Planning; Completing, Presenting and Promoting your Plan; Implementing your Plan
Graduation

State/local Government Assistance

States Energy Efficiency Action Network (SEE Action)



DOE/EPA facilitate

- Working Groups
- Meetings
- Development of key deliverables
- Coordination platform

SEE Action: Next Steps

- Blueprints finalized for all eight working groups
 - Short, mid, and long-term goals
 - 15+ Projects selected for funding
 - Funded projects completed or in progress
- Executive Group / Co-Chair Meeting – December 13
 - Coordinate outreach on resources to stakeholders
 - Measure progress toward goals
- Ongoing implementation
 - Development of key materials
 - Outreach goals to key states and local governments



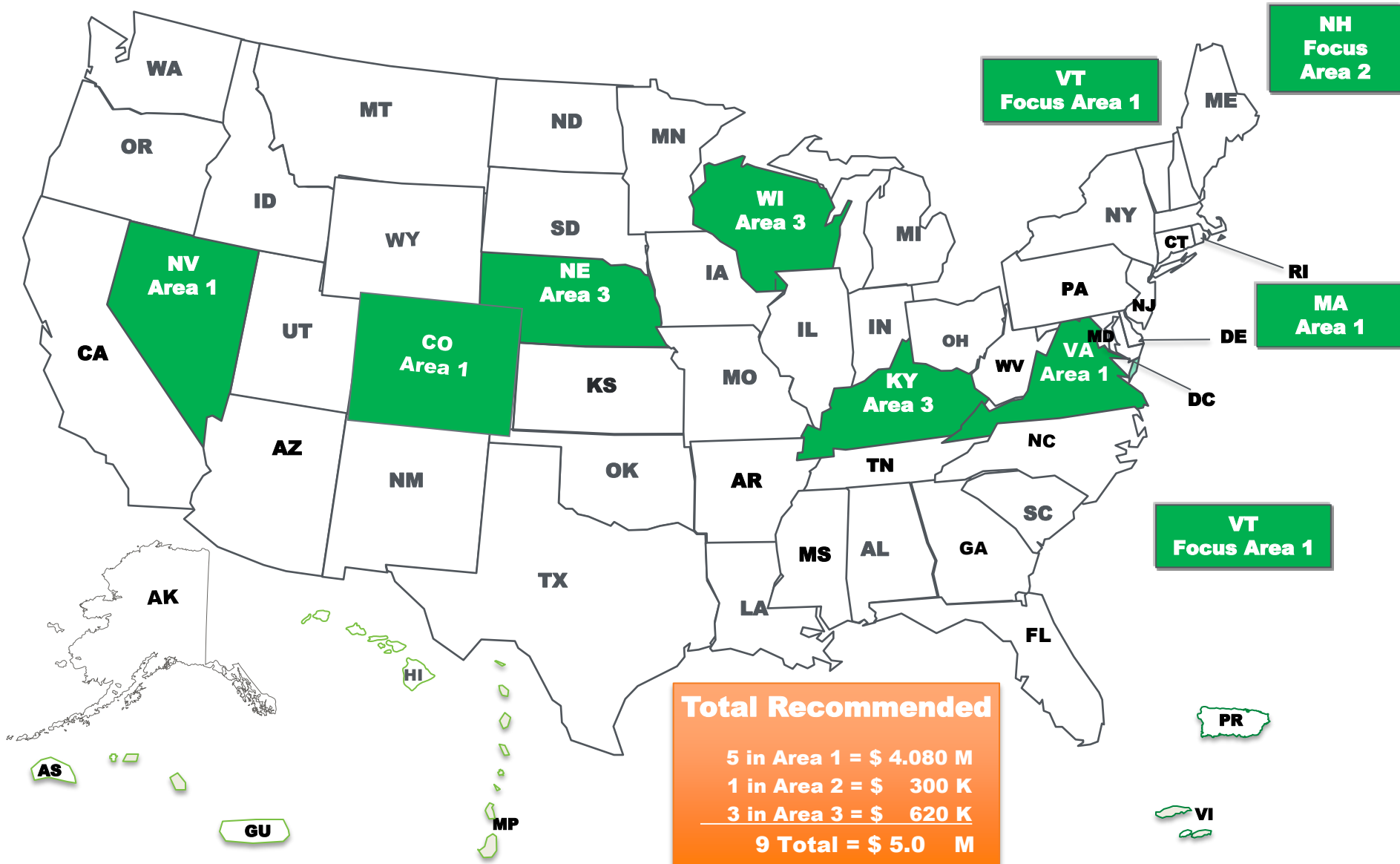
SEE Action
STATE ENERGY EFFICIENCY ACTION NETWORK

State/Local Government Assistance

FY11 SEP Competitive FOA

- Area 1: Enhancing Private Commercial Building Retrofits through Streamlined Standards and Policy Incentives
 - **Goal:** Create programs that rely entirely on private sector financing for retrofits and include self-sustaining program operation mechanisms and supportive policies at the state and/or local levels.
- Area 2: Increase investments in cost effective energy efficiency through ratepayer-funded programs.
 - **Goal:** Increase investments in cost effective energy efficiency through ratepayer-funded programs.
- Area 3: Piloting a State Energy Extension Partnership (SEE)
 - **Goal:** Assist States in partnerships with the State Agriculture Cooperative Extension Services (CES) to accelerate adoption of energy efficiency and renewable energy to address U.S. energy use.

FY11 Competitive FOA Selections



Next Steps

- **ARRA Transition**
- Best practices sharing
- High impact
- Building EE industries
 - Demand, workforce, financing
- **Stakeholder Coordination**
 - State Energy Offices, Local Governments, and Stakeholders
 - 3 Regional Conferences planned for December 2011 and January 2012 .
 - **2012 WIP National Conference – April 2012**

FEMP - Progress on ESPCs

2011 Defense Authorization Act - eases the process for contractor selection of agency ESPCs

- Incorporated in DOE Contracts by March 25, 2011
- Outreach on new rules underway

ENABLE – New financing tool

- For smaller facilities, focuses on three key ECMs:
 - Lighting
 - Water
 - Controls (i.e. occupancy sensors, programmable thermostats)
- Currently in the *concept phase, pilot projects Spring 2012*

Steps for Widespread Adoption

- Encourage process consistency across public and private funding programs - focus for coming year
- Motivation from the top: OMB/CEQ memo to all Senior Sustainability Officers
- Ease of use and support at the site level: FEMP will continue to simplify the process for ESPCs and will provide broad support.