

# Energy efficiency: serving the cooperative consumer/owner



May 20, 2011

**What is  
an electric  
cooperative?**



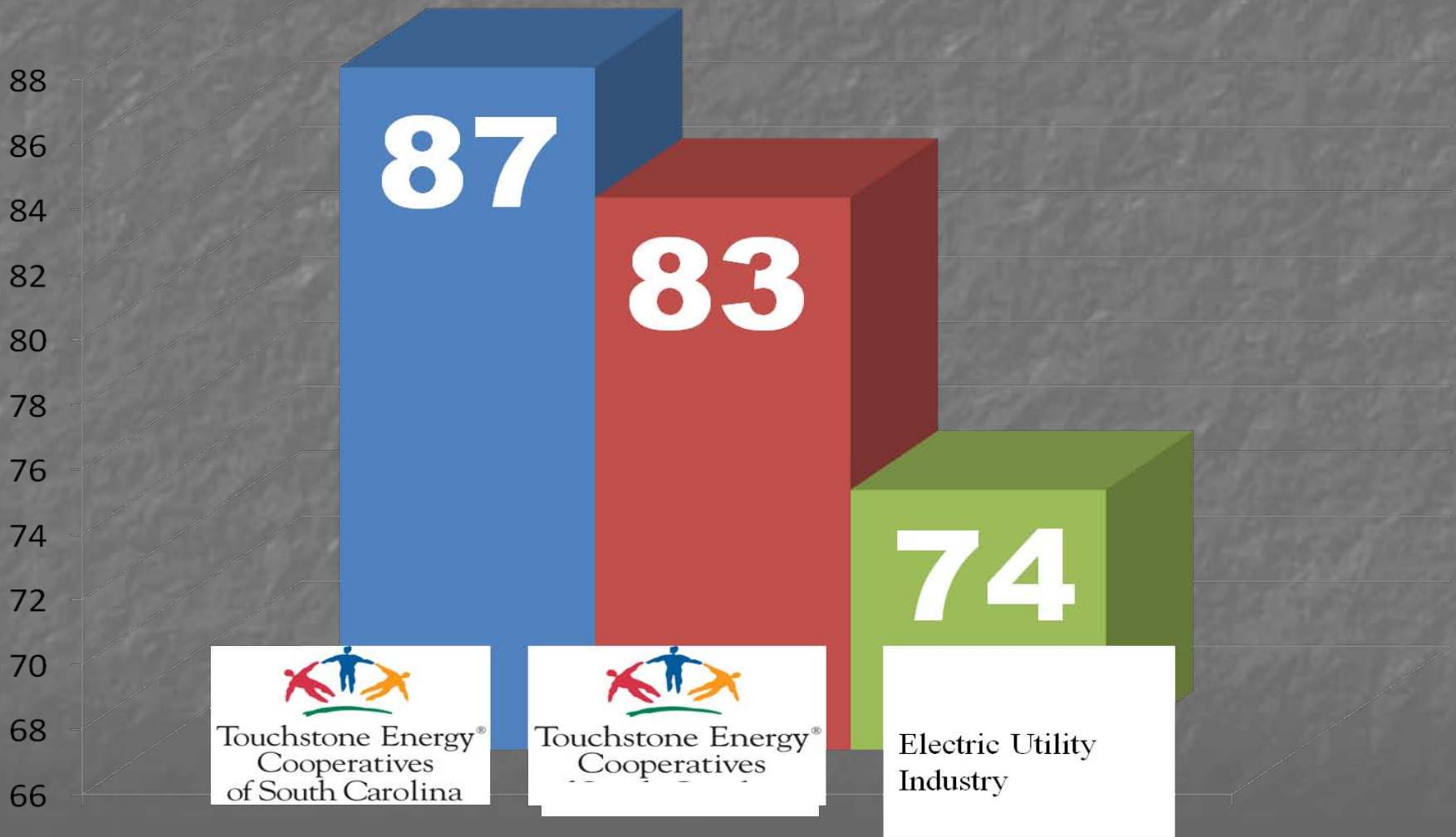
**An electric cooperative is a business established to provide reliable, at-cost electricity to its consumers, the owners of the business.**



# Co-ops in S.C. Today

- Today, 20 South Carolina distribution cooperatives serve 1.5 million consumers, more than any other S.C. utility

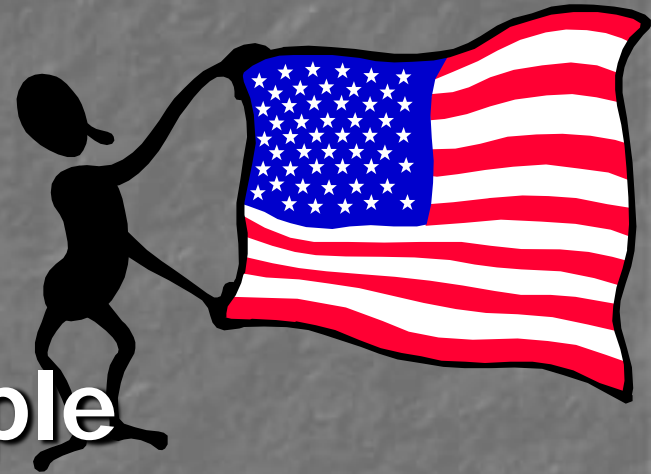
# Customer Satisfaction: Co-ops vs. IOUs



Source: American Customer Satisfaction Index, Q1 2011. For S.C., most recent.

# U.S. Electric Cooperatives

- In 47 states
- Serving 42 million people
- Covering 75% of the land area



For Those We Serve...

# S.C. cooperative members are

- Affected by poverty
  - \$27,580 — S.C. average personal disposable income
    - Approximately 20% lower than national average



# 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 7<sup>th</sup> 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 5<sup>th</sup> 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

# Targets for Energy Efficiency

Weatherization	160,000 homes	290,000,000 kWhs/yr
Replace Resistance Heating	60,000 homes	550,000,000 kWhs/yr
Replace Old Heat Pumps	32,000 homes	183,000,000 kWhs/yr
		1,023,000,000 kWhs/yr

10% Reduction in Residential Use



# Energy Efficiency Goals

## Energy and Consumer Forecast for 2020

	Residential		
Forecast	Total		
Members	623,000		
Energy (MWh)	13,344,000		
EE Savings 20% (MWh)	2,668,800		



20% Reduction in  
Residential Use

# 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

# Implementation Costs

- Overall subsidy = 50% subsidy needed to drive investment (GDS study 2007)
- Making sure investment is well spent (On-bill financing, S.C. Code Ann. Section §58-37-50)
- Ensure quality and confidence for ALL cooperative members-consumers



# Cost-Effective Measures

- Target ROI is 6.6 years or better
- Replace old electric heat pumps, electric furnaces, or strip resistance heating with new heat pump
- Primarily duct sealing, insulation, weatherization

# Making it Easy on Consumers

- Immediate energy savings
- No upfront costs
- Low-interest loans
- On-bill financing

# Home Energy Assessment and Coordination of Upgrades

- Need confidence in data and upgrade work, and consistently good interaction with customers, while minimizing number and duration of on-site visits
- Cooperative staff walk-through
- Initial BPI audits
- Post-retrofit audits/inspections

# After 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

# Questions that EESI Report Will Ask and Answer

- What are the lessons learned from the RESP pilot project?
- Is the model replicable in other states and for other electric service providers?
- Is the model readily scalable, in South Carolina or other states?
- What adaptations may need to be made?
- How can federal policies best support?

# Challenges to success of pilot and larger-scale effort

- Housing stock
- Illiteracy
- Unprecedented scale of market penetration
- Capital for large-scale effort

# Advantages to success of pilot and larger-scale effort

- Cooperatives are nimble
  - Limited regulatory barriers
- Historic high levels of consumer satisfaction
- Business model does not require shareholder return, only consumer/owner satisfaction
- Need to succeed (avoiding \$4 billion cost of  $\frac{1}{2}$  of a nuclear unit)

# Questions?

