South Carolina Rural Electric Co-ops
On-Bill Financing Pilot Program

John-Michael Cross
Environmental and Energy Study Institute
May 1, 2013
Help My HOUSE!
Shape Up Your Home for Energy Savings
On-Bill Financing for Home Energy Loans

• Provides low-interest loans for residential energy improvements, eliminating upfront costs for the homeowner
• Loan repayment added to homeowner’s monthly utility bill
• Payment history used in lieu of credit checks
• Positive cash flow for the homeowner: Payments structured to be smaller than the projected energy savings
Early Results and Projections

• Improvements made to 125 all-electric homes

• Avg. act. project costs per home: $7,684

• Avg. est. annual savings per home: $1,285

• Projected positive cash flow on 10-yr term at 2.5% interest rate

• Average est. payback: 6.0 years

• Pilot demonstrated “deep impact” savings that averaged an estimated 36.9% per home

• Collected data through Feb 2013
## Early Results and Projections

### Projected Energy Savings from the Average Home Participating in the Pilot

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<tr>
<td>Projected Electric Savings (kWh)</td>
<td>966</td>
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<td>Projected $ Savings</td>
<td>$107</td>
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Pilot Partners

- EESI, with support from the Doris Duke Charitable Foundation
- Electric Cooperatives of South Carolina
- Central Electric Power Cooperative
- Ecova
- Carton Donofrio Partners
• Founded in 1984 by a bipartisan Congressional caucus

• Independent non-profit organization that receives no Congressional funding.

• Source of non-partisan information on energy and environment policy development for Congress and other policymakers.

• Visit our website: www.eesi.org to find out more!
South Carolina Electric Cooperatives

- 20 electric distribution cooperatives
- Serve more than 1.5 million individuals in all 46 counties
- Contribute $1.4 billion per year to the state economy
South Carolina Cooperative Members

- 24% live in manufactured housing (three times the national average)
- 50% more likely to live below the poverty line
- In some months, many may spend 60-80% of income on energy
- 26% of SC counties (12 out of 46) qualify as Persistent Poverty Counties*

*(Defined as any county with a poverty rate of 20% or higher in every census 1970-2010)
Customer Satisfaction: Co-ops vs. IOUs

Source: American Customer Satisfaction Index, Q1 2013. For S.C., most recent.
SC Cooperatives’ Overall Goals

• Improve residential energy efficiency (10% by 2020)
• Reduce residential use and per-unit wholesale power costs (demand controls)
• Improve consumer’s relationship with local co-op (both participant & non-participants)
Projected Impacts of Full-Scale Program

• Energy savings
  – 2,700,000 megawatt-hours per year.
• Consumer savings
  – $270 million per year.
• Reduced CO$_2$ emissions
  – up to 2.4 million metric tons per year.
• Thousands of jobs
• Avoid paying for $\frac{1}{2}$ of a nuclear unit ($4$ billion)
One Member’s Story

$518  Dec. 2008
$ 95  Dec. 2009
$423  Saved

10 Month Savings
- 20,309 kWh
- $1,882 total savings
- $188 monthly average

Linda Butler

kWh Savings

29,638
9,329

2009  2010
Help My HOUSE!
Shape Up Your Home for Energy Savings

Loan Program Pilot
How the Process Works
Core Transaction Process

1. I.D of Homes to be Audited
2. Visual Audit by Energy Advisor
3. Comprehensive Audit by BPI Certified Auditor
4. Selection of Contractor
   Work proceeds based on audit specs
5. If qualified, Loan Processed & Education about savings & loan
6. Review of Audit Results & Decision as to Cost Effectiveness
7. Post-audit by BPI Certified Auditor
8. KW Savings pays Contractor
9. Member begins making on-bill repayments
The Visual Audit

- A walk-through inspection by a co-op “Energy Advisor” (EA)
- If home is eligible, EA asks member to complete a loan app
- Initial BPI audit ordered
Processing the Loan Application

- Application sent to 1st Cooperative Federal Credit Union
- Comprehensive audit (BPI) scheduled in the home
The Initial Audit ("Test In")

- Confirms (or not) that home qualifies for pilot and loan
- Defines measurable efficiency targets
- Prescribes the work needed
Member Gets Estimate(s)

• Homeowner calls qualified contractor(s) for bids
• Member notifies the EA when a bid has been accepted
• EA forwards bid info to credit union to create final loan documents
Finalizing the Loan

- Member signs loan documents
- 2.5% loan, most often over a 10-year period
- Work can begin after three-day waiting period
The Home is Weatherized
Home Improvement Measures

Measure Installation

- Air Sealing: 99%
- Duct Leakage Reduction: 95%
- Attic Insulation: 91%
- HVAC: 84%
- Floor Insulation: 31%
- HVAC tune up: 2%

% of Homes
The Exit Audit ("Test Out")

- EA orders second BPI audit to check home’s performance after work is completed
- If targets are met, co-op approves payment to contractor
- If targets are not met, contractor must return
- Important quality assurance for members!
Loan Payments Begin

• Member begins paying back the loan on monthly electric bill

• Co-ops monitor and record impact of efficiency upgrades
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# Early Results and Projections

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<th>Measure</th>
<th>Annual Savings ($)</th>
<th>Simple Payback (Yrs)</th>
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<tr>
<td>Attic Insulation</td>
<td>$212</td>
<td>5.80</td>
</tr>
<tr>
<td>Floor Insulation</td>
<td>$468</td>
<td>1.56</td>
</tr>
<tr>
<td>HVAC</td>
<td>$616</td>
<td>7.88</td>
</tr>
<tr>
<td>Duct Sealing</td>
<td>$228</td>
<td>2.96</td>
</tr>
<tr>
<td>Air Sealing</td>
<td>$155</td>
<td>6.26</td>
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## Early Results and Projections

### Average Projected Savings by House Type

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<tr>
<th>House Type</th>
<th>#</th>
<th>Avg. Est. Annual kWh Savings</th>
<th>Average Annual kWh</th>
<th>% Annual kWh Savings</th>
</tr>
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<tr>
<td>Single Family Detached</td>
<td>53</td>
<td>10,685</td>
<td>31,511</td>
<td>33.9%</td>
</tr>
<tr>
<td>Mobile Home (DW)</td>
<td>68</td>
<td>12,383</td>
<td>31,463</td>
<td>39.4%</td>
</tr>
<tr>
<td>Mobile Home (SW)</td>
<td>4</td>
<td>10,176</td>
<td>28,486</td>
<td>35.7%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>125</td>
<td><strong>11,593</strong></td>
<td><strong>31,388</strong></td>
<td><strong>36.9%</strong></td>
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Measured Results
Member Survey Results

• 96% satisfied with quality of work
  – 83% very satisfied

• 96% more comfortable in their homes
  – 77% are a lot more comfortable

• 92% liked how the pilot was put together
Rural Energy Savings Program (RESP)

- Proposed federal loan program to support on-bill financing projects
- To be managed by USDA’s Rural Utility Service
- Would provide 0% loans to co-ops and public utilities for up to 20 years
- Passed by House in Sept 2010 with bipartisan vote ($993 million over five years)
- Passed by Senate in June 2012 as part of the farm bill (funding levels not specified)
- Supported by National Rural Electric Cooperatives Association (NRECA)
RUS Proposed Rule

• Proposed $250 million per year loan program to rural electric utilities for energy efficiency projects

• Co-ops would be charged the direct Treasury rate plus one-eighth

• SC pilot encouraged USDA to move forward

• Awaiting announcement of final rule
For More Information

• EESI fact sheets at [www.eesi.org](http://www.eesi.org)
  – “Help My House” On-Bill Financing Pilot in South Carolina
  – Rural Energy Savings Program
  – On-Bill Financing, Helping Homeowners Implement Energy Efficiency Improvements

• [RUS Proposed Rule for EE Loan Program](http://www.eesi.org)

• Contact: John-Michael Cross
  Policy Associate
  [jmcross@eesi.org](mailto:jmcross@eesi.org)
  202-662-1883