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Multifamily Home Energy Savings Program Process and Net-to-Gross Evaluation

Program Years 2005-2006

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Executive Summary

This section summarizes the study approach and major findings. All of the findings presented in this report are based on program standards documents, program tracking data and telephone interviews conducted with 79 participating building owners and property managers.

Surveyed participants installed measures over an 18 month period ending in October of 2006. The available participant contacts for this survey were limited, and for this reason the survey sample design is a census.

1.1 Program Accomplishments

The distribution of measures, sites, and energy savings achieved by the program over the 18 month period ending in October of 2006 are shown below in Table 1-1. This table provides an illustration of typical 2005/2006 participation patterns, and reveals windows to be a key program measure.

Table 1-1: Program Accomplishments Program Years 2005 and 2006[1]

Measure	kWh Savings	Percent of Total kWh Savings	Therm Savings	Percent of Total Therm Savings
Ceiling Insulation	494,011	5%	18,450	31%
Wall Insulation	61,829	1%	2,775	5%
Floor Insulation	652,553	7%	12,401	21%
Insulated Door	60,783	1%	21	0%
Lighting	1,818,015	19%	-	-
Custom Lighting	30,929	0%	-	-
Showerhead	402,186	4%	1,358	2%
Electric Water Heater	3,643	0%	-	-
Faucet Restrictor	39,540	0%	-	-
Faucet Aerator	332,600	4%	925	2%
Windows	5,592,102	59%	22,950	38%
Gas Furnace	-	-	322	1%
Duct Sealing	-	-	961	2%
Total	9,488,191	100%	60,163	100%

1.2 Process Assessment

Customers were asked to rate their satisfaction with various program elements on a scale of 1 to 5, where 5 is extremely satisfied and 1 is extremely unsatisfied. Specifically, participant respondents were asked to rate the following elements:

- The quality and completeness of information provided by the Energy Trust about the Multifamily Home Energy Savings Program.
- The helpfulness of the Energy Trust representative.
- Ease of applying for financial incentives from the Energy Trust
- Program standards and requirements.
- Satisfaction with any issue that needed resolution.
- Overall program experience.
- Overall program energy savings.

Participant satisfaction ratings are overwhelmingly positive, as summarized in Table 1-2 below. Satisfaction ratings for Program information, the ETO representative, overall Program Experience and Energy Savings achieve a mean value of 4.5 or higher.

[1] Participation shown here reflects 18 months of program activity ending October of 2006.

Table 1-2: Satisfaction with Program Delivery, Customer Service and Energy Savings

Satisfaction Rating	Information (%)	ETO Repre-sentative (%)	Application Process (%)	Program Standards (%)	Resolution of Issues (%)	Program Experience (%)	Energy Savings (%)
5, Extremely Satisfactory	65	73	41	35	41	58	46
4	24	20	35	44	27	33	23
3	4	4	16	10	10	8	3
2	3	0	5	4	1	1	0
1, Extremely Unsatisfactory	1	0	1	1	0	0	0
Don't Know	4	3	1	5	0	0	29
No Resolution Needed	-	-	-	-	22	-	-
Mean	4.5	4.7	4.1	4.1	4.4	4.5	4.6
N	79	79	79	79	79	79	79

1.3 Net-to-Gross Findings

In general free ridership appears very low, particularly among the measures that are installed for free. A summary of final free ridership and spillover estimates are shown in Table 1-3 below. Despite virtually zero spillover, the program has very high estimated net-to-gross ratios, ranging from 81 percent for insulation to 100 percent for CFLs.

Table 1-3: Summary of Net-to-Gross Results by Program Measure

Program Measure	Free Ridership	Spillover	Final Net-to-Gross Ratio
Insulation	19%	0%	81%
Windows	15%	0%	85%
CFL	2%	2%	100%
Showerhead	4%	0%	96%
Faucet Aerator	8%	0%	92%

1.3.1 Free Ridership Analysis

This section provides an overview of each measure-specific free ridership result. More detailed methods and analysis are presented in Chapter 4.

Insulation Free Ridership Results

Insulation free ridership results are summarized in Table 1-4 below. The influence of the cash incentive on the decision to install insulation was very strong, with 69 percent of respondents reporting that the cash incentive was "very influential" in their decision to install insulation. The final estimated free ridership score for insulation is 19 percent, which is consistent with other findings presented in Chapter 4.

Table 1-4: Insulation Free Ridership Results

Would have installed insulation anyway?	Installed later?	Would have installed fewer types of insulation?	How influential was the incentive?	Frequency	Score
no	n/a	n/a	Very influential	12	0
no	n/a	n/a	Somewhat influential	2	0
yes	Don't Know	no	Very influential	2	0
yes	More than 1 year later	no	Very influential	7	0
yes	More than 1 year later	no	Somewhat influential	1	0
yes	At the same time	no	Very influential	3	0
yes	At the same time	no	Somewhat influential	3	0.5
yes	At the same time	no	Not at all influential	4	1
yes	At the same time	no	Don't Know	2	1
yes	Within 1 year	no	Very influential	3	0
Total Free Ridership Score					**19%**

Window Free Ridership Results

Table 1-5 below summarizes the windows free ridership results and shows the final estimated free ridership rate of 15 percent. Fifty-eight percent of surveyed participants report that in the absence of the program they were "somewhat" or "not at all" likely to have installed new windows at all. The influence of the cash incentive is strong among windows participants, with 61 percent of respondents reporting the cash incentive was "very influential" in their decision to install windows; eighteen percent report the cash incentive was "not at all influential".

Table 1-5: Window Free Ridership Results

What Would Have Been Purchased in the Absence of the Program?					
Likelihood of Purchasing New Windows	**When?**	**Efficiency Relative to Program Windows**	**How Influential was the Cash Incentive**	**Frequency**	**Free Ridership Score**
Not at all likely	N/A	N/A	Very influential	12	0
Not at all likely	N/A	N/A	Somewhat influential	1	0
Not at all likely	N/A	N/A	Not at all influential	1	0
Somewhat likely	At the same time	Less efficient	Very influential	2	0
Somewhat likely	At the same time	Same efficiency	Somewhat influential	1	0.25
Somewhat likely	Within a year	Less efficient	Very influential	2	0
Somewhat likely	Within a year	Less efficient	Somewhat influential	1	0.13
Somewhat likely	More than a year later	Less efficient	Very influential	10	0
Somewhat likely	More than a year later	Less efficient	Not at all influential	1	0
Somewhat likely	More than a year later	Same efficiency	Very influential	3	0
Somewhat likely	More than a year later	Same efficiency	Somewhat influential	2	0
Somewhat likely	More than a year later	Same efficiency	Not at all influential	1	0
Somewhat likely	More than a year later	Same efficiency	Don't know	1	0
Somewhat likely	More than a year later	Don't know	Somewhat influential	1	0
Somewhat likely	Don't know	Same efficiency	Very influential	1	0
Somewhat likely	Don't know	Same efficiency	Somewhat influential	1	0.25
Somewhat likely	Don't know	Same efficiency	Not at all influential	2	0.50
Very likely	At the same time	Less efficient	Very influential	2	0
Very likely	At the same time	Less efficient	Somewhat influential	1	0.25
Very likely	At the same time	Same efficiency	Very influential	2	0
Very likely	At the same time	Same efficiency	Somewhat influential	5	0.50
Very likely	At the same time	Same efficiency	Not at all influential	5	1
Very likely	At the same time	Refused	Not at all influential	1	1
Very likely	At the same time	Don't know	Very influential	1	0
Very likely	Within a year	Same efficiency	Very influential	1	0
Very likely	Within a year	Same efficiency	Somewhat influential	1	0.50
Very likely	More than a year later	Less efficient	Very influential	4	0
Very likely	More than a year later	Less efficient	Somewhat influential	1	0
Very likely	More than a year later	Same efficiency	Very influential	3	0
Very likely	More than a year later	Same efficiency	Not at all influential	2	0
Very likely	More than a year later	Don't know	Very influential	1	0
Very likely	Don't know	Don't know	Very influential	1	0
TOTAL Free Ridership Score for Windows					**15%**

CFL Free Ridership Results

Final free ridership results for CFL participants are shown in Table 1-6 below. The estimated free ridership rate is quite low, at 2 percent, mostly due to the strong influence of the offer of free installation on the decision to install.

Table 1-6: CFL Free Ridership Results

Would have installed CFLs anyway?	Installed later?	Would have installed fewer CFLs?	How influential was the incentive?	Frequency	Score
no	n/a	n/a	Don't know	1	0
no	n/a	n/a	Not at all influential	1	0
no	n/a	n/a	Very influential	31	0
yes	Within 1 year	no	Not at all influential	1	1
yes	Within 1 year	yes	Very influential	1	0
yes	More than 1 year later	no	Very influential	2	0
yes	More than 1 year later	yes	Very influential	1	0
yes	Within 1 year	no	Very influential	2	0
yes	Within 1 year	yes	Very influential	6	0
Total Free Ridership Score					**2%**

CFL Persistence

The survey results do not provide precise or robust estimates of persistence, however they do provide some useful information. The figures collected through the survey indicate that 11 percent of CFLs are failing or burning out, and that about half of these, or 6 percent, are being replaced with incandescent bulbs. CFL persistence may be a high priority for future study, perhaps involving site visits.

Showerhead Free Ridership Results

Showerhead free ridership results are summarized in Table 1-7 below. Not surprisingly, what really stands out in the results shown below is the reported influence of the offer of free showerheads. It makes sense that the offer of free showerheads is a powerful factor in customer decisions, but there are some arguably inconsistent results presented in Chapter 4 surrounding timing of awareness and previous water-saving installations. While there are no indications that showerhead free ridership is terribly significant, it could remain a research issue going forward to sort out some inconsistencies found here.

Table 1-7: Efficient Showerhead Free Ridership Results

Would have installed showerheads anyway?	Installed later?	Would have installed fewer showerheads?	How influential was the incentive?	Frequency	Score
no	n/a	n/a	Very influential	10	0
no	n/a	n/a	Somewhat influential	2	0
yes	Don't Know	no	Very influential	2	0
yes	More than 1 year later	yes	Very influential	3	0
yes	Within 1 year	no	Very influential	2	0
yes	Within 1 year	no	Not at all influential	1	1
yes	Within 1 year	yes	Very influential	3	0
Total Free Ridership Score					**4%**

Faucet Aerator Free Ridership Results

Faucet aerator free ridership results are shown in Table 1-8 below. Similar to the other free measures, the program offer of free installation was a powerful force in the decision to install. The final free ridership estimate is very low, at 8 percent.

Table 1-8: Faucet Aerator Free Ridership Results

Would have installed faucet aerators anyway?	Installed later?	Would have installed fewer faucet aerators?	How influential was the incentive?	Frequency	Score
no	n/a	n/a	Very influential	18	0
no	n/a	n/a	Very influential	1	0
yes	More than 1 year later	yes	Very influential	1	0
yes	Within 1 year	no	Very influential	1	0
yes	Within 1 year	no	Not at all influential	2	1
yes	Within 1 year	yes	Very influential	1	0
Total Free Ridership Score					**8%**

1.3.2 Spillover Results

The investigation of participant spillover yielded some notable results for CFLs, but not for other measures. Among the 40 CFL participants surveyed, 3 reported CFL adoptions that qualify as spillover under the requirements set forth in Chapter 4. These CFL spillover installations have an average size of 37 bulbs, which is 22 percent of the typical program installation size (164). Thus, CFL spillover can be estimated at 2 percent of program CFL savings.

Three additional non-CFL adoptions were reported by participants to be non-rebated and "very influenced" by their program experience. However, none of these adoptions could be confidently deemed program-qualifying and thus other program spillover is estimated to be zero percent.