How We Got Here

Rural Energy Savings Program
“Rural Star”
(H.R. 4785 and S. 3102)
Rural Energy Savings Program

• Low-interest loans from RUS for upgrades

• Money saved repays loans

• Low-risk lending, repaid through power bill

GOAL: Reduce Energy Use 20% by 2020
What Happened?

• RESP passed the US House in September 2010, failed to reach the US Senate in that session
• Political tide turned in 2011
• Still a future possibility (2013?), members of Congress still actively promoting/supporting it
Co-op Mantra

• Measure twice, cut once

• It costs extra to make water run uphill

• Fail fast, fail cheap
Help My House Loan Pilot

• A small-scale residential energy efficiency research pilot

• Low-interest loans, on-bill financing, whole-house weatherization

• Uses Rural Energy Savings Plan model to 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
Partners

Bipartisan Environmental and Energy Study Institute
Partners
• $740,000 REDLG loan to Central Electric Power Cooperative.
• First loan of its kind dedicated strictly to study of energy efficiency
Cost-Effective Measures

• Weatherize homes
• Replace resistance heating and old heat pumps
• Target ROI is 6.6 years or better
The Pilot Transaction

1. Co-op screens, identifies prospects
2. CSR calls prospects
3. Walk-through audit
4. Prospect signs loan application
5. Full audit by BPI certified auditor

6. Auditor uploads report for KW savings, credit union
7. Member solicits bids, informs co-op
8. Credit union processes loan
9. Member signs loan documents
10. Installation

11. Auditor inspects, notifies co-op, KW Savings
12. KW Savings pays contractor, notifies co-op and member
13. Member begins making on-bill repayments
Status Report

- 8 co-ops participated
- 125 homes weatherized
- Total Est. kWh Savings 1,162,190
- Total Est. $ Savings $126,586
- Average Act. Project Costs $7,151
- Average Est. Annual $ Savings $1,229
- Average Payback (Yrs.) 5.82
A drive for data
Now that the work is done

• Monitor daily energy use in weatherized homes for at least 12 months
• Measure impact on demand
• Compare new data with historical usage and demand
• Include findings in EESI report in 2012
• Support co-ops that want to continue
Why Do This?
S.C. Co-ops Today

- 20 S.C. cooperatives pay 70% of Santee Cooper’s capital costs and use 55% of their electricity
- Serve 1.5 million people, cover 70% of the land area
- Largest distribution system in S.C.
S.C. cooperative members are

- Affected by poverty
  - $31,799 — S.C. average personal income
    - Approximately 19% lower than national average
S.C. cooperative members

- 50% more likely to live below the poverty line
  - 17% statewide
- 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)
S.C. cooperative members are

- Affected by climate
  - Winter
    - Electricity is primary form of heating
      (80% of cooperative homes use electricity as primary form of heating)
  - Summer
    - S.C. ranks 7th in cooling degree days per year
S.C. cooperative members are

• Impacted by housing stock
  • 24% of electric co-op homes in S.C. are manufactured homes (three times higher than the national average)
S.C. cooperative members are

- Affected by functional illiteracy

- S.C. has 5th highest percentage of Level 1 and Level 2 illiteracy — 56%
S.C. cooperative members are

• Affected by coal-based generation
  • Over 80% South Carolina cooperative electricity is generated from the burning of coal (average system cost of $750 per KW)

Replacement Natural Gas- $3,000 per KW
Replacement Nuclear- $5,000 per KW
Two Paths to the Future

We are nearing the fork in the road.
Path One

• Default to nuclear
  • Expensive.
  • Politically volatile in light of Japan’s recent experience at Fukushima.
  • High costs potentially mitigates investment in other renewable resources.
Path Two

• Coordinated build of nuclear -- at a slower pace

• Investment in evolving technologies and in renewables that work for S.C.

• Unprecedented investment in energy efficiency
A huge payoff: Energy efficiency retrofits & other residential programs

<table>
<thead>
<tr>
<th>Energy and Consumer Forecast for 2020</th>
<th>Residential total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (megawatt-hours)</td>
<td>13,344,000</td>
</tr>
<tr>
<td>Goal -- save 20%</td>
<td>* 0.20</td>
</tr>
<tr>
<td>Energy efficiency savings (megawatt-hours)</td>
<td>2,668,800</td>
</tr>
</tbody>
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20% Reduction in Residential Use
Possible S.C. Results

• 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.

• Avoid paying for ½ of a nuclear unit ($4 billion)
Possible S.C. Results
Coastal Carolina University Economic Study

• Robust job creation in counties of persistent poverty
• 1,500 new SC jobs created in first year
• 4,618 new SC jobs created by 2020
• 7,113 new SC jobs created by 2030
Questions to Ask and Answer

• What are the lessons learned from the pilot project?
• Is the model replicable in other states and for other electric service providers?
• Is the model readily scalable, in South Carolina and in other states?
• What adaptations may need to be made?
• How can federal policies best support?
S.C. Electric Cooperatives Pilot Program
NASEO Financing Committee  February 2, 2012
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