

Help My House Loan Pilot Program

Program Design and Results



The **Help My House (HMH)** Loan Pilot Program was a test of energy efficiency as both a consumer product and a cost-effective replacement for investment in new generation by electric utilities. HMH provided on-bill financing (OBF) for energy efficiency measures in 125 homes, and analyzed the financial impacts on the electric system shared by South Carolina's 20 co-ops. Participants reduced their electricity use by more than a third—an average savings of nearly 11,000 kWh per home per year—and were extremely satisfied with the pilot and their co-ops. And, co-ops now better understand the financial impacts of an expanded program.

What is On-Bill Financing?

OBF allows members to finance energy efficiency measures with low-interest loans that they repay on their monthly electric bills. More than 30 co-ops offer OBF programs. South Carolina's HMH program is based on a 2010 state law that ties the loan to the meter and allows co-ops to disconnect for non-payment. The loan is passed on to the next homeowner or tenant when the home is sold.

Pilot Program Background

The pilot program was spearheaded by Central Electric Power Cooperative (Central), the wholesale power provider to South Carolina's 20 electric cooperatives and the 1.5 million consumers they serve, and The Electric Cooperatives of South Carolina (ECSC), the co-ops' marketing and public policy partner. In 2010, Central's Board of Directors adopted a set of energy efficiency objectives that included a 10 percent reduction in residential energy use within 10 years and a reduction in average wholesale power costs for the residential class, all while maintaining or improving member satisfaction.

The pilot was created to test an OBF program that could help meet these goals in a region where family income levels are 15 percent below the national average. Many families in this region also lack the cash for down payments or access to financing for energy efficiency investments. The pilot program was designed to finance efficiency upgrades through 10-year, 2.5 percent interest loans and to examine the impact on individual members, participating co-ops and wholesale power purchasing. Central and ECSC helped form a non-profit, KW Savings, to administer loan funds obtained from the U.S. Department of Agriculture's Rural Economic Development Loan and Grant Program (REDLG).

Participating Cooperatives

Aiken Electric	Palmetto Electric
Black River Electric	PeeDee Electric
Broad River Electric	Santee Electric
Horry Electric	Tri-County Electric

Project Team

- The Environmental and Energy Study Institute (EESI) in Washington, D.C. assisted with program design and outreach. EESI informs key stakeholders, including Congress and opinion leaders.
- Ecova, a firm that implements energy efficiency programs for utilities, assisted with program planning, management and analysis.
- Integral Analytics conducted the cost-effectiveness analyses.
- Carton Donofrio Partners, a marketing and consumer research firm, conducted surveys and supported training and marketing efforts.
- 1st Cooperative Federal Credit Union prepared and processed loan documents.
- KW Savings paid contractors and now manages loan repayments and program processes.
- Participating co-ops marketed the pilot, screened prospects, conducted audits, presented loan documents, advised participants and provided strategic project guidance.

Help My House Process

1 Energy advisor identified and screened participants

Co-ops looked for homes with higher than average energy usage

2 Energy advisor conducted visual audit

This brief walk-through audit determined if a more comprehensive audit was needed

3 Auditor conducted comprehensive audit and modeling

Blower door and duct blaster tests by a certified auditor and computer modeling helped determine measure cost-effectiveness and measurable targets for quality assurance

4 Participant got bids, selected contractors and signed loan documents

Contractors were trained, approved and used standard bid sheets

5 Measures installed

Contractors performed efficiency retrofits

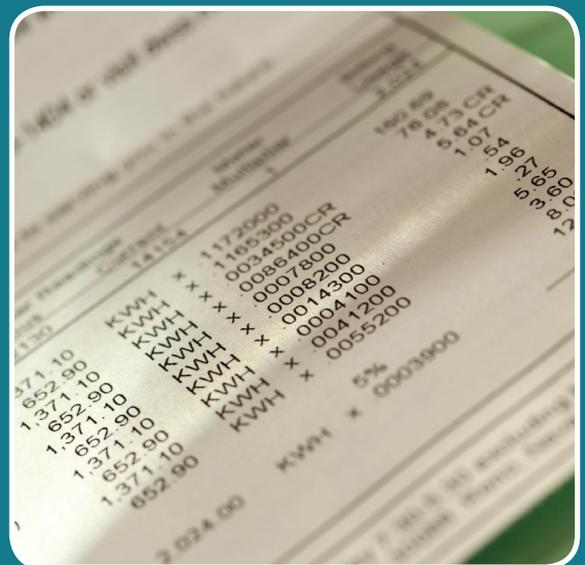
6 Projects inspected and approved, KW Savings paid contractors

Inspection included testing for air leaks and duct leakage

Program standards and procedures were consistent throughout the pilot, but co-ops participated in slightly different ways. Most conducted their own outreach and marketing, and designated an employee to be an energy advisor. A few co-ops volunteered staff to perform the more comprehensive energy audits.

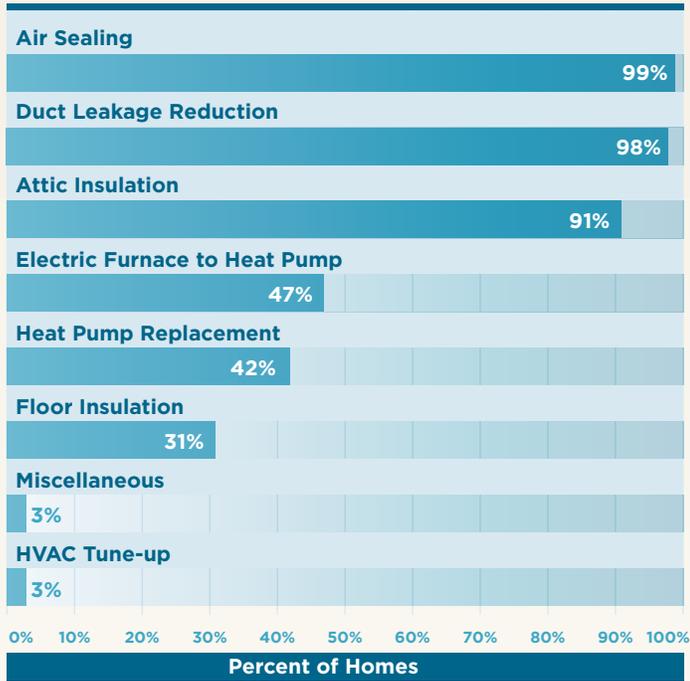
Data Collection and Analysis

Co-ops documented at least one year of billing history before and after measures were installed. Integral Analytics used this data to determine energy savings, demand savings and cost-effectiveness for each home. Because weather fluctuates, they also “weather-normalized” the data to illustrate what the savings would be for a typical meteorological year.



Results

Installations began in June 2011 and 125 were completed by February 2012, which was 25 more than the program's goal. Fifty-three were single family detached homes, and 72 were manufactured homes. Nearly every home needed air sealing and duct sealing. More than 80 percent received HVAC upgrades, and more than 90 percent of the homes required attic insulation. The average loan was \$7,684.



The results were impressive. The average home cut electricity use by 34 percent, nearly 11,000 kWh per year. Average payback is just over six and a half years — far shorter than the 10-year loan term. The average participant is making the loan payment and still pocketing \$288 per year. The measures are expected to last at least 15 years. As a result, after the loan is paid off, annual savings for an average home will increase to more than \$1,100 per year, producing a net savings after 15 years of more than \$8,500.

Average Savings and Loan Payments



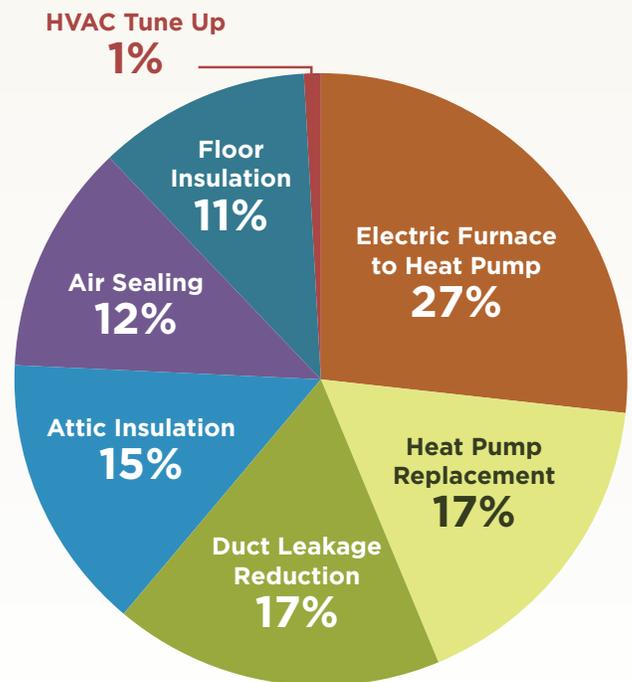
	Predicted	Actual
Annual kWh Savings	11,593 kWh	10,809 kWh
Annual \$ Savings	\$1,285	\$1,157
Project Costs	\$7,684	\$7,684
Project Simple Payback	6.0 years	6.6 years

Central pays more for power during peak, so the performance of the HMH homes during system (coincident) peak is important. The coincident peak demand savings were 27 percent during the summer peak in June, and 46 percent during the winter peak in January.

Members expressed a high degree of satisfaction with the pilot program and their co-ops. A post-project survey showed that the vast majority of program participants are more satisfied with their co-op as a result of participating in the HMH program. Why? They have lower electricity bills. They feel that their co-op is trying to help them. They had a positive experience with one or more of the select group of trained contractors, and their homes are now more comfortable.

While it is not possible to measure savings from individual measures, modeling predicted that HVAC upgrades (sealing ducts, and replacing electric furnaces and older heat pumps) would account for the majority of the savings.

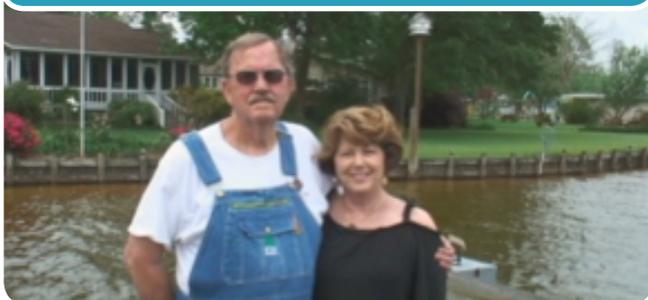
Distribution of Savings from Pilot Measures



A Help My House Success Story

Teri and John Norsworthy, both retired and living on fixed incomes, routinely paid high electricity bills. “Last year our electric bill went as high as \$500 in one month,” Teri explained. The couple, whose home is served by Santee Electric, jumped at the chance to participate in the HMH pilot, and ended up with more insulation, a new heat pump, duct sealing and air sealing.

“Today,” says Teri, “our home stays at the temperature we set the thermostat on, and the entire home is very comfortable.” Electric bills are way down to “between \$150 and \$200 less a month.” Her husband John agrees, saying, “You save enough to pay for the work. It doesn’t make sense to me that anybody wouldn’t do it.”



Norsworthy Home

Site built home, 2,013 sq. feet, 3 bedrooms

Energy efficiency measures: New heat pump, duct sealing, air sealing, and attic insulation

Recommendations

1. Co-ops are encouraged to consider offering OBF programs. The HMH pilot showed that OBF programs can be a great service to members.
2. Co-ops that offer OBF should collaborate with other co-ops and with state and national organizations to standardize a program to reduce costs and improve quality.
3. Co-ops offering OBF should identify an organization to serve a centralized support function to improve the efficiency and the quality of program delivery.
4. OBF programs should support emergency replacements for heat pumps and water heaters.
5. OBF programs should deploy load control devices, which will improve load factor and benefit the system, the power purchaser and even the non-participants.
6. Consider broadening the energy service offering in OBF to include renewables and eventually energy storage.
7. A supporting organization or group of affiliates (such as Central, ECSC and KW Savings in the S.C. example) should facilitate the development of business plans for interested co-ops to foster collaboration and to assist co-ops in fully recovering program administrative costs.

Participant Testimonials

“I am saving about \$300 to \$400 a month.”

“They were genuinely concerned about my high utility bills.”

“It is not a big payment. It is something I can afford.”

“I would not be in the home if I did not get the Help My House loan.”

“During winter, it keeps it warm. During summer, it keeps it cool.”

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