

Webinar Series:

Energy Efficiency and Conservation Loan Program

With Experts from Electric Cooperatives and
the U.S. Departments of Agriculture and Energy



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

Webinar Series sneak peek:

Residential Energy Efficiency Deep Dive

Part Two – Thursday, Dec 18th 3:00 pm EST

> Focus area will depend on your votes!

Speakers include **Amy Bryan**, Jackson Electric Membership Corporation
Danielle Byrnett, US Department of Energy

Register now! Part two: <https://www1.gotomeeting.com/register/244353121>



U.S. DEPARTMENT OF
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Webinar #3 of 6: Residential Energy Efficiency Part One

Gerard Moore, Acting Deputy Assistant Administrator of the Electric Program in USDA's Rural Utilities Service

Gary Stooksbury, CEO of Aiken Electric Cooperative

Lindsey Smith, Electric Cooperatives of South Carolina

Danielle Byrnett, Better Buildings Residential Programs, U.S. Department of Energy

Odette Mucha, Stakeholder Engagement, Office of Energy Efficiency and Renewable Energy, US Department of Energy



U.S. DEPARTMENT OF
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Energy Efficiency &
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Energy Efficiency and Conservation Loan Program (EECLP)

Rural Utilities Service
Electric Program
US Department of Agriculture

The Energy Efficiency and Conservation Loan Program

- Rural Utilities Service published the Final Rule for the Energy Efficiency and Conservation Loan Program on December 5, 2013 which implements Section 6101 of the 2008 Farm Bill.
- Section 6101 expands the ability of the electric program to make loans for energy efficiency activities .
- This regulation is an added subpart to an existing regulation (new “subpart H” to 7 CFR 1710).
- The regulation allows new financing opportunities for RUS borrowers to provide energy efficiency activities to businesses and homeowners in rural America.
- Eligible EE programs can be developed and implemented by an eligible borrower for its service territory.
- Eligible investments and activities include; building weatherization, HVAC upgrades, ground source heat pumps, lighting, small scale renewable generation, energy audits, soft costs, etc.

The Energy Efficiency and Conservation Loan Program – cont...

- A typical borrower's energy efficiency program might have the utility relending the funds to the consumer for EE upgrades to homes, businesses or industry.
- Utilities may charge an interest rate to the consumer for the EE loan.
- Many EE programs feature on-bill repayment directly to the utility.
- Loans to RUS borrowers may have terms for up to 30 years in some cases.
- RUS will ask potential borrowers for a business plan and quality assurance plan to support the loan application.
- Potential borrowers should reach out to GFRs and/or headquarters personnel for guidance on submitting an application.

Who can borrow under EECLP?

1-An entity in the **business of providing** direct or indirect **retail electric service to consumers** in rural areas.

2-An entity in the **business of providing wholesale electric supply to distribution entities** providing service to consumers in rural areas.

3-An entity in the business of **providing transmission service to distribution or generation entities** providing services to consumers in rural areas.

*The entity shall provide the applicable service using **self-owned or controlled assets** under a **published tariff** that the entity and any associated regulatory agency may adjust.*



For Additional Information

Please visit our website at: http://www.rurdev.usda.gov/UEP_EECLP.html

Or Gerard.moore@wdc.usda.gov 202-720-6285

- ▶ For more information on the Final Rule, you may download the following information here:
- ▶ [Press Release](#)
- ▶ [Final Rule](#)
- ▶ [Background PowerPoint Presentation](#)
- ▶ [Presentation](#)
- ▶ [Toolkit](#)
- ▶ Current Electric Program Borrowers should reach out to the Electric Program [General Field Representatives](#) for additional information and how to apply.



Energy Efficiency Retrofits
and On-bill Financing
for Existing Homes:
**A Replicable Model for
Electric Cooperatives**

December 11, 2014

Gary Stooksbury, CEO


Aiken Electric Cooperative (S.C.)

Lindsey Smith

The Electric Cooperatives of South Carolina



Aiken Electric Cooperative, Inc.

Your Touchstone Energy® Partner 



Gary Stooksbury, CEO

Number of Active Accounts 45,986

Number of Employees 146

Miles of Line 5,368

Consumers per mile 8.6

Average Monthly KWH per member 1,717

Counties served: *Aiken, Barnwell, Calhoun, Edgefield, Greenwood, Lexington, McCormick, Orangeburg and Saluda*



ENERGY EFFICIENCY

BARBARA RASOR

LOWERED HER ENERGY COSTS BY

40 PERCENT

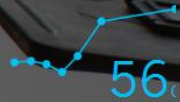
\$622^{YR}



SOUTH CAROLINA

Barbara Rasor weatherized her house and installed a more efficient heating system, thanks to the Help My House program offered by Aiken Electric Cooperative, her power provider in South Carolina. Aiken gave her a loan for the work, which Rasor is repaying via her monthly power bill.

OHIO



"The City of Asheville helped lead the way in statewide energy efficiency..."




NEXT STORY

Photo: Muriel Gouffray, Aiken Electric Cooperative



**Aiken Electric
Cooperative, Inc.**

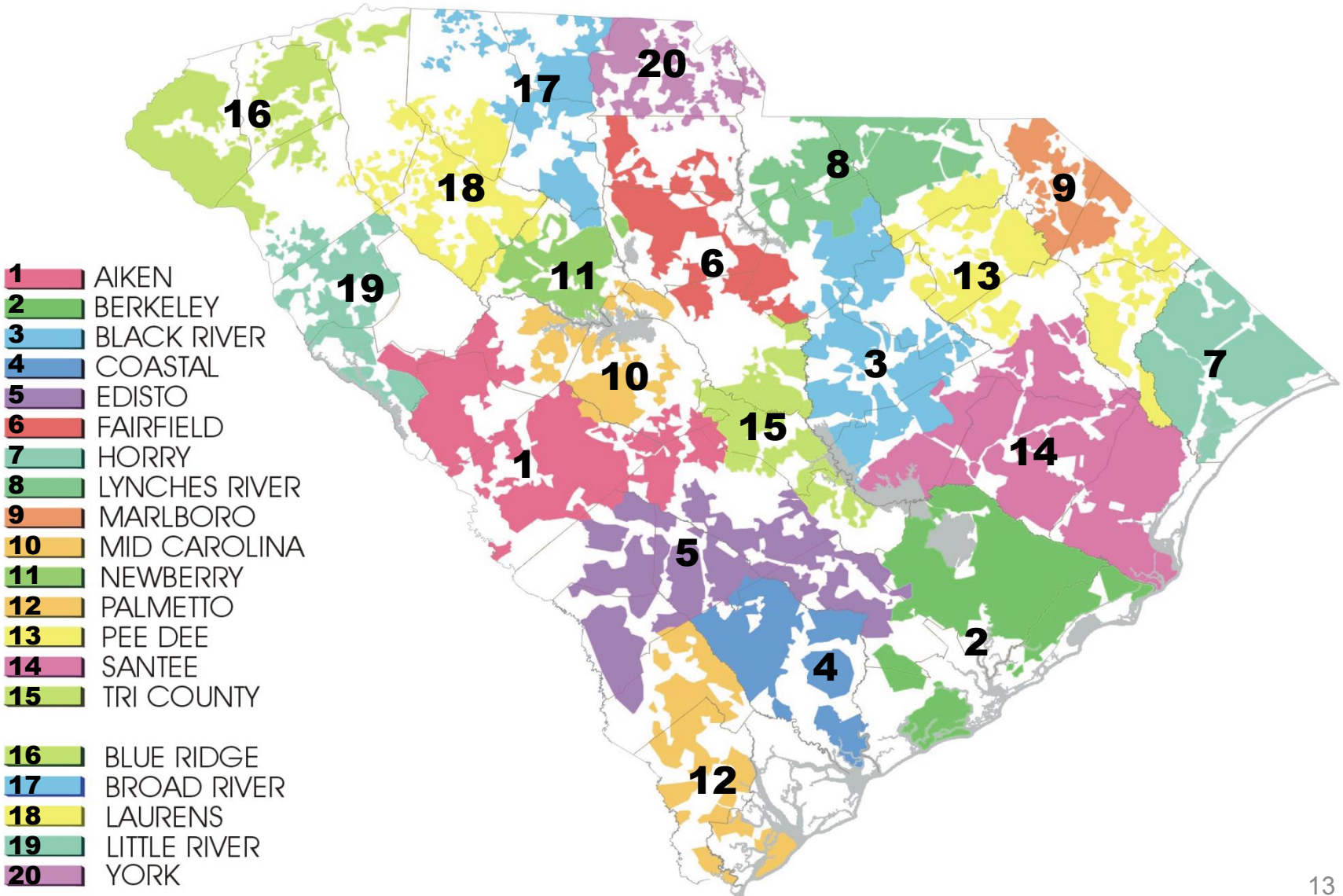
Your Touchstone Energy® Partner 



AEC Help My House Program Progress as of December 10, 2014

Members Contacted	Initial Audits Completed	Approved for Bids	Homes with Winning bids	Loans Sent to Credit Union	Loans Signed by Member	Post Audits Approved	Contractors Paid
449	235	222	168	167	166	161	158
			Total Winning Bids (\$)				
			\$1,626,327				
			Average Loan Per Home				
			\$9,681				

SOUTH CAROLINA ELECTRIC COOPERATIVES



SOUTH CAROLINA ELECTRIC COOPERATIVES

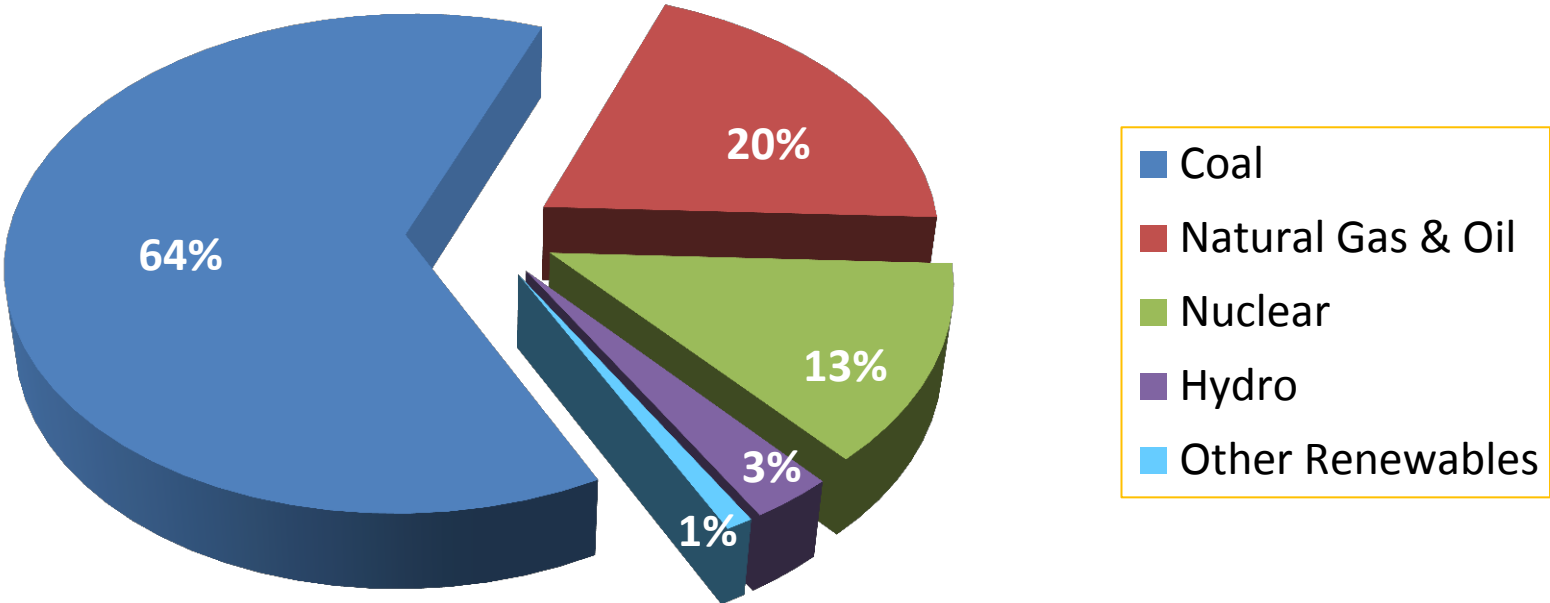
We don't own generation...

...**We're** Super Consumers!



OUR PROVIDERS' GENERATION MIX

S.C. Co-op Generation Sources



2013 (Energy)

S.C. COOPERATIVE MEMBERS

- 24% live in manufactured housing (3X the national average)
- 50% more likely to live below the poverty line
- In some months, many may spend 60-80% of income on energy
- The state ranks 7th in cooling degree days per year
- 80% use electricity as primary form of heating

A TALE OF TWO PROGRAMS



Shape Up Your Home for Energy Savings

Loan Pilot

- 2011-2012
- 8 co-ops, 125 homes
- Main Purpose: test EE vs. building new generation
- RUS and G&T funding

Working Programs

- 2012- Present
- 4 co-ops, 282 homes (so far)
- Purpose: Member service
- Mix of co-op and RUS dollars for lending capital

GOALS OF THE HMMH PILOT

- Determine how to overcome barriers to implementation of energy efficiency improvements
- Establish a functional model for OBF
 - Will members participate?
 - Viable source of loan funds
 - Centralized support function
 - Co-ops playing different roles
- Determine cost-effectiveness
 - To the participant. Savings enough to cover loan payments?
 - To co-ops. Demand savings? Load factor?
 - Long term resource. Cost/kWh
- Determine member satisfaction

HMH PILOT BACKGROUND

- Central Electric established 2010 efficiency goals
 - 10% reduction in residential energy use by 2020
 - Reduce wholesale residential power purchase costs
 - Maintain or improve member satisfaction
- Central Electric partnered with ECSC to design pilot program
- Since 2010, progress with federal legislation to enable more financing of efficiency
- Pilot Program kicks off, accesses USDA financing

ON-BILL FINANCING (OBF) – A TARIFF

- 2010 South Carolina state law (Section 58-37-50) allowed co-ops to move forward
 - Loans are tied to the meter
 - Power can be shut off for lack of payment
 - Loan stays with home if home is sold
 - These provisions eliminate need for credit check

ON-BILL FINANCING (OBF) – A TARIFF

- Allows co-op members to finance energy efficiency measures with low-interest loans
- Loans are repaid on monthly utility bills
- Enables those without sufficient cash in hand to make prescribed and long-awaited efficiency upgrades



Shape Up Your Home for Energy Savings

PROGRAM #1: THE PILOT

2011-2012

KEY PARTNERS

1. Participating Co-ops

Aiken Electric	Palmetto Electric
Black River Electric	Pee Dee Electric
Broad River Electric	Santee Electric
Horry Electric	Tri-County Electric

2. Central Electric Power Cooperative

- Purchases wholesale power and distributes it to the state's co-ops



3. Electric Cooperatives of South Carolina

- Co-ops' state-wide trade association



KEY PARTNERS

4. Environmental and Energy Study Institute

- Assisted with program design, outreach, evaluation



5. Doris Duke Charitable Foundation

- Grant supported EESI's work

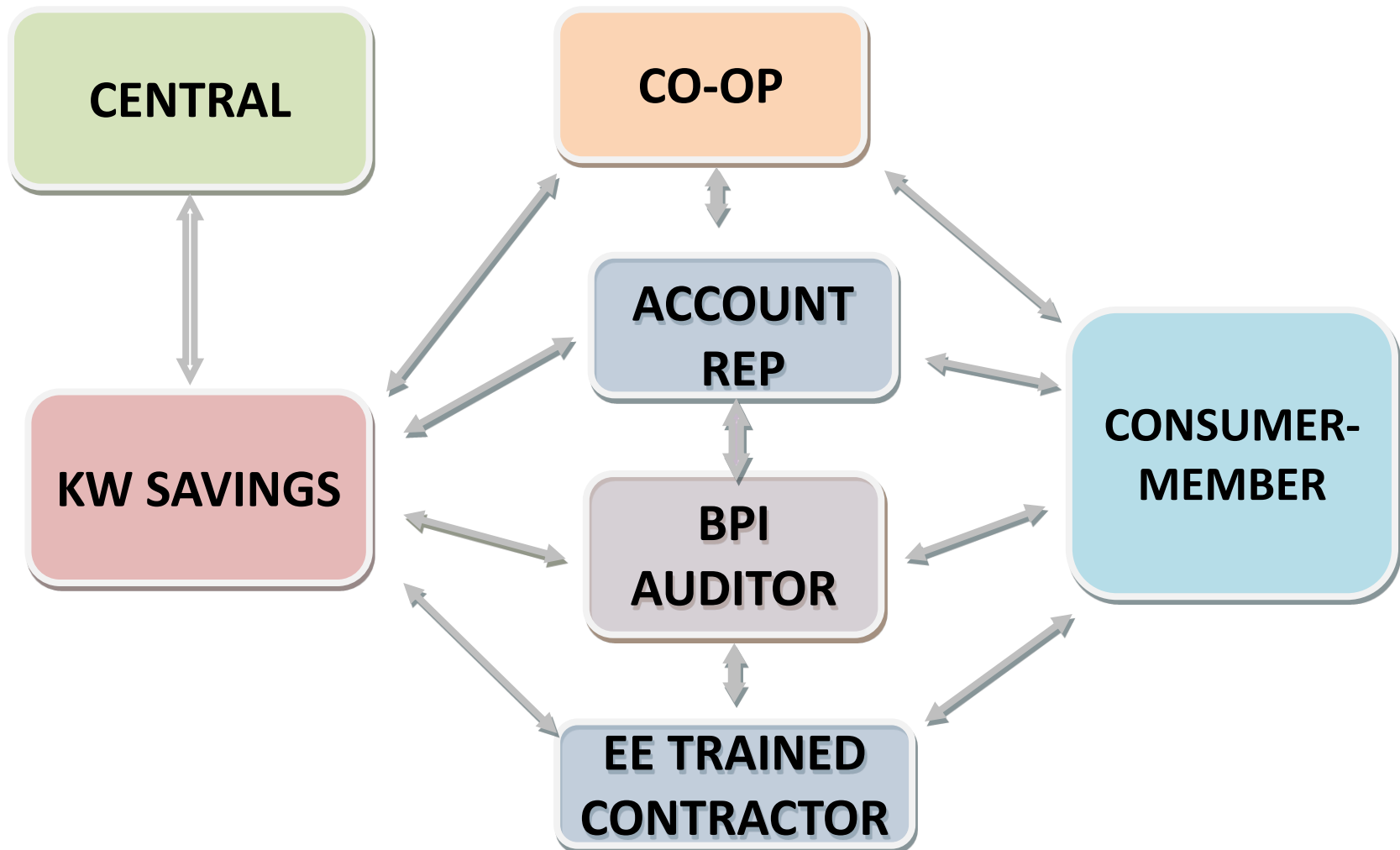


6. Ecova

- Program planning, management



HMH PILOT STRUCTURE AND PROCESS



KW SAVINGS: A LA CARTE ADMIN

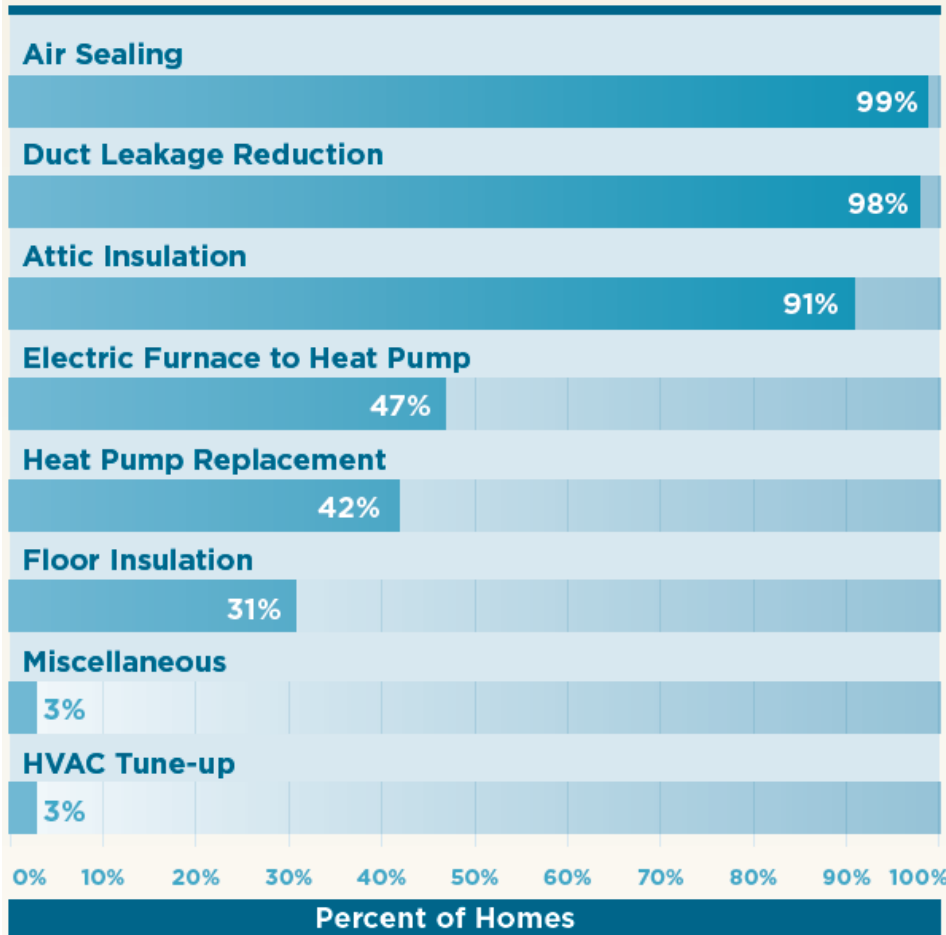
- Available services include:
 - Total program management
 - Energy Audits
 - Contractor management
 - Loan review and processing (Credit Union)
 - Member support and communications
 - Post-retrofit problem resolution
 - Member-contractor mediations

HMH PILOT PROCESS

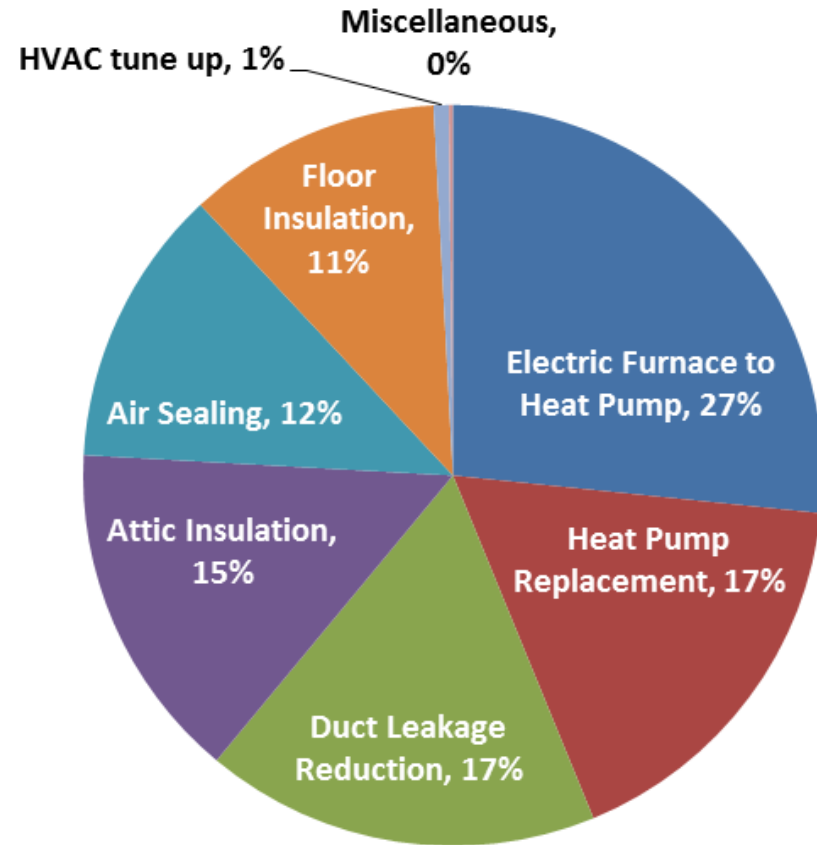
1.	Participant Selection
2.	Visual Audit
3.	Comprehensive BPI Audit
4.	Loan Approval & Contractor Selection
5.	Measure Installation
6.	Final Inspection & Project Approval

MEASURES

Percent of homes with each measure



Percent of savings from each measure



MEASURED RESULTS CLOSE TO PREDICTED

	Predicted	Actual
Annual kWh Savings	11,593 kWh	10,809 kWh
Annual \$ Savings	\$1,285	\$1,157
Project Costs	\$7,684	\$7,684
Project Simple Payback	6.0 years	6.6 years

All values are per home averages for a typical meteorological year.

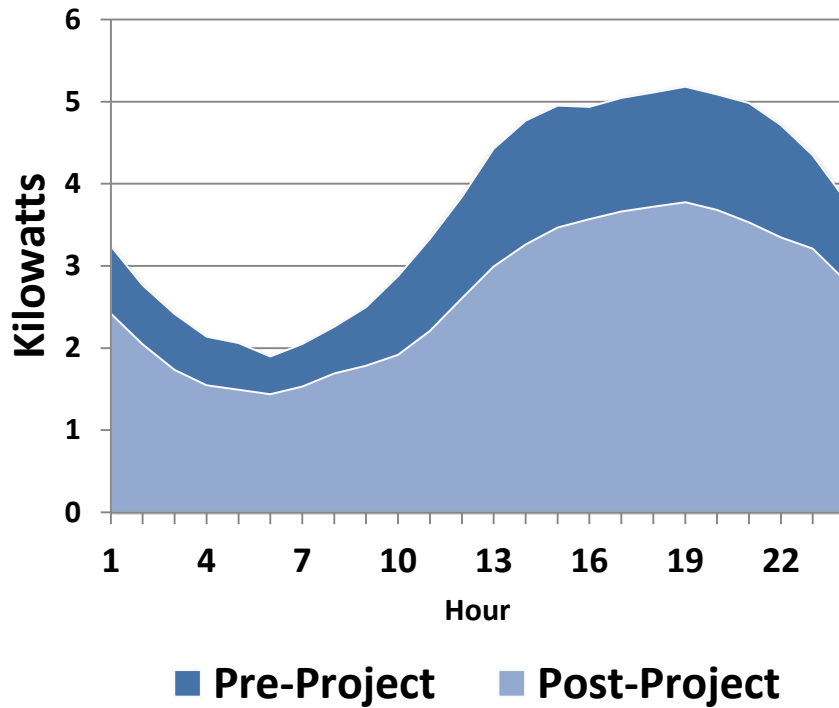
ANNUAL SAVINGS: AVERAGE HMM HOME

\$1,157		\$288	Annual Net Savings
	Annual Energy Savings	\$869	Annual Loan Repayment

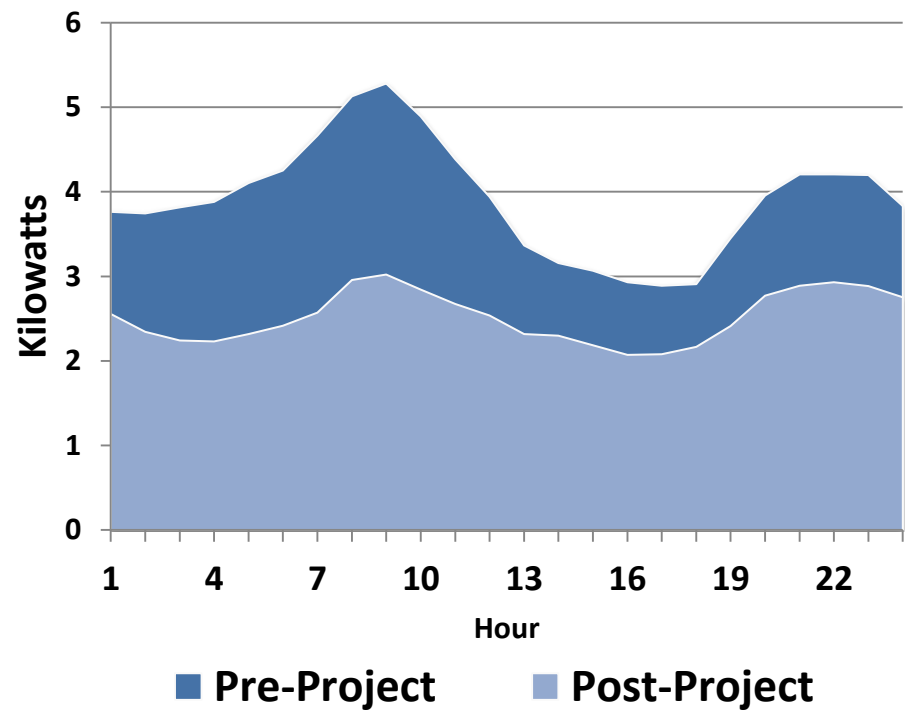
All values are per home averages for a typical meteorological year.

DEMAND SAVINGS

Average Summer Day Load Shape



Average Winter Day Load Shape



PARTICIPANT SURVEY RESULTS

SATISFACTION WITH CO-OP

96% same or higher

ARE YOU MORE COMFORTABLE?

A lot more 76%

Somewhat 13%

About the same 11%

SATISFIED WITH POST-REPAIR ELECTRIC BILLS?

Very satisfied 69%

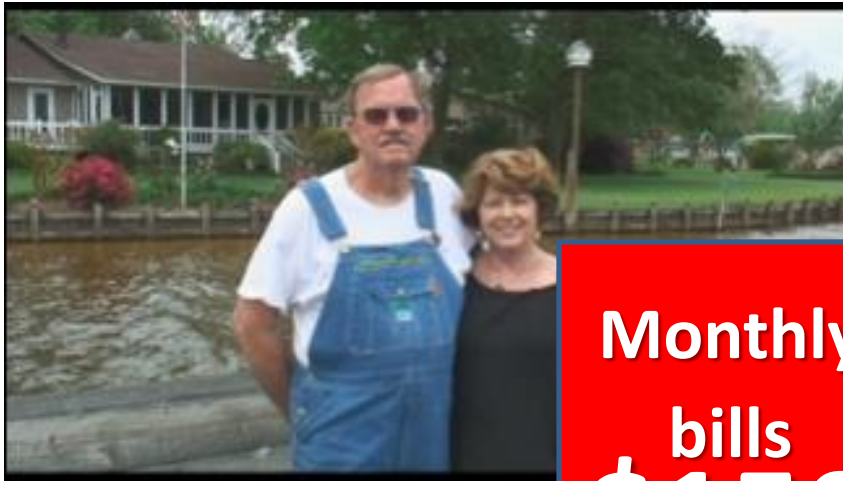
Somewhat 20%

Neutral 0%

Somewhat not 7%

Very unsatisfied 4%

TERI AND JOHN NORSWORTHY'S HOME



**Monthly
bills
\$150
to
\$200
lower!**

Summerton, S.C.

Santee Electric

Site built home, 1979

Size: 2013 sq. ft.

3 bedrooms

Energy efficiency measures:

New heat pump,
duct sealing, air sealing,
attic insulation

Loan amount: \$6,540

PILOT CONCLUSIONS

- The average home in the HMM Pilot
 - Electricity use dropped by 34% (about 11,000 kWh/yr)
 - Savings exceeded loan repayment by \$288/yr
- Coincident peak savings also dropped about one-third
- Load factor unchanged, would have improved with load control switches
- Homes became more comfortable
- Participants were extremely satisfied with the program and their co-ops
- HMM has spawned ongoing OBF (4 active programs)

The Business Case for OBF

- Short Term
 - Participant and member satisfaction positive
 - Load factor impacts minimal
 - Lost revenue would be small, even for a long term aggressive program

- Long Term
 - EE targets in EPA's proposed 111(d) rules
 - Energy efficiency is cheaper than new generation - likely less than 2 cents/kWh
 - Broader economic benefits: good for contractors and other local businesses; supply chain



Shape Up Your Home for Energy Savings

PROGRAM #2: WORKING PROGRAMS

2012-PRESENT

Program Standards



Quality Controls

Bookend comprehensive audits of each home per the SC statute.

Oversight of Loan Processing

Loan documents either drafted by KW Savings or drafted by the co-op and sent to KW Savings for review before distribution to homeowners.

Data Collection

Location of homes, list of installed measures, costs, work and audit results, ongoing energy usage, and any other data required by KW Savings Co.

Shared Business Plan

Each cooperative must submit an acceptable written business plan before implementing the program, including any proposed differences from the pilot model.

WORKING PROGRAMS PROGRESS



Co-ops	Homes/Loans Completed
Aiken Electric	158
Black River Electric	35
*Little River Electric	n/a
Santee Electric	79
*York Electric	10
	Total 282



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and On-bill Financing
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Electric Cooperatives**

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The Electric Cooperatives of South Carolina

Questions?

Email us at SE@ee.doe.gov



Residential Energy Efficiency Program Resources

Danielle Sass Byrnett

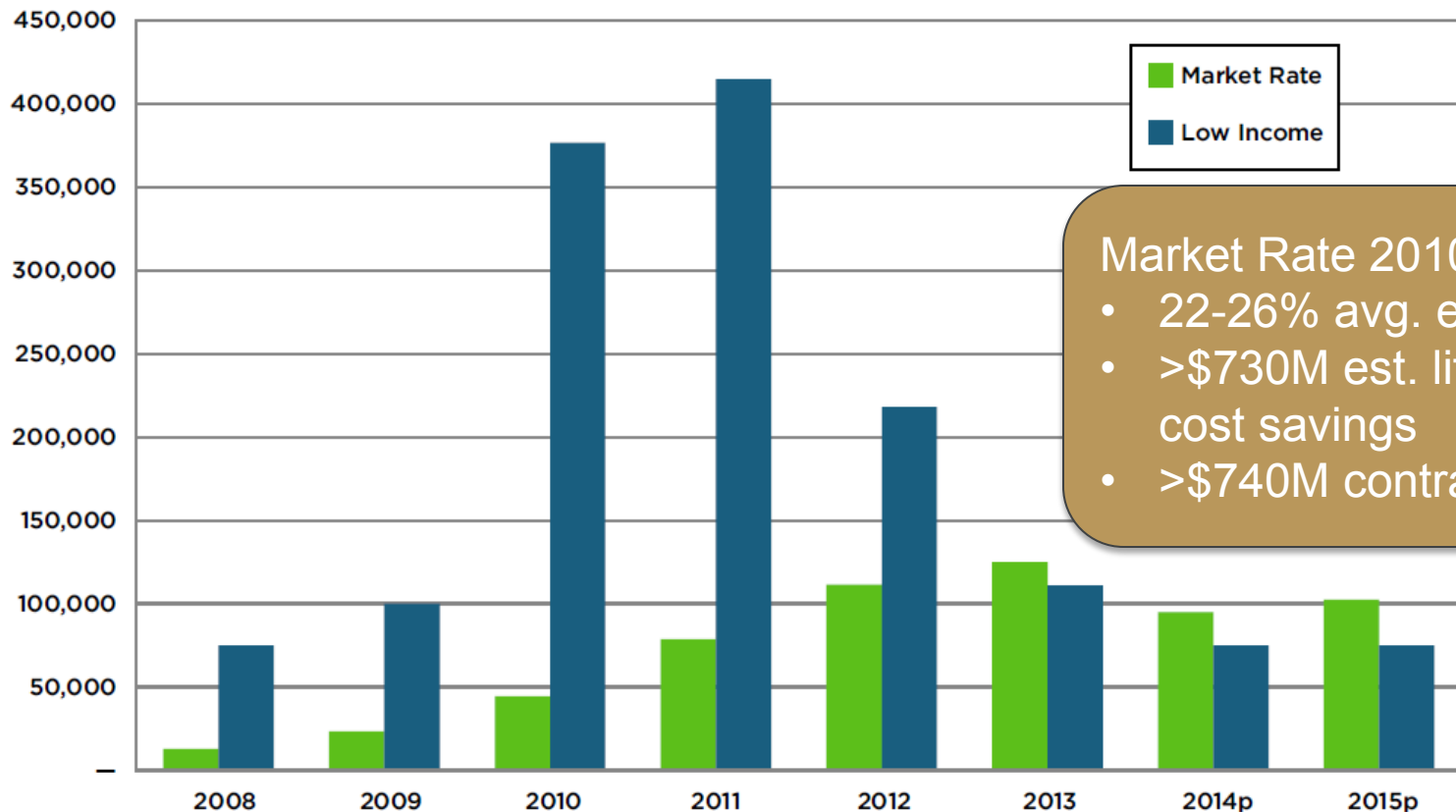
U.S. Department of Energy

Agenda

- Current partners
- DOE Residential Energy Efficiency Resources for You
 - Better Buildings Residential Program Solution Center
 - Home Performance with ENERGY STAR
 - Home Energy Score
 - Better Buildings Residential Network
 - Poll: What do you want to hear more about (on next Thursday's webinar)?

DOE Partners Have Completed >1 million Home Upgrades

- Better Buildings Neighborhood Program (2010 - 2013)
- Home Performance with ENERGY STAR (2001 - present)
- Operating in urban, suburban, and rural environments

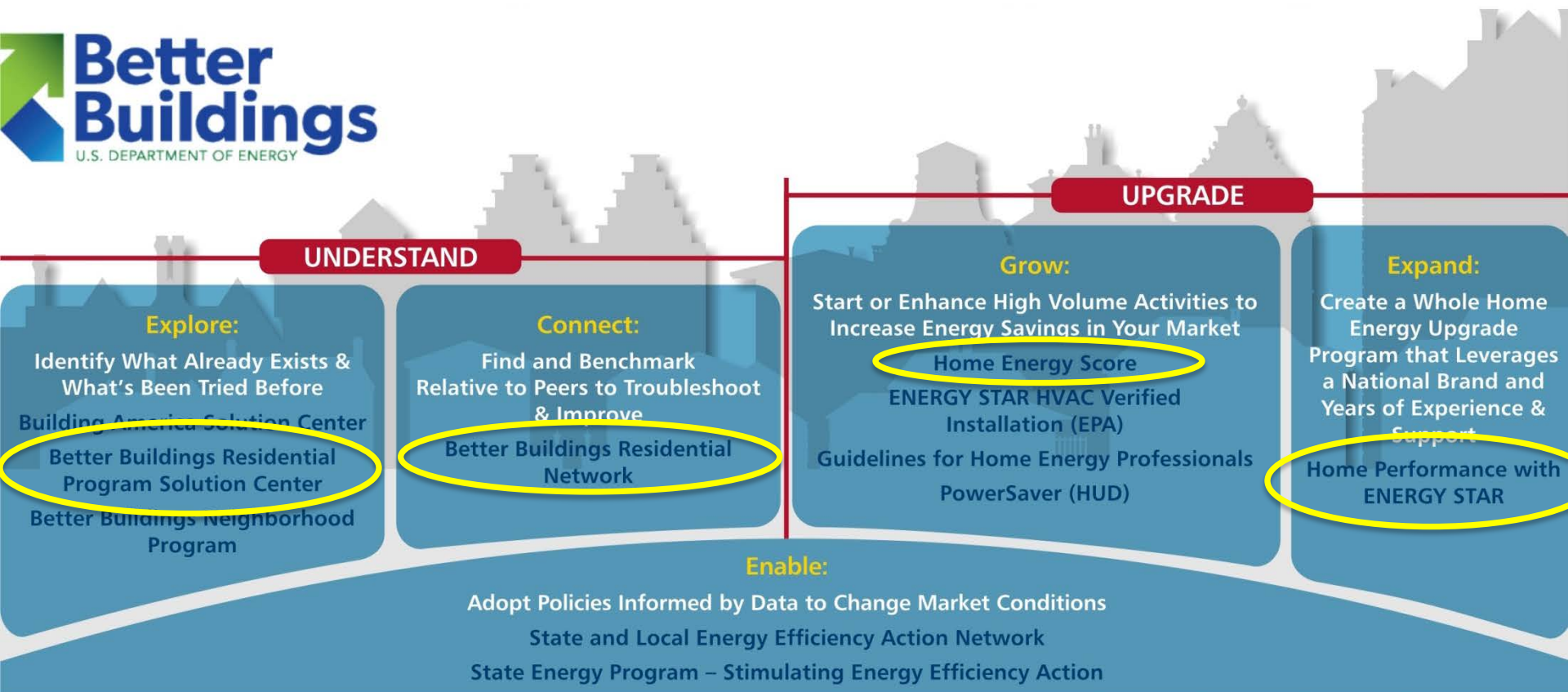


Market Rate 2010-2013 (BBNP):

- 22-26% avg. energy savings
- >\$730M est. lifetime energy cost savings
- >\$740M contractor invoices

DOE Residential Energy Efficiency Resources for You

Working Together to Expand Energy Efficiency in Existing Homes



<http://energy.gov/eere/better-buildings-residential>

Better Buildings Residential Program Solution Center

The Solution Center helps residential energy efficiency programs and partners:

- Minimize trial and error to achieve success
- Plan, operate, and evaluate their programs
- Access a living repository of examples, lessons, and resources

energy.gov/rpsc

Explore by Program Component



Six Program Components



Who Are
You?

- **Market Position & Business Model:** Understand the market for energy efficiency products and services and your organization's role in it.



What Do
You Do?

- **Program Design & Customer Experience:** Create a customer-centric process that provides products and services that customers want.



How Well
Do You
Do It?

- **Evaluation & Data Collection:** Develop effective data collection and evaluation strategies in order to understand the effects of your program.

Program Components (cont.)



How to Find
Your
Customers?

- **Marketing & Outreach:** Spur demand for home energy upgrades and design offers to motivate customer action.



How Will
They Pay?

- **Financing:** Ensure that consumers have access to affordable financing that enable them to pay for energy upgrades.



Who Does
the Work?

- **Contractor Engagement & Workforce Development:** Design a program that provides value for contractors and support workforce training.

Better Buildings Residential Program Solution Center

EERE » BTO » Better Buildings Neighbor

Program Design & Customer Experience

- Solution Center Home
- About
- Handbook Index
- Energy Data Facts
- Glossary
- BROWSE BY:
- Program Components
- Program Design Phases
- Content Types

Financing and Incentives



Spotlight on Michigan: Experiment to Find the Right Mix of Incentives

Key Takeaways

- Weight incentives to reward deep energy improvements over general program participation in order to maximize energy savings per home
- Recognize that neighborhood characteristics are important determinants of customer participation, sometimes more so than incentive levels
- Ensure that the program is flexible enough to adapt its features based on feedback and results

With support from the U.S. Energy Department's Better Buildings Neighborhood Program, a diverse coalition of partners under the banner of BetterBuildings for Michigan designed 27 neighborhood "sweeps" across the state. These targeted outreach campaigns varied varying incentives and outreach strategies to designated neighborhoods with a goal to understand which incentives and strategies work best in the target communities.

In the earliest sweeps, program staff focused on maximizing the number of participants receiving a diagnostic energy assessment and some energy efficiency measures, called the program's "base package." Program staff quickly realized that to achieve deeper energy savings with a target of at least 15% per home, they would need to ensure that both their messaging and incentives encourage participants to invest in additional measures. Using this information, BetterBuildings for Michigan changed its approach in subsequent sweeps and offered rebates to promote larger scopes of work for each home. As of June 2012, the program had completed nearly half of the 27 sweeps and continues to experiment with program design to understand the best strategies for each community. All 27 sweeps will be completed by summer 2013, at which time there will be more lessons to glean from the program's experiences.

Create Multidimensional Incentives to Address Customers' Varying Needs

2013 REPOWER INCENTIVE GUIDE

SECTIONS

PG. 2-3
REPOWER SPECIAL OFFER: WHOLE HOUSE ENERGY UPGRADE BONUS REBATE AND HOME ENERGY ASSESSMENT WITH EPS

PG. 4-8
PUGET SOUND ENERGY REBATES

PG. 9-10
CASCADE NATURAL GAS CORPORATION REBATES

PG. 11
REPOWER REBATES- OIL, PROPANE or WOOD

PG. 12
STEPS TO QUALIFY

** RePower offers cash-back rebates to residents of three counties. Rebate amounts are based on the size and condition of the home. Rebate amounts are paid one time per household. All RePower rebates expire on 12/31/2013. All rebates must be used within 12 months of the date of the rebates and are subject to availability and may change. All programs must meet the requirements outlined in RePower's Implementation Specifications Manual.

REPOWER

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HOW TO USE THIS GUIDE

STEP 1: FIND YOUR SECTION

This guide is separated into four sections. The yellow section includes RePower rebates which are available to all RePower customers. The remaining three sections outline rebates based on your home's primary heating source.

- ANY HEATING SOURCE - ALL REPOWER CUSTOMERS: YELLOW SECTION
- ELECTRICITY FROM PUGET SOUND ENERGY (PSE): BLUE SECTION
- NATURAL GAS FROM CASCADE NATURAL GAS CORPORATION*: ORANGE SECTION
- OIL, PROPANE OR WOOD: GREEN SECTION

*CNG customers whose electricity is provided by PSE are eligible to receive electric appliance rebates from PSE.

STEP 2: LEARN HOW TO GET YOUR REBATES

Use the tables on the back cover of this booklet to learn how to claim your rebates and finance your project using an energy-efficiency loan.



RESOURCES

RePower
RePowerRainbridge.org
RePowerBremerton.org
RePowerKitsap.org
877.741.4340

RePower Helpdesk
getadvice@repoweradvisor.com
206.896.0215

Puget Sound Energy
pse.com
800.562.1482

Cascade Natural Gas Corporation
cngc.com
866.626.4479

Kitsap Credit Union
kitsapcu.org
360.562.2000

Puget Sound Cooperative Credit Union
psccu.org
800.273.1550

Energy Performance Score (EPS)
energy-performance-scores.com

Federal Tax Credits
www.energystar.gov/taxcredits

– Make Design Decisions

[PDF of handbook](#) [Print handbook](#)

- Toolbox
- Topical Resources

Energy efficiency: serving the cooperative consumer/owner

Rural Energy Savings Program (Help My House Loan Program) Pilot Project will test

- Consumer acceptance, experience and satisfaction
- Impact on energy consumption
- Impact on energy demand (peak)
- Program model and all processes (outreach, loans, payments, etc.)
- Contractor acceptance and compliance

communication

Provide adequate time for data system development and test

Explore the Solution Center

More than 50 handbooks & hundreds of examples

Overview

Strategy Development

- Assess the Market
- Set Goals & Objectives
- Identify Partners
- Make Design Decisions

Planning

- Develop Implementation Plans
- Develop Evaluation Plans

Implementation

- Develop Resources
- Deliver Program

Evaluation

- Assess & Improve Processes
- Communicate Impacts



Users can find:

- Step-by-Step Guidance
- Tips for Success
- Examples
- Tools and Templates
- “My Favorites” Tagging
- Email Updates for New Content
- Opportunities to Feature Your Materials

Search by:

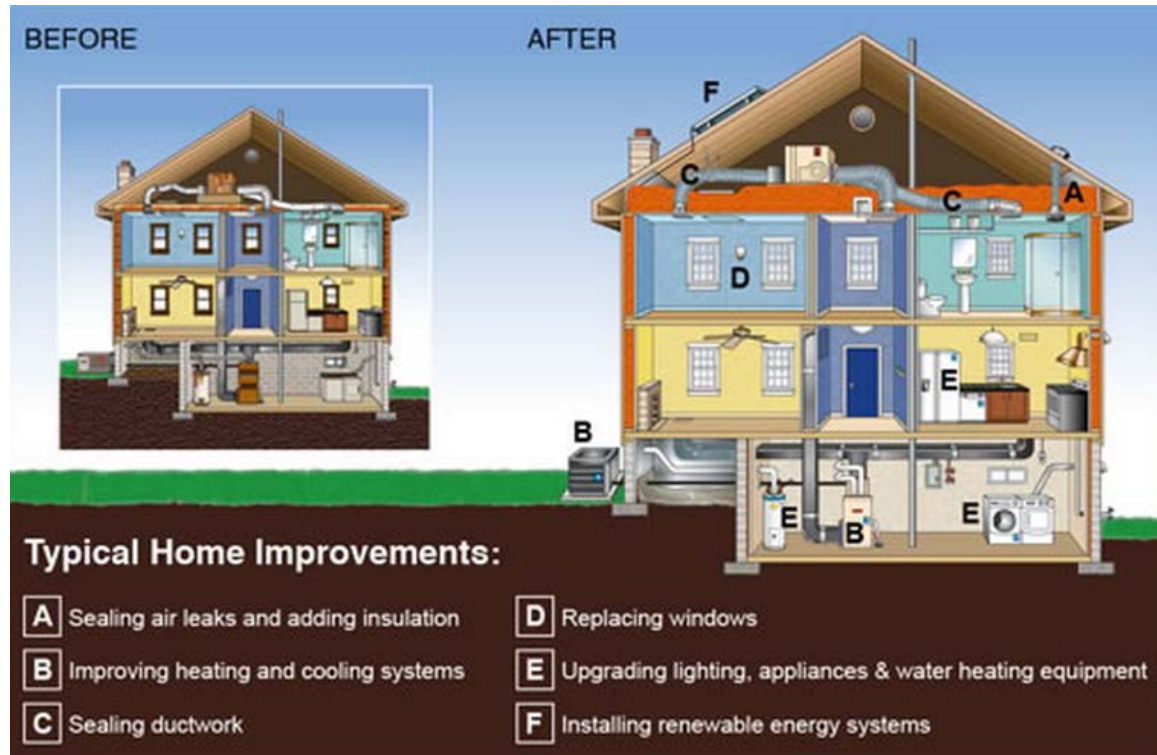
- Program Component
- Program Design Phase
- Organization or Program
- State or Territory
- Customer Income
- Neighborhood Type
- Building Sector

Home Performance with ENERGY STAR Program

Through local sponsors, offers whole-house solutions to high energy bills and homes with comfort problems

Since 2002:

- Over 350,000 homes upgraded
- ~50 Program Sponsors in 35 states
- Average energy savings per project: 28MMBTU
- Average homeowner energy bill savings of 20-25%



For more info: energystar.gov/hpwes

Home Performance with ENERGY STAR Program

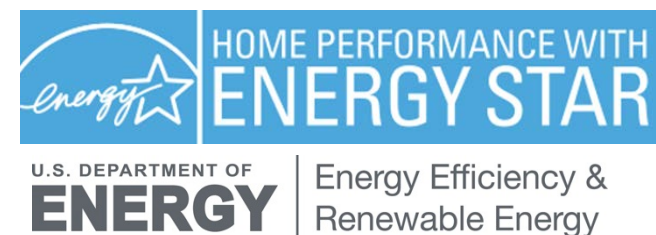
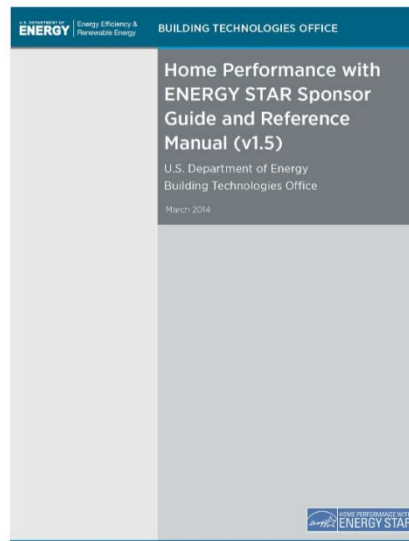
- Managed by local sponsors who recruit home improvement contractors
- Participating contractors offer solutions to customers
- *HPwES turns energy saving recommendations into improved homes*

Benefits of Sponsorship:

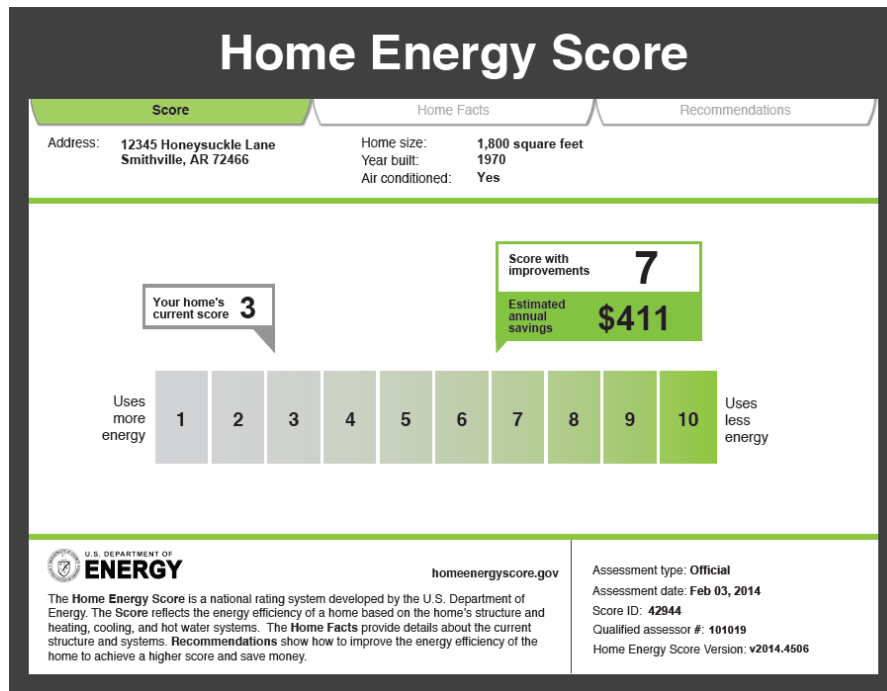
- Access to ENERGY STAR branding & marketing resources
- Eligibility for awards and recognition
- Account manager & technical assistance
- Confidence in leveraging national platform

Program Sponsors offer:

- Whole house energy assessment
- A network of qualified home performance contractors to complete work in homes
- Independent review (verification and inspection) of contractor work



Home Energy Score Program



Since 2012:

- ✓ 15,500+ homes scored
- ✓ 25 Home Energy Score program partners across the country
- ✓ Over 250 qualified assessors

- ✓ “MPG” for homes
 - 1-10 score will show an existing home’s efficiency compared to other homes
 - Identify improvements that will raise a home’s score and save money
- ✓ Non-proprietary, transparent tool
- ✓ Easy method for collecting and analyzing data
- ✓ Low cost service
 - Takes 15 minutes (if part of other effort); <1 hour standalone
 - Does not replace a full energy audit or diagnostics
 - No cost to participate

New Partners invited to join!
www.HomeEnergyScore.gov

Join the Better Buildings Residential Network

Connects energy efficiency programs and partners to share best practices to increase the number of homes that are energy efficient.

Membership: Open to organizations committed to accelerating the pace of existing residential upgrades.

Benefits:

- Peer Exchange Calls
 - Business Partners/Workforce
 - Marketing and Outreach
 - Evaluation & Data Collection
 - Financing/Revenue Streams
 - Moderate, Low-Income Markets
 - Multifamily Residential Market
 - Program Sustainability
- Tools, templates, & resources
- Recognition: media, materials
- Member generated initiatives
- Programming for new staff
- Newsletter updates on trends

betterbuildings.energy.gov/bbrn

Thank you

Danielle Sass Byrnett

Danielle.Byrnett@ee.doe.gov

For more information:

energy.gov/eere/better-buildings-residential

Next webinar:

Residential Energy Efficiency Deep Dive, Part Two

Thursday, December 18, 2014

3:00 – 4:00 PM ET

Register: <https://www1.gotomeeting.com/register/244353121>

Thank you!

Join us for the rest of the webinar series:

- ▶ **Residential Energy Efficiency Deep Dive, Part Two** – Thursday, Dec 18th 3:00pmET

▶ Speakers include **Amy Bryan of Jackson Electric Membership Corporation,**

Danielle Byrnett, US Department of Energy

Register here: <https://www1.gotomeeting.com/register/244353121>

- ▶ **On-Bill Financing** – Thursday, Jan 8th 3:00pmET

EECLP recognizes the benefits of on-bill financing and enables this option for eligible borrowers. Register here:

<https://www1.gotomeeting.com/register/230715008>

- ▶ **Solar Program Overview** – Thursday, Jan 22nd 3:00pmET

EECLP can help enable roof-top solar systems in the service territory of



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