

Focus on Energy Early Retirement Programs

2009 ENERGY STAR®
Appliance Partner Meeting

Program Perspective

- Refrigerator/Freezer Pick-Up Program
 - Program Design
 - Marketing/Outreach
 - Evaluation and lessons learned
- HVAC Early Retirement Program
 - Program Design
 - Marketing/Outreach
 - Evaluation and lessons learned
- Future program/Research

Focus on Energy

- Wisconsin's statewide energy efficiency and renewable energy program
 - Legislature created in 1999 and restructured in 2005
 - Helps implement projects that would not occur otherwise
- Eligibility based on customer's electric or natural gas utility
- About 90% of customers in Wisconsin are eligible for program

Refrigerator Pick-Up Program

- Program Design

Encourage customers to turn in old working refrigerator and freezers for recycling. Units picked up from customers home

- Marketing/Outreach

Utility bill inserts, in-store tear pads, radio advertising and newspaper advertising

Refrigerator Pick-Up Program

Five Step Evaluation Approach

1. Determine kWh and KW savings per appliance based on age and type
2. Analyze total units picked up through program
3. Estimate deemed savings based on step 1 & 2
4. Adjust for use
5. Estimate net-to-gross (attribution) factors

Refrigerator Pick-Up Program

1. Determine kWh and KW estimates for refrigerators and freezers using age and model.

2. Analyze program database to acquire count of appliances obtained through the pick up program

Appliance Type	Total Units
Refrigerator	13,704
Freezer	4,508
Dehumidifier	949
Room AC	1,575

*Less than 1% of appliances picked up through the program were recorded as being manufactured after 2000.

Refrigerator Pick-Up Program

3. Estimate deemed savings by applying degradation factor for all appliances that have age data using NEAT tool.

Appliance Age	Adjustment Percent to Energy Consumption
Less than 5 years old	0%
5 to 9 years old	10% (multiplier of 1.1)
10 to 15 years old	20% (multiplier of 1.2)
More than 15 years old	30% (multiplier of 1.3)

Refrigerator Pick-Up Program

4. Adjust for use – telephone survey conducted to determine appliance use, non-use or partial use.

Appliance Type	Use Rate
Refrigerator	62.8%
Freezer	59.9%
Dehumidifier	70.7%
Room air conditioner	65.3%

Refrigerator Pick-Up Program

5. Estimate net-to-gross (attribution) factors – use rate survey was also used to ask series of questions to determine fraction of participants who would have otherwise recycled their appliance (free-riders).

Appliance	Attribution Rate
Refrigerator	30%
Freezer	31%
Dehumidifier	31.6%
Room AC	28.3%

Refrigerator Pick-Up Program

Energy savings program can claim:

Appliance	Gross kWh	Verified Gross kWh	Net kWh
Refrigerator	1,057	898	269
Freezer	961	700	218
Dehumidifier	64	105	33
Room AC	143	142	40

Overall Findings

- Appliance pick up participant survey
 - Attribution of 0 for those reporting “don’t know”
 - Attribution of 0.5 for reporting “would have gotten rid of in absence of program”
- Program no longer cost effective to run when attribution applied to energy savings
- Program design must target those operating secondary unit vs. those purchasing new unit
- Program could claim acceleration of savings if mortality rate is known
- Many unknowns with the secondary market

HVAC Early Retirement

– Program Design

- Encourage customers to replace existing functional but inefficient central air conditioners with new efficient units.
- Marketed to customers in older neighborhoods to try to target units that were at least 10 years old and with an average SEER of 9.

– Marketing/Outreach

- Disseminate information through HVAC equipment distributors and work with contractors to deliver program.
- Subcontractor pre-screened eligible CAC's to verify condenser is operational.

HVAC Early Retirement

– Evaluation and Lessons Learned

- 45% of central ac's replaced through the program were not part of an accelerated replacement.
- Statewide new purchase program saw a drop in participation
- Other research and program evaluation indicated that majority of CACs are replaced while still operable
- Customers replaced older units they expected to fail not units they deem inefficient
- Gaming issues to meet program requirement of operating unit

Future Considerations

– Better Targeting

- Program identifies and pre-qualifies equipment eligible for bonus
- Target high users through energy billing data

– Instill sense of urgency

- Help reduce number of free riders

– Understand equipment mortality

- When would appliance fail on its own i.e., probability a 10 year old unit will last 1, 2, 3, or 4 more years.

Future Considerations

- Secondary market
 - What impact do programs have on the secondary market
- Optimal age or efficiency range to target
 - Collect age and efficiency of existing unit
 - Survey questions to get at plans to replace and operating condition of existing equipment

Contact Information

Bobbi Fey

888.509.3247 extension 140

bobbif@weccusa.org