
2004/2005 California Nonresidential Audit Evaluation Results Summary

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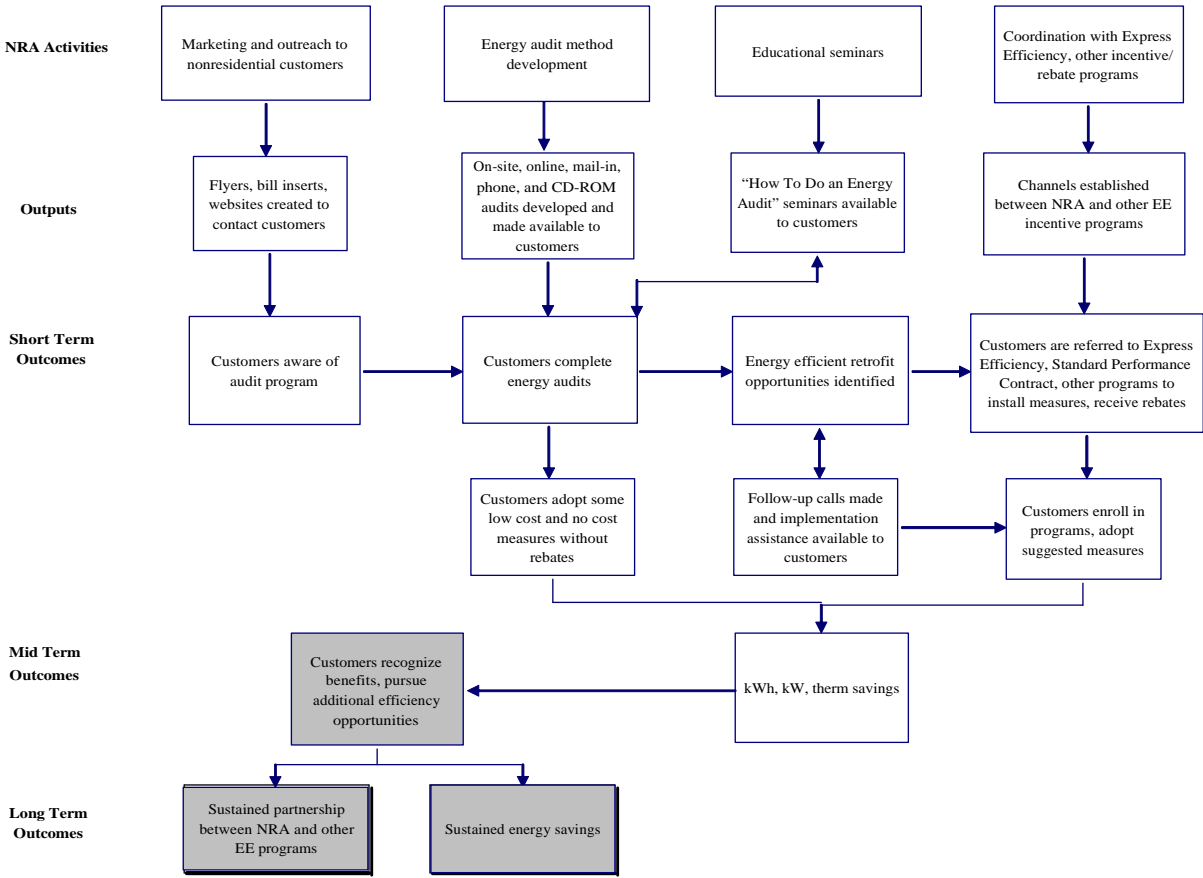
Overview

- Audit Program Logic Model
- Evaluation Overview
- Key Characteristics of Audit Program Net and Gross Impacts
- Audit Effects Over Time – Market effects and Participant Adoptions by Customer Size and End-Use
- Quantifying the Benefits of an Audit Follow Up Program

Size Definitions

- Very Small: less than 20 kW, or 10,000 therms
- Small: 20–100 kW or 10,000 to 50,000 therms.
- Medium: 100–500 kW or 50,000 -250,000 therms
- Large: >500 kW or > 250,000 therms
- Electricity consumption takes precedent over gas consumption
- Accounts are aggregated to site level before determining size

Logic Model



Shaded boxes indicate induced outcomes that are outside of the direct program influence

Evaluation Overview

Study Objectives	Existing Data Sources					Data Collection							
	Program Tracking Data and Previous EM&V Survey Data	Program Tracking Data and Previous EM&V Survey Data	Program Tracking Data	Program Tracking Data	Audit Tools, Reports, Incentive Applications, Training Materials and Other	Participant Long-Term Survey	Participant Gross and Net Impact Survey	Medium/Large Participant Gross and Net Impact Follow-up Phone /On-Sites	Participant Process Survey	Cross Program Survey	"How to Do an Audit" Instructor and Student Surveys	Non-participant Survey	PM Interviews
Program Year	2002	2003	2004	2005	2004-2005	2002	2003-2004	2003-2004	2005	2003-2005	2006	-	2005-2006
Survey Completes	-	-	-	-	-	400	800	50-100	400	200	14	1500	10
Tracking System Assessment													
Verify program audit completes			•	•	•								
Assess tracking system content			•	•	•								
Assess follow-up system content and frequency			•	•	•								
Complete participation matrices and sample designs	•	•	•	•	•								
Examine marketing effectiveness by delivery approach			•	•	•								
Impact Assessment													
Estimate Small/Very Small customer gross kW/kWh and therm savings		•	•		•	•						•	
Estimate Small/Very Small customer net kW/kWh and therm savings		•	•		•	•						•	
Estimate Medium/Large customer gross kW/kWh and therm savings		•	•		•	•	•					•	
Estimate Medium/Large customer net kW/kWh and therm savings		•	•		•	•	•					•	
Complete measure recommendation gap analysis			•	•		•							
Long-Term Assessment													
Document persistence of audit-based market effects	•	•	•			•	•	•				•	
Examine participant adoption rates as a function of time elapsed since the audit	•	•	•			•	•	•				•	
Process Assessment													
Examine program awareness/sources of awareness						•		•				•	
Measure participant energy efficiency intentions and knowledge						•		•				•	
Assess participant satisfaction								•		•			
Estimate effectiveness of audit follow-up initiatives								•					•
Assess program marketing, delivery and training			•	•	•			•		•			•
Follow-up on previous EM&V delivery recommendations			•	•	•			•		•			•
Examine program effectiveness using logic models								•		•			•
Conduct audit practices assessment								•		•			•
Examine cross-program influence of audits	•	•	•	•	•	•		•	•		•		•
Cross Program Assessment													
Tracking System Assessment	•	•	•	•									
Cross Program Gross and Net Impact Assessment		•	•			•	•		•			•	

^ Includes Standard Performance Contracting.

Gross Impact Estimation

- Telephone surveys to collect self-reported installations
- Deemed savings, work papers and custom engineering analysis to assign ex-post impacts
- SAE regression analysis to verify estimates
- Rebated measures are not considered part of NRA Program Gross Impacts
 - Measure found in rebate program tracking databases
 - Measure self reported to have been rebated

Net Impact Estimation

- Measures adopted subject to Free Ridership Survey Battery
 1. Decision to purchase
 2. Timing of purchase
 3. Efficiency of purchase
- Spillover is undefined / unmeasured
- Self-report based attribution methods used to allocate impacts from rebated adoptions across rebate and audit programs

Impact Findings

- SAE regression analysis adjustments.
 - Lighting .47
 - Cooling .69
- Most medium/large customer measure adoptions were Rebated
 - 85% of Medium/Large Customer Gross Impacts were rebated
- Net-to-Gross Ratios .30 - .34 for Non-Rebated Items.
 - For Items purchased through Express Efficiency, Higher NTG - .53 - .63
- 22 percent of Audit net benefit comes from non-rebated activity
 - 22 percent of Audit net benefit is typically credited to program

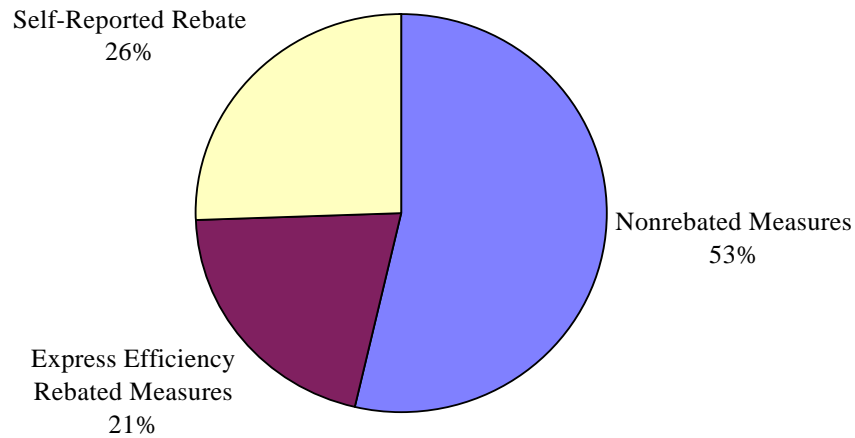
Key Finding

- Important achievements of the Audit Program are not reflected in the net impact of non-rebated adoptions
 - Audits refer customers to Incentives. An influential audit is likely to result in *rebated* adoptions, especially when incentives are widely available

Cross Program Total Net Impact Distribution by Rebate Status

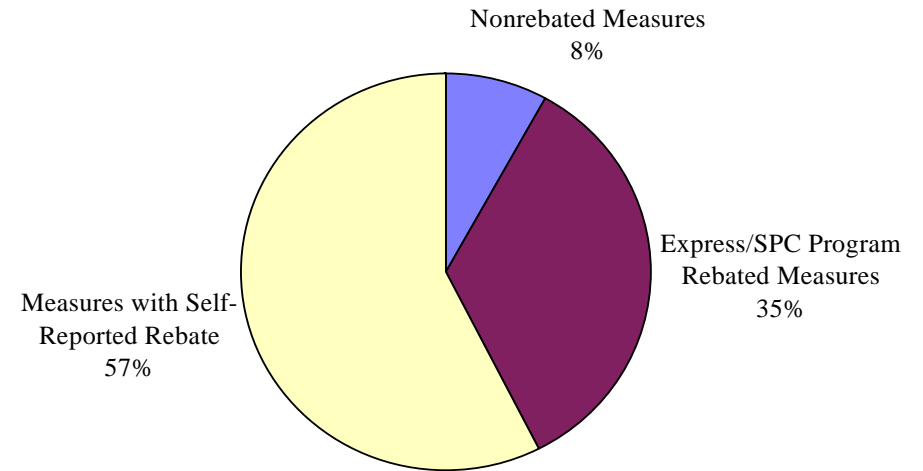
Very Small and Small Company

Cross-Program Total Net Impact = 35,976 MWh

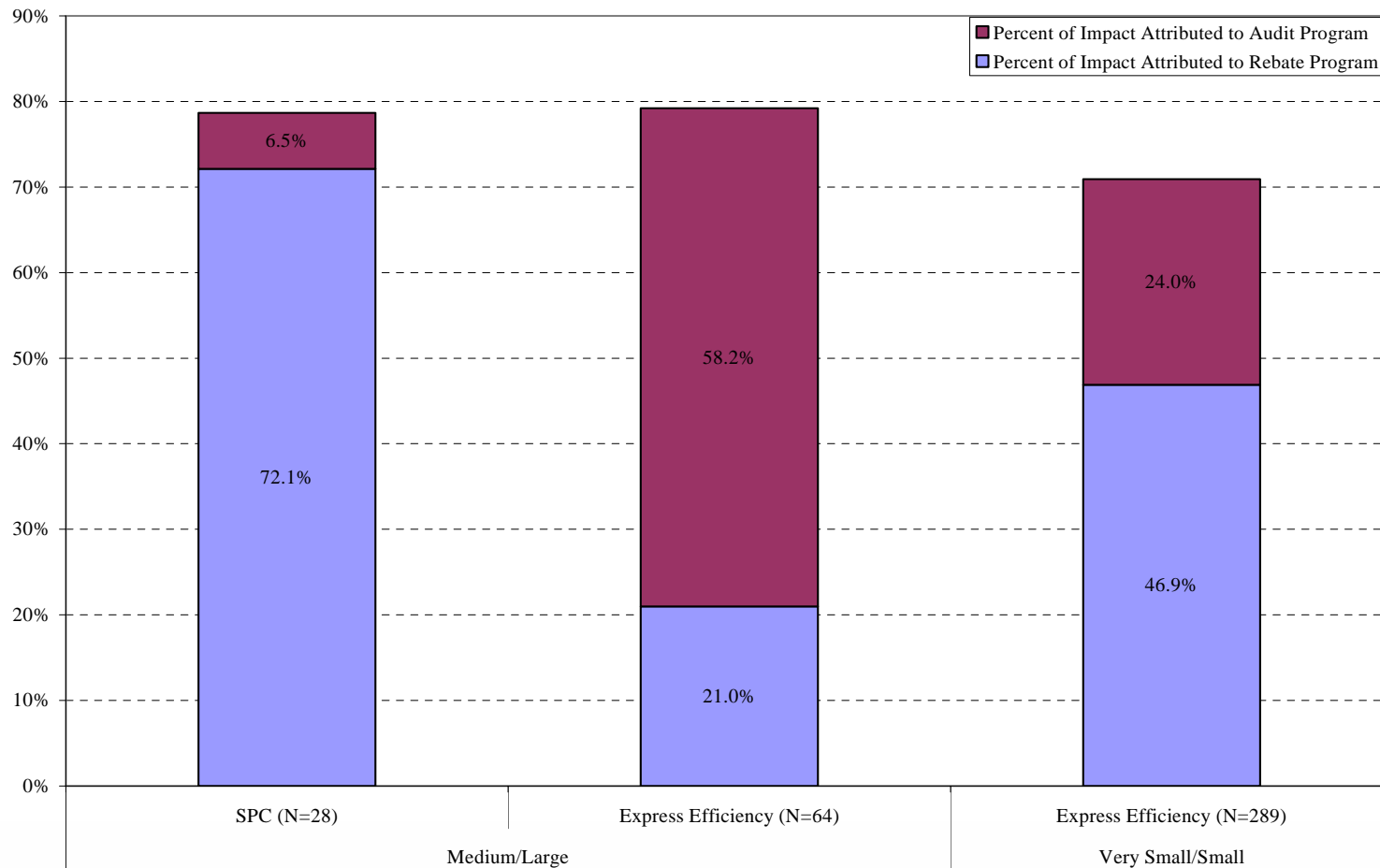


Medium and Large Company

Cross-Program Total Net Impact = 83,567 MWh

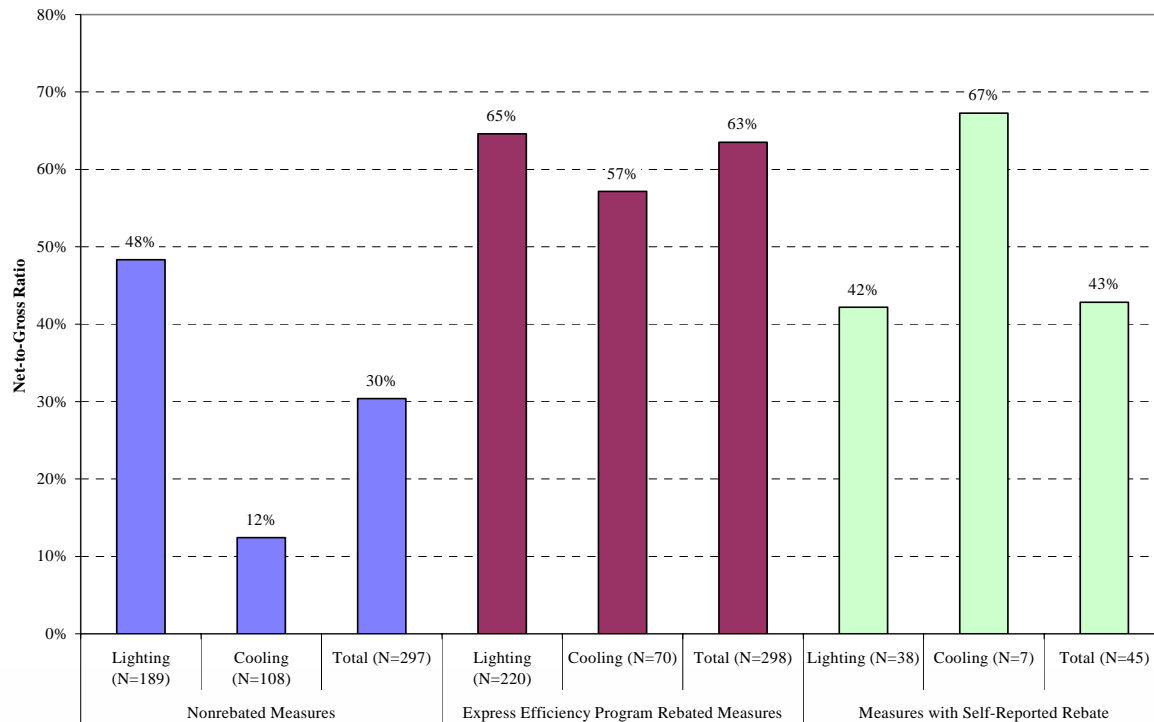


Self Report Based Attribution of Rebated Measure Impacts to the Audit Program and Rebate Programs



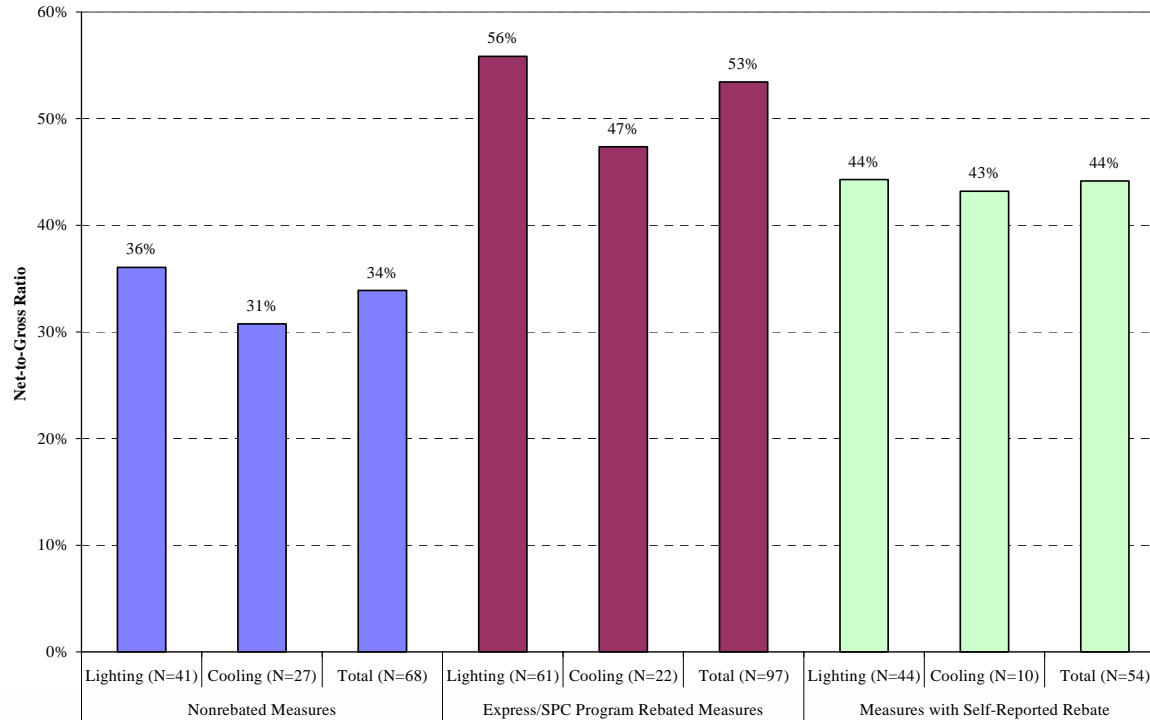
Program Influence is Greater Through Rebated Adoptions

Very Small and Small Customer Comparison of Net-to-Gross Ratios by Measure Rebate Status, kWh Impact Weighted



Program Influence is Greater Through Rebated Adoptions

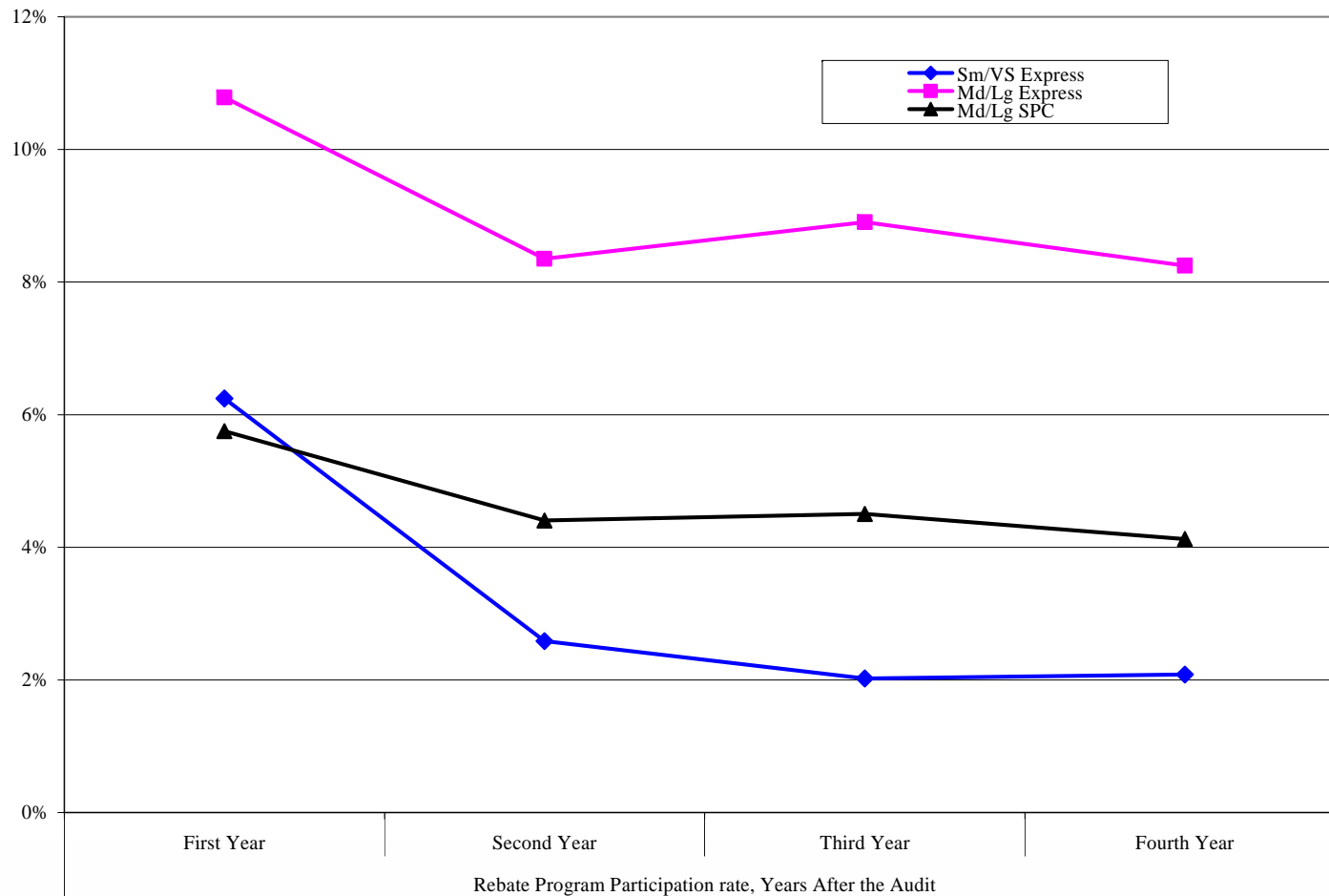
Medium and Large Customer Comparison of Net-to-Gross Ratios by Measure Rebate Status, kWh Impact Weighted [\[1\]](#)



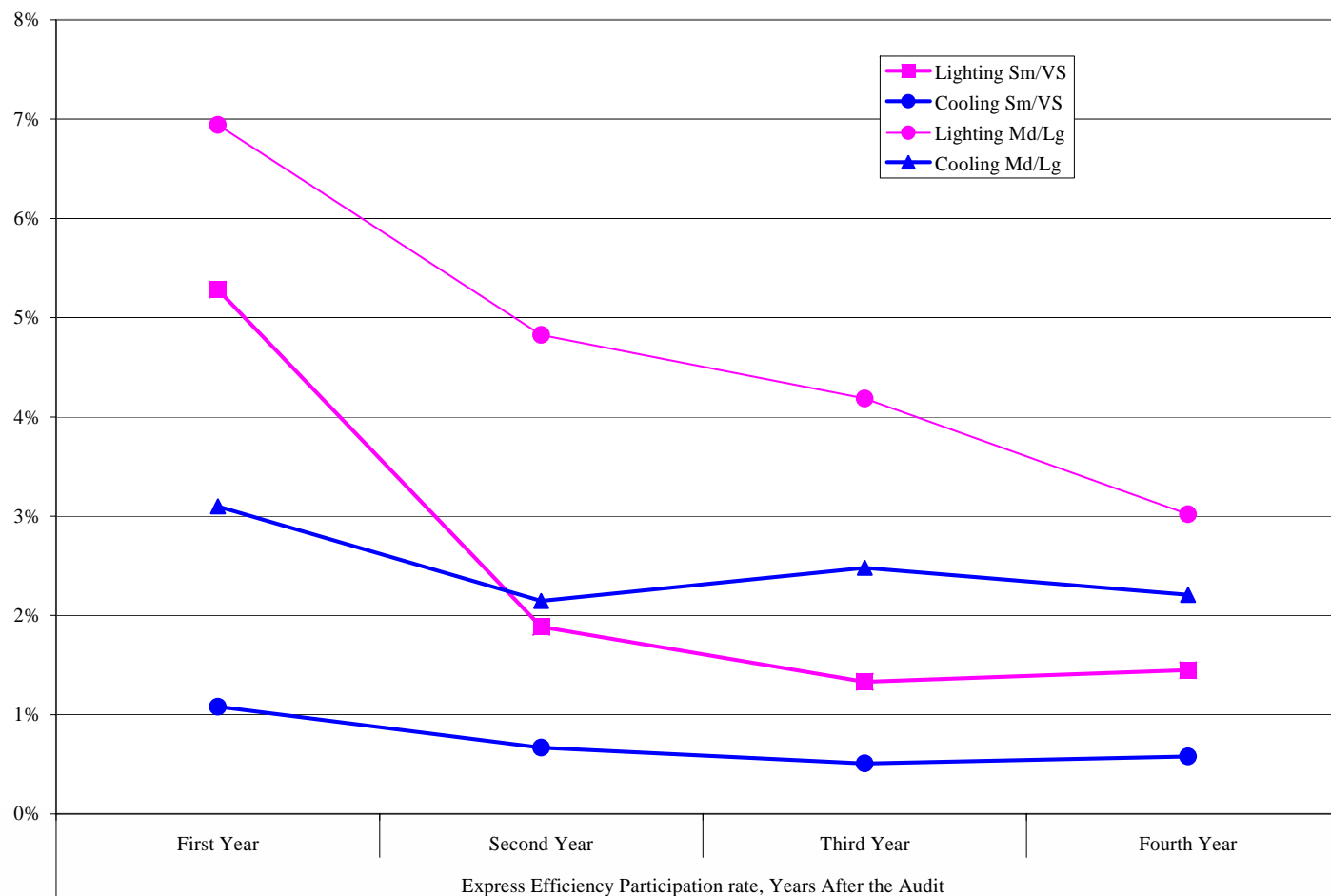
Audit Effects Over Time

- Cross-over from the Audit program to the rebate programs is highest in the first year following the Audit.
 - Small and very small customers Audit effect declines quickly
 - Medium/large customers - decline is more modest

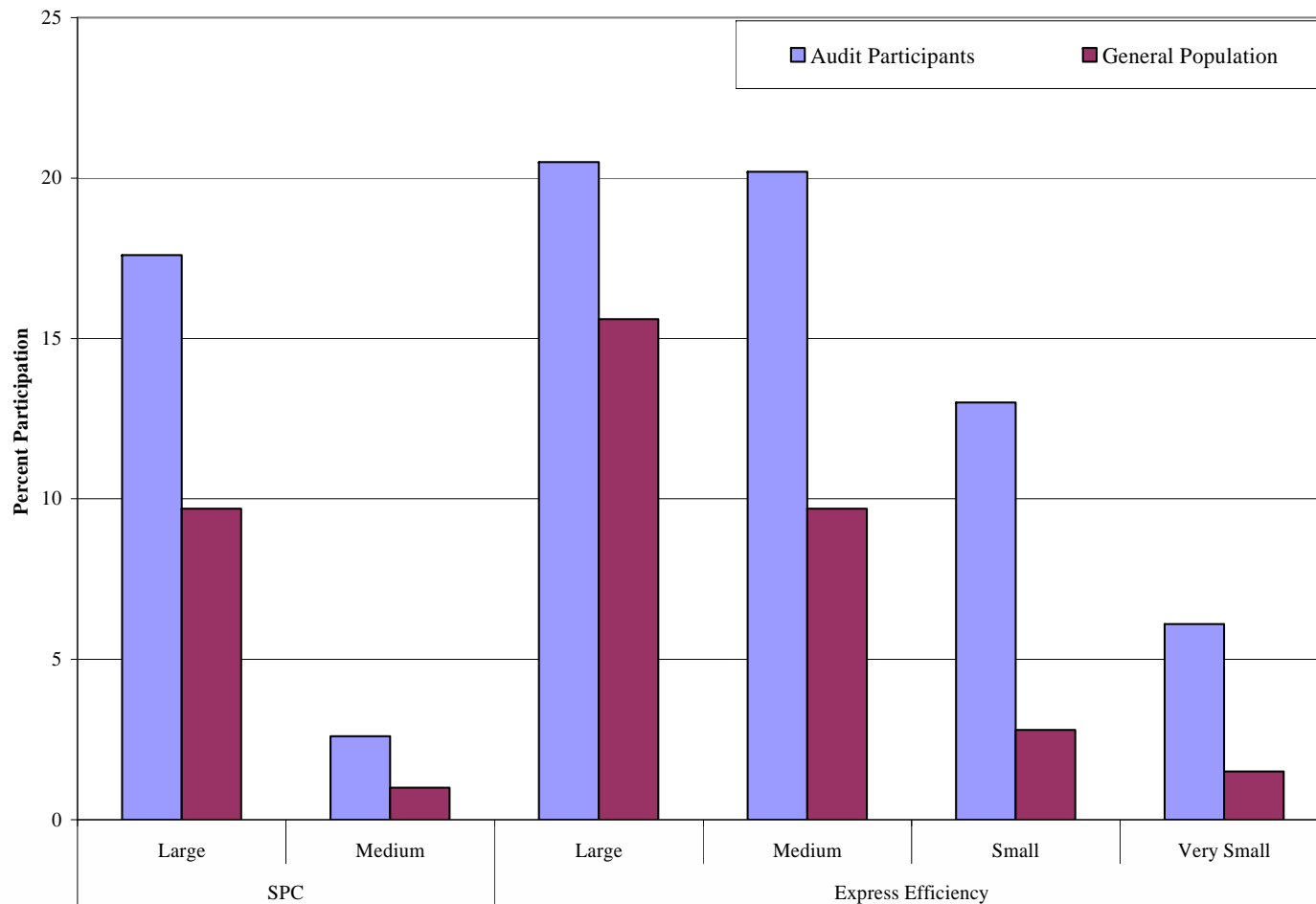
Audit Participants Going onto Rebate Programs – A Profile Over Time



Audit Participants Going onto Rebate – A Profile Over Time by End Use



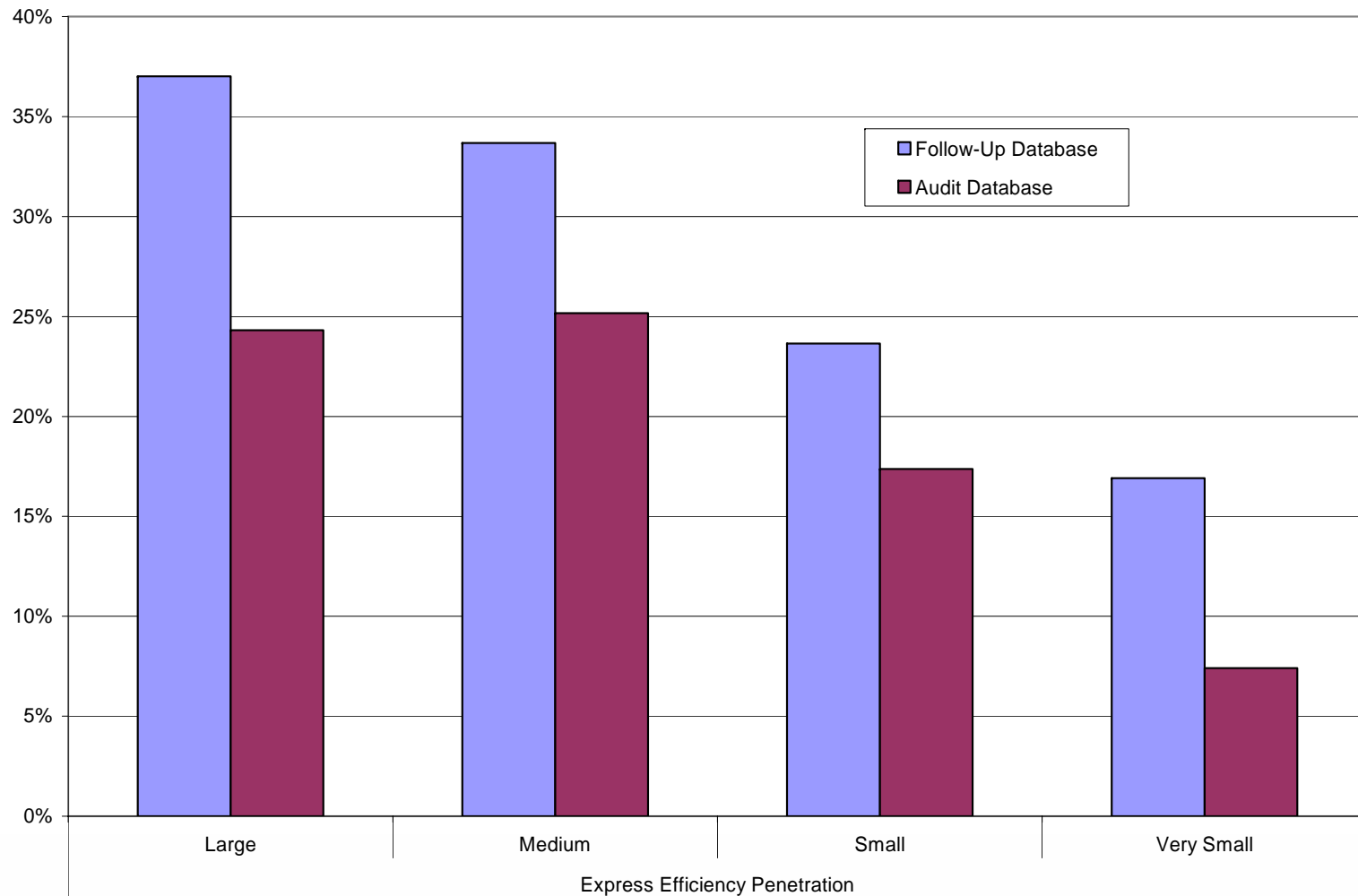
Audit Effect on Propensity to Participate in Rebate Programs



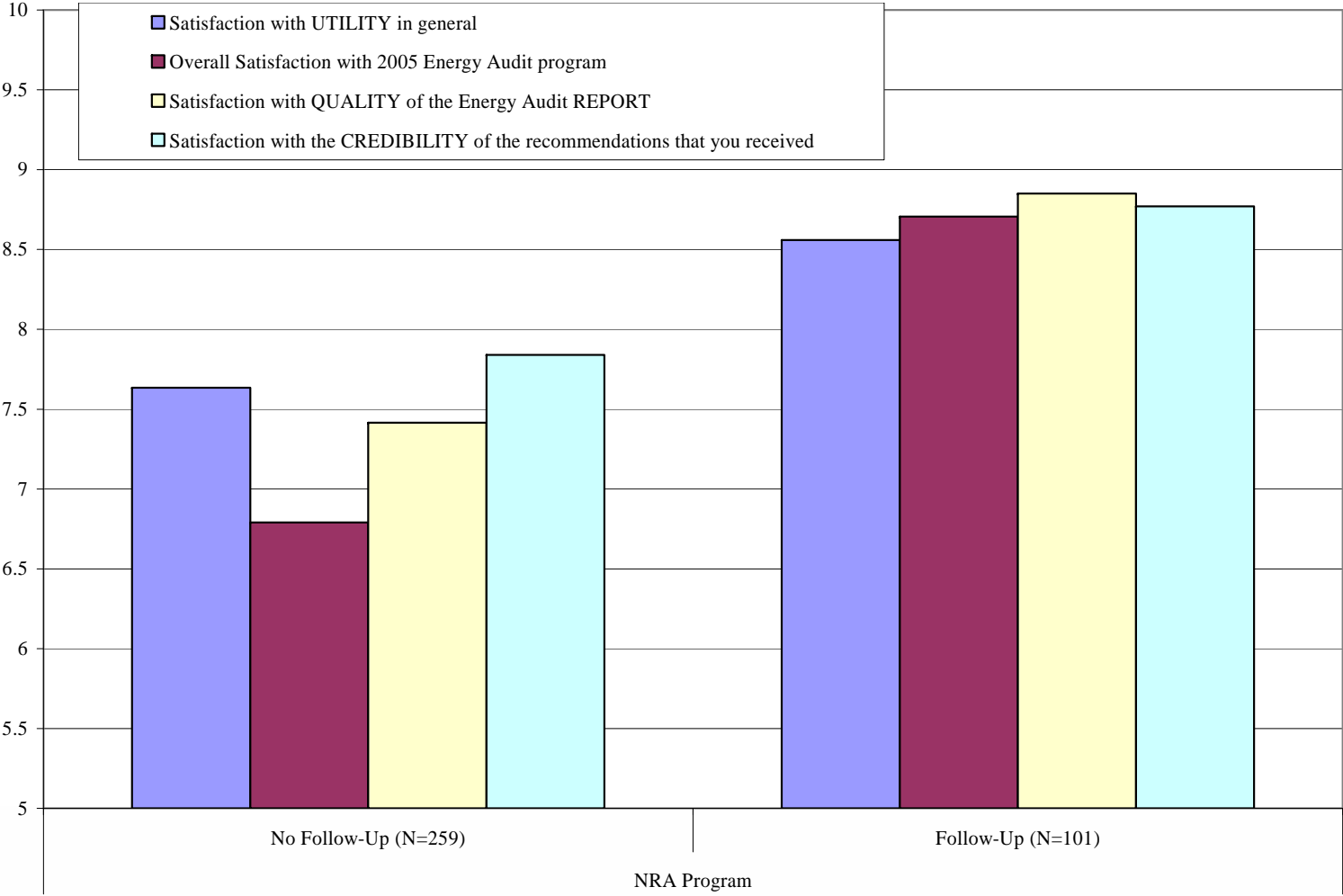
Audit Follow Up Program

- Follow-up calls asked customers about their progress towards implementing measure recommendations
- An attempt to increase the impacts of the program
- Follow up has a strong positive impact on
 - Implementing recommendations
 - Retaining Audit messages
 - Participating in Express Efficiency
 - Reporting high satisfaction with program
 - Reporting higher ranking for the credibility of recommendations

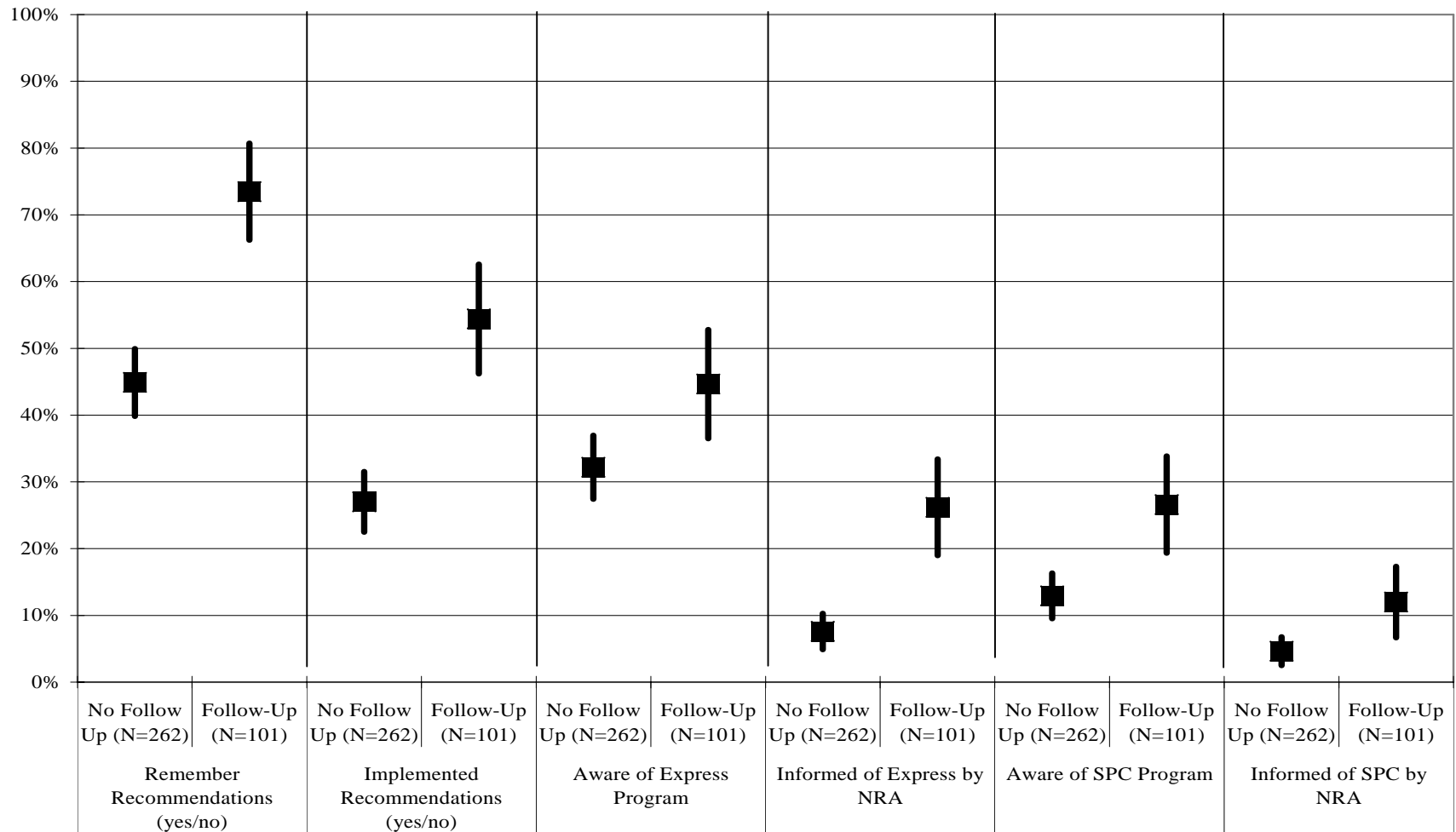
Follow Up Effect on Rebate Program Participation Rates



Follow Up Effect on Program Satisfaction

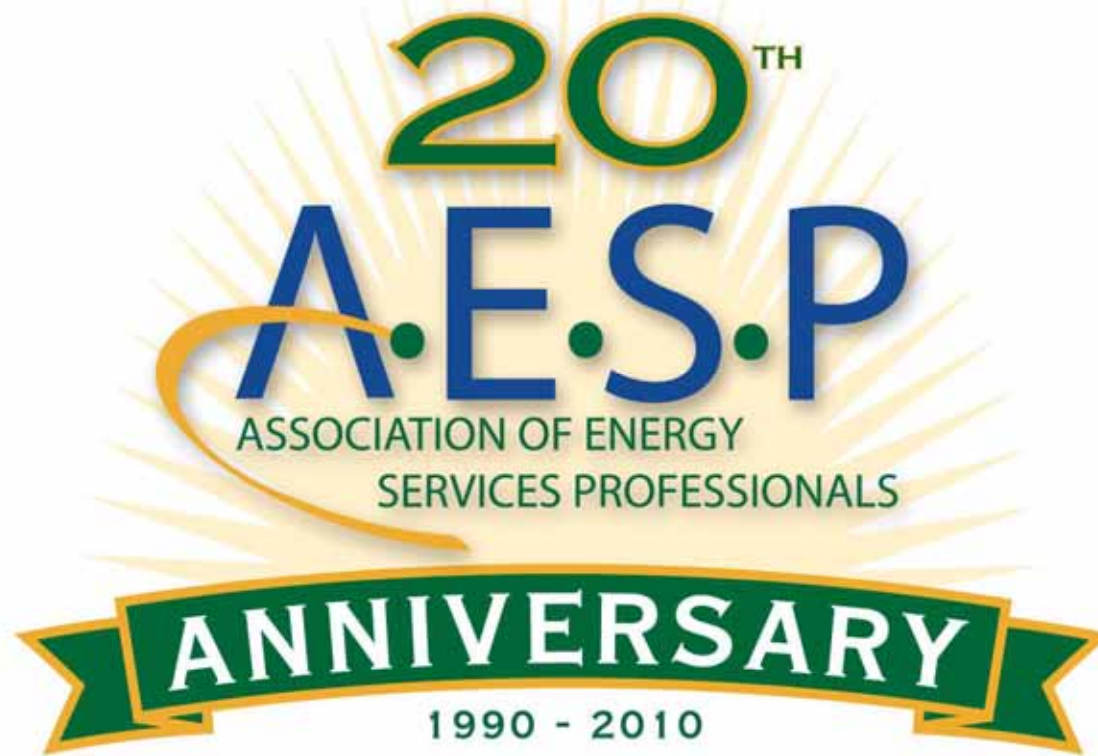


Follow-Up and Audit Messages



Conclusions

- The Audit provides considerable Net Impact that is claimed by the Rebate Programs. The Audit Program Impact includes only those adoptions made outside the rebate programs, an accounting that is not in synch with the Audit logic model
- Audit Effects are Strongest in the First Year, especially for small and very small customers and for lighting recommendations
- Follow Up Programs Are Very Effective in Enhancing the Value of the Audit Program to Participants to all Stakeholders.



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