

District Department of the Environment

Evaluation, Measurement, and Verification of Energy Efficiency and Renewable Energy Programs in the District of Columbia

FY13 Annual Evaluation Report Volume II—Appendices

Final—March 28, 2014





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ACRONYMS

AC	Air conditioner
Btu	British thermal unit
C&I	Commercial and institutional
CAT	Custom application tool
CATI	Computer assisted telephone interview
CBE	Certified business enterprise
CF	Coincidence factor
CEI	Comprehensive efficiency improvements
CFL	Compact fluorescent lamp
CLEER	Commercial lighting energy efficient replacement
DI	Direct install
DC SEU	District of Columbia Sustainable Energy Utility
DDOE	District Department of the Environment
DHW	Domestic hot water
EC	Energy consultant
ECM	Energy conservation measure
EFI	Energy Federation Incorporated
EFLH	Equivalent full load hours
E&B	Ebert and Baumann Consulting Engineers
EM&V	Evaluation, measurement, and verification
FAQ	Frequently asked question
FY	Fiscal year
Gpm	Gallons per minute
GWh	Gigawatt hour
HERO	Home energy reporting online
HPwES	Home Performance with ENERGY STAR®
HVAC	Heating ventilation and air conditioning
ICDI	Implementation contractor direct install
KITT	Knowledge information transfer tool
kW	Kilowatt
kWh	Kilowatt hour
LED	Light emitting diode
LI	Low-income
LIMF	Low-income multifamily
mcf	1,000 cubic feet
MF	Multifamily



MMBtu	1 million British thermal unit
M&V	Measurement and verification
N	Population
n	Sample
NREL	National Renewable Energy Laboratory
NTG	Net-to-gross
PJM	Pennsylvania New Jersey Maryland
PMDI	Property manager direct install
PV	Photovoltaic
PY	Plan year
QA/QC	Quality assurance/quality control
QS	Quick start
RFP	Request for proposal
RPM	Reliability pricing model
REIP	Renewable Energy Incentive Program
RR	Realization rate
SFQS	Single family quick start
SOME	So others might eat
SR	Standard rebates
SREC	Solar renewable energy certificate
SRI	Standard rebate initiative
TRM	Technical reference manual
Tt	Tetra Tech
VEIC	Vermont Energy Investment Corporation
VFD	Variable frequency drive



APPENDIX A: NET-TO-GROSS FULL SURVEY BATTERY AND FLOWCHARTS

This appendix summarizes the survey questions used for the full free-ridership and spillover battery to identify the primary decision maker and put the decision making in context by reviewing the project, and the questions used to estimate the extent of free-ridership and participant spillover. Particularly for the free-ridership questions, the skip patterns (which are dependent upon the response to one or more questions) are complex. To simplify discussion of the questions, we have only shown the questions and not the potential response categories or skip patterns.

A.1 SUMMARY OF THE SURVEY QUESTIONS

In order to estimate free-ridership and spillover, the participant survey instrument contains eight key sections.

- Identification of key decision maker(s)
- Initial free-ridership questions
- Consistency check questions
- Influence of past program participation
- Participant “like” spillover questions
- Participant “unlike” spillover questions.

A.2 IDENTIFICATION OF KEY DECISION MAKER(S)

Identifying and surveying the key decision maker(s) is critical for collecting accurate information on free-ridership and spillover. Therefore, the first part of the survey is devoted to identifying the appropriate decision maker within the organization by asking if participants were involved in the decision to purchase the incentivized equipment and asking about the roles of others within or outside the organization that may have been involved. If the listed contact person was not the primary decision maker, information is collected on the person within the company who was the primary decision maker and the survey is conducted with that individual.

Once the appropriate respondent was identified, they were assured their responses would be kept confidential by Tetra Tech.

The questions used to identify the key decision maker(s) are detailed below.

- X1** Are you employed by the company that received the new equipment or are you a contractor who provides design and/or installation services?
- C6A** Were you personally involved in the decision to install energy efficiency equipment through DCSEU?



- C6B** [ASK IF C6A<>1] We would like to speak with the person who was most knowledgeable about the decision to install energy efficiency equipment through DCSEU. Is there someone else we should speak with?
- C6E** Who else within your company or outside your company was involved in the decision-making process of whether or not to participate?

A.3 INITIAL FREE-RIDERSHIP QUESTIONS

The instrument then asks what influence, if any, the program had on the decision to install equipment through the program. As there are several dimensions to the decision to purchase and install new equipment¹, the battery discusses the timing of the installation and the quantity and the efficiency level of the equipment installed. These questions reference both the overall effect of the program (including staff recommendations and any technical assistance) and the specific effect of the financial incentive. The questions are listed below. Please note that these questions are measure-specific and were asked of only one measure end use.

- FR5** I'd like to go over all the assistance you received from DCSEU. According to our records:

(IF 7510BLTZ, 7110SHOT) the DCSEU covered the entire cost of the [IF FREFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FR MEASURE > project.

(IF 7510MTV, 7520CUST, 7520MARO AND E2K>10) the DCSEU financial incentive covered a portion of the cost of the [IF EFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FR MEASURE > project.

(IF 7510MTV, 7520CUST, 7520MARO AND E2K<=10) the DCSEU incentive provided technical assistance and covered a portion of the cost of the [IF EFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FR MEASURE >.

If DCSEU [if BLTZ =had not covered the entire cost] [rest=had not provided the financial incentive] would your business have implemented any type of <FR MEASURE > project at the same time?

- FR6a** Would you have implemented the <FR MEASURE> project earlier than you did, at a later date, or never?
- FR6b** How much [earlier/later] would you have implemented the <FR MEASURE> project?
- FR7a** [IF BLTZ ="Without DCSEU covering the entire cost of the project] [others="Without the financial incentive] would your business have implemented the exact same quantity of <FR MEASURE> equipment

¹ The instrument is designed to handle both rebated equipment (e.g., HVAC equipment) and rebated services (e.g. boiler tune-ups). However, as this study only addresses equipment, the survey does not include any references to rebated services.



IF FR5=1 OR FR6a=2: at that same time?

IF FR5<>1 AND (FR6A=3 or FR6A=1): within (TIMEFRAME IN FR6b)] of when you implemented it through the initiative?

FR7b Compared to the amount of <FR MEASURE> equipment that you implemented, what percentage of the project do you think your business would have purchased on its own during that time frame?

FR8² You said your business would have installed [IF FR7A=YES: all; IF FR7A= NO: (FILL WITH FR7B %); IF (FR7B=DK/RF), fill with "some"] of the equipment on its own if the [if BLTZ =DCSEU covering the entire cost of the project] [others=" financial incentive] had not been available.

Thinking about the <FR MEASURE> equipment that you would have installed on your own, what percent of this equipment would have been of the same high efficiency as was installed through the DCSEU, a lower efficiency than what was purchased but higher than standard efficiency or code, or would it have been standard efficiency or code? Allocate the percentage across the three options so they total 100%.

FR8a of the same high efficiency as was installed through the DCSEU initiative?

FR8b lower efficiency than what was purchased but higher than standard efficiency or code?

FR8c standard efficiency or code?

FR8d [IF FRQTY = 1] Thinking about the <FR MEASURE> project you would have implemented on your own if the DCSEU [if BLTZ = covering the entire cost of the project] [others=financial incentive] had not been available, would it have been of the same high efficiency as what was installed through the initiative, lower efficiency than what was purchased but higher than standard efficiency, or standard efficiency or code?

A.4 CONSISTENCY CHECK QUESTIONS

The instrument also included questions that would identify and correct inconsistent responses. For example, if participants reported that they were likely to install the equipment without the program but also reported that they would not have installed the energy efficient equipment within four years, the interviewer asked them to confirm which statement was more accurate. These questions are listed below.

FR1 On a scale of 0 to 10, with 0 being not at all likely and 10 being very likely, how likely is it that your business would have implemented the same [IF FRQTY > 1: quantity] [IF FREFF=1: and efficiency of] [IF FRQTY>1 & FREFF=1: quantity and efficiency of] <FR MEASURE> at that same time if DCSEU had not provided the "[7510BLTZ/7610BLTZ=equipment you received] or [rest=financial incentive you received]?"

² For measures where quantity is not applicable but efficiency levels do vary, this question is combined into one item: FR8D.

C3 On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the [if BLTZ =DCSEU covering the entire cost of the project] [others=financial incentive] have on your decision to implement the high efficiency <FR MEASURE> project?

C4a Now I want to focus on what it would have cost your business to install this equipment on its own. On a scale of 0 to 10, with 0 being not at all likely and 10 being very likely, how likely is it that your business would have paid

(IF 7510BLTZT) the entire cost of the project

(IF 7510MTV, 7520CUST, 7520MARO) the DCSEU contribution on top of the amount you already paid

to implement the same quantity and efficiency of <FR MEASURE> at that same time?

C8B (IF AT LEAST SOMEWHAT LIKELY TO HAVE INSTALLED THE MEASURE WITHOUT THE INITIATIVE BUT LATER STATES WOULD HAVE WAITED AT LEAST FOUR YEARS (FR1 > 3 AND FR6b > 48 MONTHS OR FR6a=4) and FR5<>1)

Earlier in the interview, you said there was a (FR1 SCORE) in 10 likelihood that you would have implemented the same quantity and efficiency of <FR MEASURE> equipment at that same time in the absence of [if BLTZ = the DCSEU covering the entire cost of the project] [others= the financial incentive]. But you also said you would [IF FR6a=4: “never have implemented the <FR MEASURE> project.”] [IF FR6bY>=4: “not have implemented the <FR MEASURE> project within 4 years of when you did.”]. Which of these is more accurate?

C9C [ASK OF ALL] I'd like to better understand your purchase decision. In your own words, please describe what impact, if any, did the equipment, financial incentive, or technical assistance you received have on your decision to install the amount of energy efficient <FR MEASURE> equipment at the time you did?

As inputs into the algorithm, Tetra Tech used a scoring system based on the influence and consistency check questions above. The scoring calculates two scores: a quantity score and an efficiency score. The quantity score represents the percentage of the incentivized equipment that would have been installed in absence of the program. The efficiency score is the percentage of savings *per unit installed* that would have occurred without the program. For equipment that is reported to be more efficient than standard but less efficient than what was installed through the program, we assume 50 percent of the savings for those measures. Multiplying these two scores together gives the percent of the incentivized savings that would have occurred without the program. This percentage is the raw free-ridership estimate. Table A-1 details these calculations.

Table A-1. Quantity and Efficiency Scores

Score	Responses	Result
Quantity Score (FR_QTY)	If would have installed same quantity without program (FR7A = YES)	FR_QTY = 1

Score	Responses	Result
	If would have installed fewer quantity without program (FR7A = NO)	FR_QTY = FR7B
	If never would have installed (FR6A = never)	FR_QTY = 0
Efficiency Score (FR_EFF)	If would have installed at least some equipment on their own	FR_EFF = FR8A + (FR8B*.50)
	If never would have installed (FR6A = never)	FR_EFF = 0
Initial Free-ridership Score	<i>The percent of the rebated savings that would have occurred without the program.</i>	$FR_EFF * FR_QTY$

The product of these two scores is then adjusted by a timing factor. The timing factor adjusts the raw free-ridership estimate downward for all or part of the savings that would have occurred without the program, but not until much later. By doing so, the program is given credit for accelerating the installation of energy efficient equipment. For example, if the participant states that he or she would have installed equipment at the same time regardless of the program, the quantity-efficiency factor is not adjusted. However, if the participant states that, without the program, they would have completed the project more than six months later than they actually did, any free-ridership identified in the quantity-efficiency factor is adjusted downward³. This adjustment is detailed in Table A-2.

Table A-2. Timing Factor Adjustment

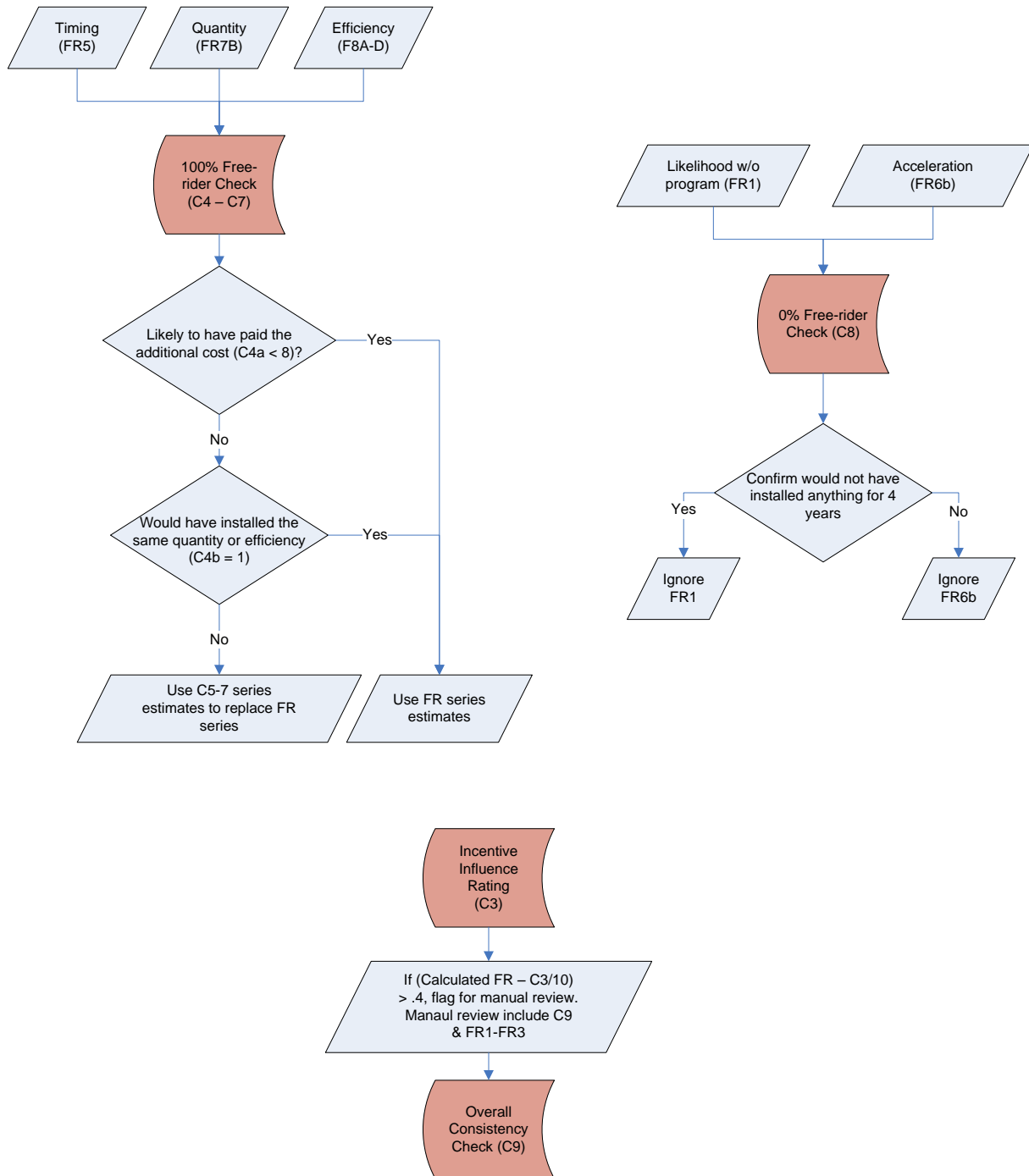
Score	Responses	Result
Timing Factor—Large Business Programs (FR_TIMING)	Would have installed at the same time without the program (FR5 = Yes)	FR_TIMING = 1
	Would have installed within six months of when participant actually did without the program (FR6b ≤ 6 months)	FR_TIMING = 1
	Would have installed sometime between 7 and 48 months of when participant actually did without the program (FR6b > 6 months & < 48 months)	$FR_TIMING = 1 - ((FR6B - 6 * .024)$
	Would have installed sometime after 48 months of when participant actually did without the program (FR6b > 48 months)	FR_TIMING = 0
	Would have never installed without the program (FR6A = Never)	FR_TIMING = 0
Adjusted Free-ridership Score	<i>The raw free-ridership estimate adjusted for all or part of the savings that would have occurred without the program, but not until much later</i>	$FR_TIMING * Initial\ Free-ridership\ Score$

This adjusted score is reviewed for consistency.

³ Projects that were accelerated by fewer than 6 months are not adjusted. As installation timelines are subject to shifting, we assume these projects are just as likely to have been installed at the same time.

Figure A-1. Consistency Check Flowchart

Consistency Checks



A.5 INFLUENCE OF PAST PROGRAM PARTICIPATION

If a participant has previously participated in the program, they are asked about the influence of that past participation on their perceptions and behaviors. Participants are asked to state whether they agree or disagree with four statements about the effect past participation has had on their decision-making. Based on the number of statements with which they agree, their free-ridership is reduced by 75 percent, 37.5 percent, or not reduced at all. This reduction is done to account for the influence positive program experiences have had on participants' purchasing decision – with the program administrators, implementers, or the equipment incented.

PP3 I'm going to read you several statements. For each statement, please tell me whether you agree or disagree that this statement applies to your business. There are no right or wrong answers; we just want your honest opinion.

Our previous experience implementing energy efficient projects through the DCSEU . .

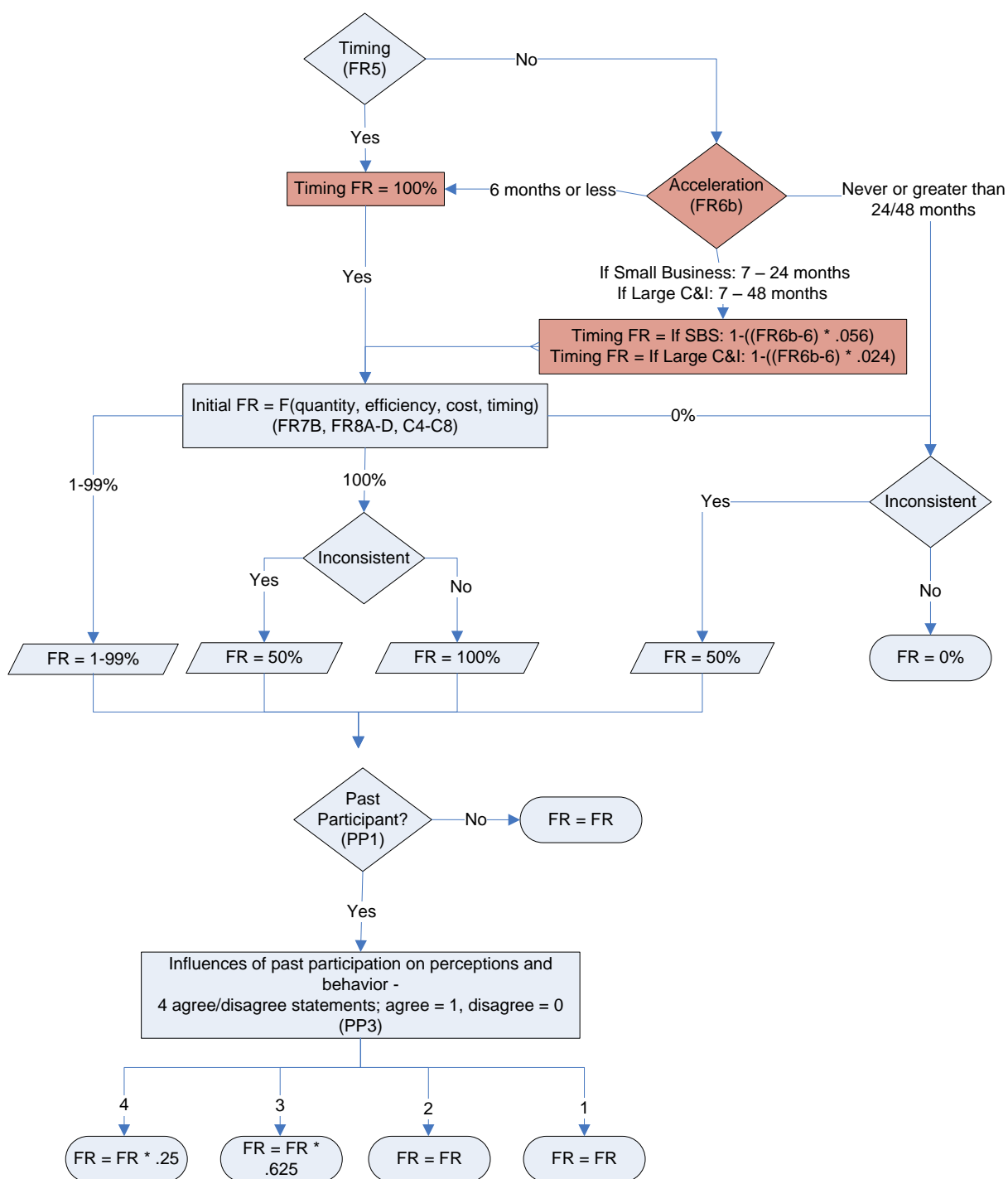
- a. Has made our firm more likely to consider energy efficient equipment
- b. Has made our firm more likely to install energy efficient equipment
- c. Has given us more confidence in the financial benefits of energy efficient equipment
- d. Has given us more confidence in the nonfinancial benefits of energy efficient equipment

The previous program participation adjustment is made to account for the market effects associated with implementing energy efficiency programs over time. These market effects will result in net savings estimates that do not capture the full cumulative effect of the program. This methodology attempted to capture some of these market effects by making this adjustment for previous program participation. While it could be argued that the influence of previous participation should count as spillover rather than reduced free-ridership, the traditional definition of spillover does not count measures installed through a program as spillover. Table A-3 details this adjustment.

Table A-3. Adjustment for Previous Participation

Adjustment	Responses	Result
Previous Participation Adjustment	No previous participation in program	No adjustment
	Agrees with four statements regarding the positive influence of past participation (PP3)	Adjusted Free-ridership Score * .25
	Agrees with three statements regarding the positive influence of past participation (PP3)	Adjusted Free-ridership Score * .625
	Agrees with two or fewer statements regarding the positive influence of past participation (PP3)	No adjustment

Figure A-2. Free-ridership Flowchart for Full NTG Battery





A.6 PARTICIPANT “LIKE” SPILLOVER

The “like” spillover estimates are computed based on how much more of the same energy efficient equipment the participant installed outside the program that were, in fact, influenced by the program. This is a conservative approach because it assumes the exact same equipment, including efficiency level and size. The following questions, in conjunction with the savings assigned to that same equipment by the program, are used to estimate possible spillover savings:

- S1a** Now I'd like you to think of the time since you implemented the DCSEU project. Has your company implemented any <FR MEASURE> projects for this or other facilities in DC **on your own**, that is, without assistance from DCSEU?
- S1b** Was this equipment of the same or higher level of efficiency as the equipment you installed?
- S1c** Was this equipment more energy efficient than standard efficiency or code?
- S2a** Thinking of the equipment that you installed on your own, was this more, less or the same amount of <FR MEASURE> that you installed through the DCSEU?

For respondents that answer “Yes” to S1A and S1B, spillover savings are calculated as the measure-specific savings identified by the program multiplied by the quantity identified in S2A. For respondents that answer “Yes” to S1A and S1C, spillover savings are calculated as 50 percent the measure-specific savings identified by the program multiplied by the quantity identified in S2A. If the respondent answers “No” to S1A or S1C, there are no identifiable “like” spillover savings.

For those end uses, a program-attributable spillover rate is then calculated based on the following questions:

- S3a** Did a recommendation by the contractor, engineer, or designer who you worked with under the DCSEU project influence your decision to implement some or all of this [IF FREFF=1: efficient] <FR MEASURE> equipment on your own?
- S3b** Did your experience with the energy efficient projects implemented under the DCSEU project influence your decision to implement some or all of this [IF FREFF=1: efficient] <FR MEASURE> equipment on your own?
- S3c** Did your participation in any past project with DCSEU influence your decision to implement some or all of this [IF FREFF=1: efficient] <FR MEASURE> equipment on your own?
- S3d** On a scale of 0 to 10, where 0 is “no influence at all” and 10 is “a great deal of influence”, how much influence did your participation in the DCSEU project have on your decision to install this equipment without DCSEU assistance?
Again, this is on a scale of 0 to 10.



S4a Why didn't you implement the <FR MEASURE> project with DCSEU assistance?

S4b [IF THE EQUIPMENT WOULD NOT QUALIFY] Why wouldn't the equipment qualify?

If the respondent reports that the contractor influenced their decision to install the like equipment on their own, we attribute the program with 50 percent of those savings based on the influence the program has on the trade allies. If the respondent reports that either their experience with the program-sponsored project or past programs influenced their decision to implement the like equipment, we attribute the program with 100 percent of the spillover savings.

To summarize:

If (S3A=yes AND (S3B = no AND S3C = no)), spillover rate = 50%.

If (S3B=yes OR S3C = yes), spillover rate = 100%.

That rate, applied to the estimated spillover savings, results in the program-attributable spillover savings for that participants.

A.7 PARTICIPANT “UNLIKE” SPILLOVER

In addition to “like” spillover, the study also measured “unlike” spillover (i.e., measures outside of those installed through the program). To establish spillover savings, program eligibility was used as a proxy for energy efficiency. The following questions were used to identify “unlike” spillover.

S5 Since you implemented the DCSEU project, has your company purchased, installed, or implemented any other type of energy efficiency equipment **on your own**, that is without DCSEU assistance?

S6a What equipment did you install?

S6b What amount or quantity did you install?

S6c What was the size or capacity of the equipment you installed?

S7a Would this project have qualified for DCSEU assistance?

Once identified, program influence needs to be established. Using the same methodology as with “like” spillover, we ask a series of questions to determine if the spillover is program-attributable spillover:

S7b Did a recommendation by the contractor, engineer, or designer who you worked with under the DCSEU project influence your decision to implement some of this equipment on your own?

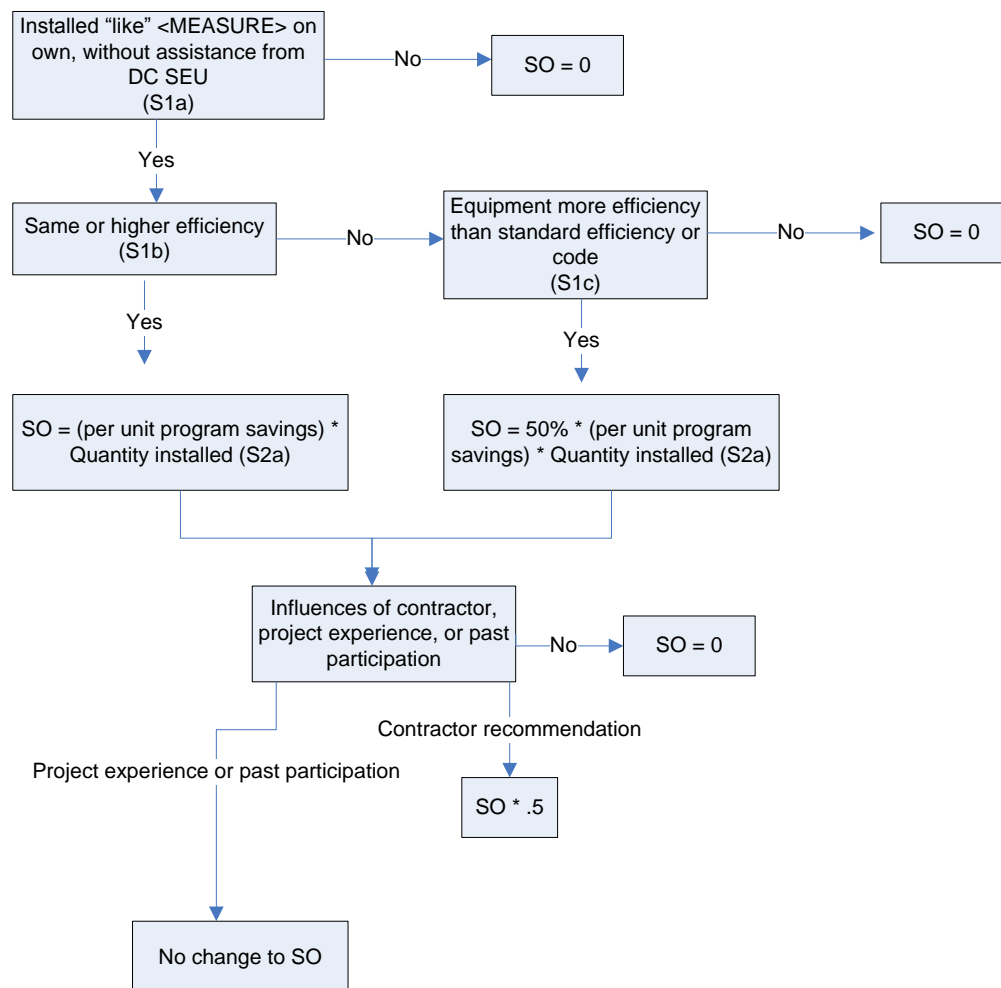
S7c Did your experience with the energy efficient projects implemented through the DCSEU influence your decision to implement some of this equipment on your own?

S7d Did your participation in any past initiative offered by DCSEU influence your decision to implement some or all of this equipment on your own?

As with “like” spillover, if the respondent reports that the contractor influenced their decision to install the like equipment on their own, we attribute the program with 50 percent of those savings based on the influence the program has on the trade allies. If the respondent reports that either their experience with the program-sponsored project or past programs influenced their decision to implement the “unlike” equipment, we attribute the program with 100 percent of the spillover savings.

However, given the difficulties in estimating savings for these installations using regular telephone interviewers, we present only indicators of “unlike” spillover and not savings estimates.

Figure A-3. Flowchart for Spillover Battery



APPENDIX B: NET-TO-GROSS LIMITED SURVEY BATTERY AND FLOWCHARTS

This appendix summarizes the survey questions used for the limited free-ridership and spillover used to estimate the extent of free-ridership and participant spillover. Particularly for the free-ridership questions, the skip patterns (which are dependent upon the response to one or more questions) are complex. To simplify discussion of the questions, we have only shown the questions and not the potential response categories or skip patterns.

B.1 SUMMARY OF THE SURVEY QUESTIONS

In order to estimate free-ridership and spillover, the participant survey battery contains three key sections.

- Intention questions
- Influence questions
- Participant spillover questions.

B.2 INTENTION QUESTIONS

The limited free-ridership battery begins the intention questions or asking the respondent who the project would have differed if the respondent had not received program assistance. There are several dimensions used to rate the intention to install new equipment, how the size of the project would change and if the business would have paid the additional funds. The intention questions are listed below.

LFR1 Which of the following most likely would have happened if [if LI BLTZ/SHOT=DCSEU did NOT cover the entire cost of the project] [others=you had NOT received the financial incentive from DCSEU]?

LFR2 [ASK IF LFR1 = 2] Would you have reduced the size, scope or efficiency of the project a small amount, a moderate amount, or a large amount?

LFR3 [ASK IF LFR1 = 3]

[IF DIRINST <> 1] Would you have paid the entire cost of the project in the absence of the financial incentive you received from DCSEU?

[IF DIRINST = 1] Would you have paid to implement the same project even if you had to pay the full cost of the equipment, without **any** financial incentive?

B.3 INFLUENCE QUESTIONS

The instrument also included questions that assess how much influence the program had on the decision to do the project. Respondents are asked to rate different program aspects on a scale of 1 to 5 with 1 being not at all influential and 5 being extremely influential. The influence score is equal to the maximum influence rating for any program aspect. These questions are listed below.

LFR4 On a scale of 1-5, where 1 is 'not at all influential' and 5 is 'extremely influential,' please tell me how influential each of the following aspects were in your decision to implement the [FR MEASURE] project. How influential was...

[NOTE: Include "Not applicable" option]

- A [IF DIFLAG<>1] The incentive or rebate offered by DCSEU. [IF DIFLAG=1] The equipment received through the DCSEU.
- C [IF E2K>10, SKIP] The technical assistance received from DCSEU staff.
- E The recommendation from the installation contractor you worked with
- G Previous experience implementing projects through DCSEU

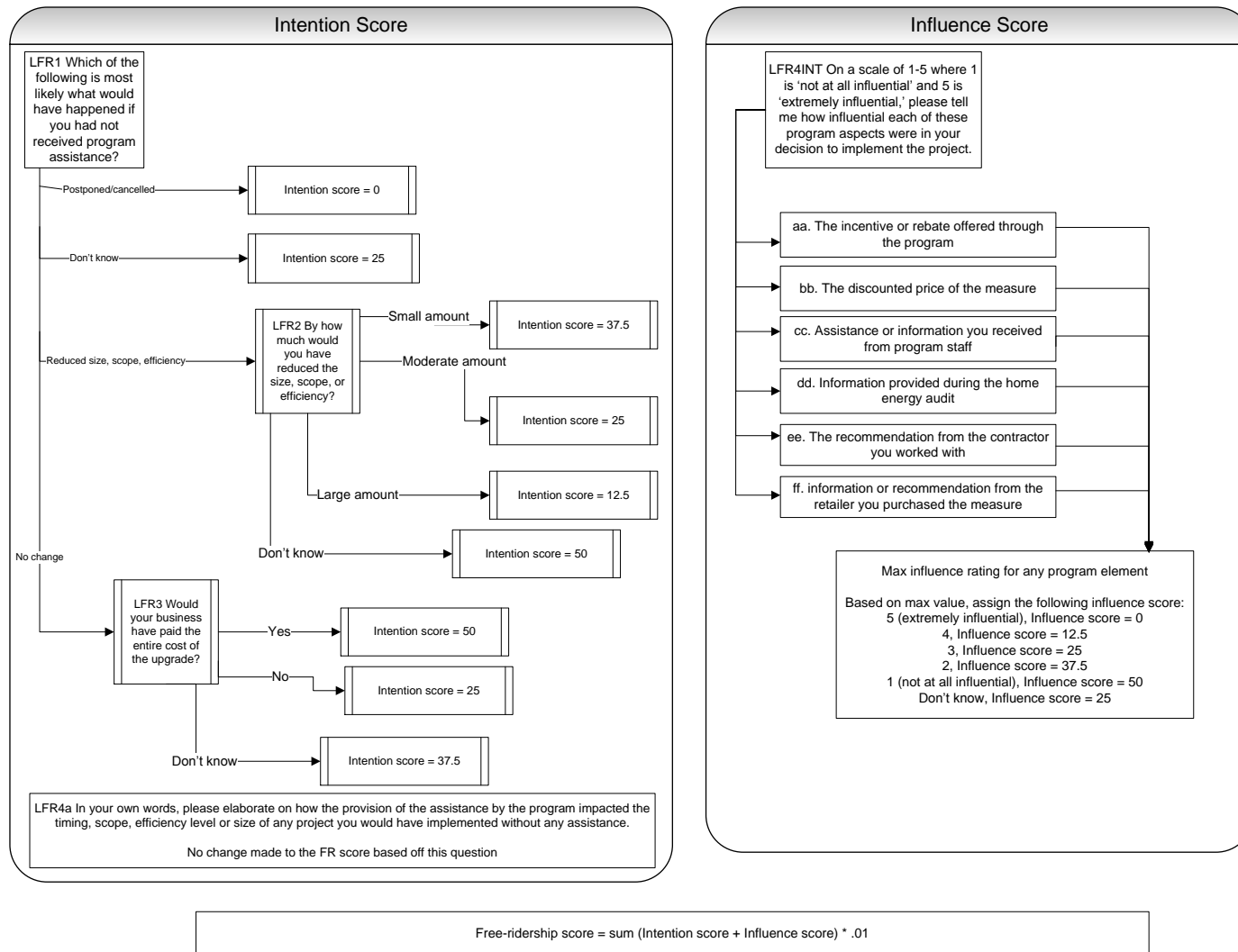
The scoring calculates two scores: an intention score and an influence score. The intention score represents how much the project would have changed in absence of the program. The influence score is the percentage of influence the program had on the customer's project. These scores are then summed and multiplied by .01 to get the raw free-ridership score. Table B-1 details these calculations.

Table B-1. Intention and Influence Scores

Score	Responses	Result
Intention Score (FR_int)	If project would have been cancelled (LFR1 = postponed/cancelled)	FR_int = 0
	If project would have been reduced in size, scope or efficiency (LFR1 = reduced size, scope or efficiency)	Large amount: FR_int = 12.5 Moderate amount: FR_int = 25 Small amount: FR_int = 37.5
	If project would not have changed (LFR1 = no change)	Would have paid entire cost: FR_int = 50 Would not have paid entire cost: FR_int = 25
Influence Score (FR_infl)	Rating of program aspect on scale from 1 (not at all influential) to 5 (extremely influential)	FR_infl = highest rated aspect 1 (not at all influential), FR_infl = 50 2, FR_infl = 37.5 3, FR_infl = 25 4, FR_infl = 12.5 5 (extremely influential), FR_infl = 0
Initial Free-ridership Score	The percent of the rebated savings that would have occurred without the program.	$(FR_int + FR_infl) * .01$



Figure B-1. Free-ridership Flowchart for Limited NTG Battery



B.4 PARTICIPANT SPILLOVER

The spillover estimates are computed based on how additional energy efficient equipment the participant installed outside the program that were, in fact, influenced by the program. This spillover includes both “like” spillover, where the exact same equipment was installed and “unlike” or equipment different from what was installed through the program was purchased. The following questions, in conjunction with the measure specific savings values, are used to estimate possible spillover savings:

SP1 Since participating in the *[PROGRAM]*, have you purchased any other type of energy efficient or ENERGY STAR rated equipment for use within the District of Columbia?

SP2 What energy efficient equipment have you purchased?

For any equipment identified in SP2, the respondent is asked if they received a rebate from DC SEU for the equipment. Spillover savings are calculated as the measure-specific savings identified by the TRM⁴ multiplied by the quantity identified in SP3 and SP5 or the influence the program had on the purchase. For respondents that answer that they received a rebate from DC SEU and a rebate is offered for the equipment, no spillover is attributable to the program. The following questions were used for these calculations.

⁴ Some types of equipment reported by respondents are not included in the DC SEU TRM. Savings estimates for these equipment were taken from the Mid-Atlantic, Pennsylvania, and Michigan TRMs, adjusting for weather where appropriate.

- SP3** [IF SP2_17=1 OR SP2_1=1 OR SP2_2=1, SKIP] How many/much [SP2 Equipment] did you purchase?
- SP4** [IF SP2_1=1 OR SP2_2=1, SKIP] Did you receive a rebate for the [SP2 Equipment] from DC SEU?
- SP5** On a scale of 0 to 10, with 0 being no influence and 10 being total influence, how much influence did your participation in the [PROGRAM] have on your decision to purchase the energy efficient [SP2 Equipment]?

Figure B-2. Spillover Flowchart for Limited NTG Battery

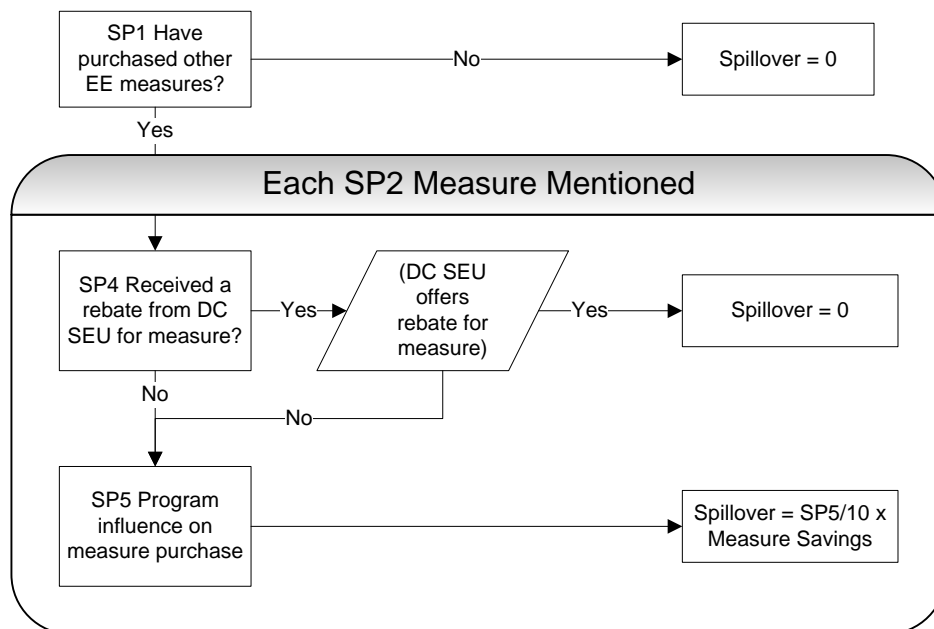
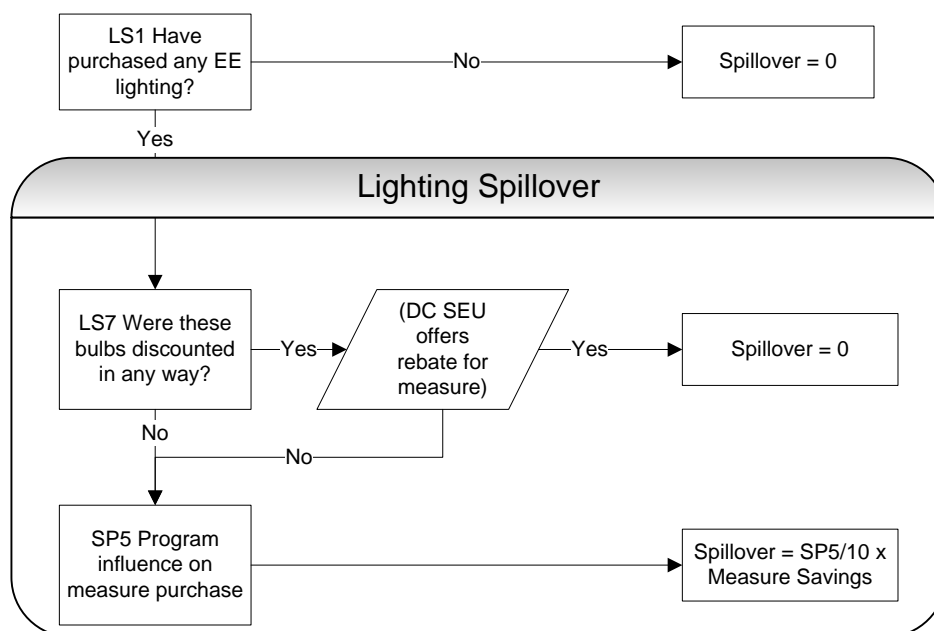


Figure B-3. Spillover Flowchart for Lighting Spillover Battery





APPENDIX C: EVALUATION PROGRAM STAFF INTERVIEW GUIDE



DCSEU STAFF INTERVIEW GUIDE AND TEMPLATE

Interviewee(s) -

Phone –

Email –

Interviewer(s) –

Areas of Responsibility -

Date(s):

Note – not all questions are applicable to all tracks. The interview will be adjusted as pertinent for each initiative.

A. Interview Objectives

- Document current program staff roles and responsibilities.
- Confirm understanding of how program (or initiative) is designed to operate, including changes made during FY13 or for FY14.
- Document key performance indicators.
- Identify program staff key researchable issues.

B. Summary of Findings

Interviewer to document within this section:

- Overview of role and program
- Key issues identified through the interview(s), examples below:
 - Process-related program issues
 - Impact-related program issues
 - Program progress issues
 - Marketing issues
 - Organizational issues
 - IT issues
 - Implementation contractor / program staff issues
- Researchable questions that were identified
- Preliminary thoughts on activities to address issues

C. Confirm Role within DCSEU and/or the Program(s)

- 1) Responsibilities or role regarding the program

Tetra Tech



- when became involved (if new to position since last interviewed)
- how have responsibilities/role changed over time
- on average, what percent of your workload is spent on the program/initiative monthly?

Notes:

- 2) Who do you interact with (others) regarding the program?
 - Other DCSEU staff, trade allies, customers
 - Roles and responsibilities of these other persons
 - Success of interactions; suggestions for improvements

Notes:

D. Program/Track FY13 Budget, Targets, Key Performance Indicators

- 1) How did the initiative's budget change through FY13?
- 2) How did the initiative's savings and participation change through FY13?
- 3) What other KPIs do you track and/or report?
- 4) Are you fully staffed to effectively deliver your initiative's targets and KPIs? Are there sufficient program resources to meet the programs goals? (Probe: admin support, such as incentives, program partners support (co-op ads, spiffs), and marketing materials.)

Notes:

E. Program Design, Marketing, and Operations

- 1) Review Logic Model (separate attachment).

Notes:

- 2) Is there an SOP document or process flow available?

Notes:

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DCSEU Program Staff
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- 3) How has the program evolved over this cycle period? Were any of the FY12 evaluation recommendations integrated and if yes, in what way? If no, why not? (Review Recommendation Action Plan tracking file)
- (if changes made) Has it been an improvement?
 - (if changes made) What challenges have you faced in the transition?

Notes:

- 4) How does the new Marketing and Outreach Plan impact marketing efforts for your initiative? What marketing activities are being used to reach the different target markets? How effective have each of these methods been in identifying and enrolling potential participants? Why?

Notes:

- 5) What are major barriers to participation?
- why do you think customers choose to participate or not participate?
 - what are the comparative strengths of these reasons?
 - are the marketing efforts designed to build on customers' reasons for participation and minimize reasons for nonparticipation?

Notes:

- 6) How does this program coordinate with other efficiency programs offered by DCSEU or other organizations?

Notes:

- 7) Describe your communications and working relationship with trade allies. What support is provided through the program to trade allies? In what areas could this be improved?

Notes:

- 8) How do you identify prospective customers for the program? Is program tracking data mined to ID customers who have participated in other programs as potential targets?

Notes:

- 9) How are leads and follow-up tracked? How are non-participants tracked?

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DCSEU Program Staff
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Notes:

- 10) What are the participation steps from the customer's perspective? Have these changed over time? About how much time is spent obtaining program participants through direct customer interaction?

Notes:

- 11) What value do these interactions provide to potential program recruits?

Notes:

- 12) What support services are available to participants after participation in the initiative? How do they follow-up with the program when they have questions or issues?

Notes:

- 13) How are post-program participation customer initiated contacts tracked? How is this data used?

Notes:

- 14) Are you performing customer satisfaction surveys? If yes...How is this data being used? What is the level of customer satisfaction with the various aspects of the program (participation process, program application, measure performance, rebate processing, etc.)? How can satisfaction be improved?

Notes:

- 15) Do the incentive levels seem appropriate? If not, why not? What, if any, changes in the incentive levels do you think may be needed?

Notes:

- 16) What aspects of the program implementation are working well? Which are not working well? What do you see as future challenges for the program?

Notes:

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- 17) Is the system used for tracking and reporting useful for your day-to-day program management and KPI monitoring? What would be helpful to track that is not currently available? How easy is it to use the tracking system (get standard or custom reports, data downloads for analysis, etc.)?

Notes:

- 18) Any program specific issues to address such over –oversubscription processes, etc.?

Notes:

E. Program Impacts for non-TRM Measures (To inform cost-effectiveness tests and engineering review)

- 1) Please briefly summarize your approach for these inputs and any concerns/issues you may have with the input. Capture across the specific pieces of program equipment or service.

SUMMARIZE THE INPUTS, SUMMARY OF APPROACH, AND ANY CONCERNS MENTIONED)

- Baseline equipment
- Replacement equipment specifications (e.g., capacity, nominal rating of equipment capacity, energy efficiency ratio)
- Operating hours
- System coincidence factors
- Load factors
- O&M savings and/or costs
- Equipment/measure life
- Persistence, snapback, and degradation
- Incremental costs

Notes:

- 2) Have these inputs changed over the course of the program? If so, how?

Notes:

- 3) Are there any plans to make changes to these inputs moving forward? If so, how?

Notes:

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- 4) How are the inputs for each technology or project determined for baseline, cost, or savings factors? Who makes this determination?

Notes:

- 5) The evaluation will need to collect this data for projects that are included in the sample. What is the best way to get this data in an electronic form? How is it currently stored?

Notes:

F. Evaluation

- 1) What are your needs, or key researchable issues, from this evaluation?

Notes:

- 2) Do you have any specific questions that you want to make sure are included in primary data collection activities with market actors. Probe about trade ally interviews, participant and non-participant surveys, the benchmarking study and the engineering review.

Notes:

- 3) The evaluation results will be used in part to inform future program design and filings. Anything additional you would like evaluation to focus on with this objective in mind?

Notes:

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Interview Guide, Page 6

APPENDIX D: MARKET ACTOR INTERVIEW GUIDE

D.1 DCSEU COMMERCIAL AND INSTITUTIONAL MARKET ACTOR INTERVIEW PROTOCOL

D.1.1 Interview guide format

This interview guide is for market actors including general contractors and suppliers who are working with the DCSEU Commercial and Institutional initiatives in DC.

Because senior staff will be conducting interviews, these interviews will be semi-structured. Therefore the following interview protocol is only a guide to ensure certain topics are covered, but evaluators will follow the flow of the interview and modify questions as needed to fit the interviewee's circumstance.

D.1.2 Overarching key researchable issues

- What are the characteristics of the small-to-medium market, and what is market saturation?
- Who is the program reaching? Has the program effectively penetrated the small-to-medium business market?
- How effective are the DCSEU energy efficiency initiatives' outreach to the target population? Are there additional resources that should be leveraged to reach the target populations?
- How involved have contractors been in promoting the DCSEU energy efficiency initiatives? What additional information/training is needed to increase the involvement of contractors?
- Has the program been successful in encouraging larger customers to participate in the Custom initiatives? How do customers and customer agents perceive the value of the DCSEU technical assistance? Is the role of a "trusted energy advisor" being achieved?
- How easy is the application and checklist to complete?
- Does the rebate structure promote appropriate installation contractor practices? Are there additional issues to address within the installation contractor-utility relationship?
- What barriers exist to participating in the program? What factors are motivating customers to participate in lighting only, and what barriers exist to obtaining participation of other measures from existing rebate customers?
- Are there any issues or concerns regarding data quality?
- Is the process for verifying installation of fixtures effective and accurate? Are there any issues or concerns regarding data quality?
- How streamlined is the process for approving applications?
- Is the program designed and operating efficiently and effectively?



- How satisfied are customers and contractors with the program? What improvements are needed?
- Is the program effective in encouraging the installation of energy efficient equipment that would not have occurred without the program?
- Ate the DCSEU energy efficiency initiatives achieving market transformation effects? Where pertinent, how are customers adjusting to the shift from the DCSEU covering the fill project cost to the requirement that the customer contribute to the project cost?

This guide used for multiple tracks. Target completes shown below:

TRACK	SAMPLE	TARGETS	Notes
7510BLTZ	72	5	
7510MTV	46	5	
7520CUST	233	5	
7520MARO	6	2	
7520NEWC	3	1	

NAME: _____

COMPANY: _____

TRACK(s): _____

TITLE: _____

PHONE: _____

INTERVIEWER: _____

DATE COMPLETED: _____ **LENGTH:** _____



D.1.3 Introduction

My name is _____, with Tetra Tech. The District of Columbia Sustainable Energy Utility (or DCSEU) has selected our firm to evaluate its [INITIATIVE] initiative. The study will provide recommendations on how they can improve the program for you and your customers. I would like to ask you some questions about your experience with the program. Your feedback on the program is extremely valuable as DCSEU wants to improve your experience and satisfaction with the program as well as your customers. As part of this study we are talking to approximately 18 businesses such as yours that work with the [INITIATIVE] initiatives as well as customers who have participated. This interview should take approximately 30 minutes of your time. May we take some time now to do the interview? (If no, when would be a convenient time?)

(IF NECESSARY) I want to assure you that all of your responses and information about your company will be kept confidential and will not be reported individually by your name or businesses name.

D.1.4 Firmographics

Research company website before interview to learn about company.

F1. What is your primary role(s) in the supply and delivery of energy efficient lighting to the nonresidential market? (Examples designer, manufacturer representative, retailer, wholesale distributor, installation contractor)

F2. Overall, about what percentage of your company's customers are:

Residential _____%

Nonresidential _____%

F3. And of your **nonresidential** customers, about what percentage are:

Government/Schools _____%

Nonprofit organizations _____%

Commercial or Industrial _____%

F4. What percentage of your commercial business is:

Planned Equipment Replacement? _____%

New Equipment Purchases (for new buildings) _____%

Failed/Emergency Equipment Replacement _____%

Other (specify) _____%



F5. [7510BLTZ/7510MTV] What percent of your lighting projects are for small businesses versus larger businesses? We are defining small businesses as those with less than 10,000 sq ft or use less than 5,000 kWh per month.

F6. Could you please tell me specifically the types of DCSEU eligible equipment or services you sell/specify for nonresidential customers? (Probe for the specific types, sizes and efficiency levels as applicable.)

D.1.5 Program awareness and involvement

P1. Our records show that you installed at least one project for a customer through DCSEU's energy efficiency initiatives. Could you describe for me your participation with the DCSEU [Probe for reasons why participates at the reported level of activity.]

P2. When did you first get involved with DCSEU's energy efficiency initiatives?

P3. How did you first hear about DCSEU's energy efficiency initiatives? (Probe by specific program as applicable)

P4. Why did you decide to participate/get involved with the DCSEU energy efficiency initiatives?

P4a. When was the last time you completed a project or sold equipment through an initiative?

P5. Do you expect your participation/involvement to increase, decrease or stay the same in the next 12 months? Why? If not mentioned, probe specifically what the economy has on their current and expected involvement in the program.

P6. Have you received any communications from DCSEU regarding their energy efficiency initiatives?

Yes

No (SKIP TO P9)

P7. Do you feel there are adequate communications with DCSEU staff? Are any changes needed? How do you like to receive communications about the program?

P8. Who do you typically interact with from the program? For what purposes? How would you describe your interactions with program staff? (minimal, helpful, very involved, probe to characterize)?

P8a. Is there any part of the process where communication amongst parties could be improved?

P8b. Are there any aspects of the energy efficiency initiatives that are unclear to you? That are unclear to your customers?

P8c. What kind of additional support would you like from the DCSEU to assist in the implementation of their initiatives?



P9. What is the primary benefit(s) you receive from DCSEU's energy efficiency initiatives? What value do you place on the DCSEU technical assistance provided?

P10. Are there other types of energy efficiency programs that you participate in /are aware of? If yes, do you think there are lessons learned for DCSEU from these other programs? (Probe on whether utility programs or federal/state programs).

P11. What could DCSEU do to help you provide more services/promote more equipment?

P12. Would you find it useful if DCSEU offered a formal trade ally outreach program, where participating trade allies could sign up to receive periodic communications on upcoming marketing activities, training opportunities, and other updates? How would you prefer to receive this type of information?

D.1.6 Customer interactions

C1. Do you actively promote DCSEU's [energy efficiency initiatives to your nonresidential customers? In what way?

C1B. Are the requirements to be eligible for the DCSEU funding and technical assistance appropriate? Is there anything you would change about those requirements?

C1A. What percent of your customers already know about the DCSEU energy efficiency initiatives before you tell them about it? How do they find out about the assistance DCSEU provides?

C2. What are the primary reasons why customers typically want to participate? What factors most influence customer project decision-making? Ask of mentioned factors: which are the one or two most important in influencing customers' decisions? Probe for differences among customer segments and differences for new construction (including major renovation) and retrofits of existing lighting systems.

If needed, examples of factors include the following:

- Fits standard design
- Overall cost of the project
- Availability of a rebate through utility program
- Information and education provided by utility on the benefits of energy-efficient technologies or services
- Saves electric costs
- Helps the environment
- Shows good corporate citizenship
- Meets payback criteria
- Impact on company financials
- Recommendation of manufacturer, supplier, contractor, etc.

C3. What are the primary reasons why customers typically do not want to participate in the DCSEU energy efficiency initiatives? Do these reasons vary across different customer segments (type of business and size of business)? Is there anything DCSEU could do to help reduce these participation barriers?



C4. On a scale of 1 to 5 where 1 is very difficult and 5 is not at all difficult, how difficult do you find it to sell energy efficient equipment to your nonresidential customers?

C4a. Why is the equipment or service [easy/difficult] to sell and why are there “lost opportunities” for DCSEU (e.g., projects that are not high efficiency that could have been). Are there customer participation barriers (e.g., incremental cost of efficient high efficiency equipment, too long of a payback period, etc.)? (If not mentioned) has there been any effect of the slower economy on customers’ decision to participate in program?

C4b. Do you have any specific recommendations to make it less difficult?

C5. What do you think are the main benefits your customers receive by participating in the DCSEU energy efficiency initiatives?

C6. What additional products or services would you like to see provided to customers?

C7. What can be done to increase the number of participating customers?

C7a. What feedback, if any, have you received from your customers regarding the newly installed energy efficient equipment?

C8. Are there other opportunities to promote energy-efficient products and services to nonresidential customers that the DCSEU energy efficiency initiatives do not currently address?

C9. Would you like to see the DCSEU energy efficiency initiatives do more direct or specific marketing to customers? If yes, what kind of marketing would you like to see added? What can be done to help you market the DCSEU initiatives to your non-residential customers?

D.1.7 Program procedures

E0. What role do you usually play, if any, in helping your customers with the application process? If not currently doing so, would you be willing to play more of a role in helping customers fill out application forms and submit them to DCSEU to obtain rebates?

E1. On a scale of 1 to 5 where 1 is ‘very difficult’ and 5 is ‘not at all difficult’, how would you rate the administrative burden in terms of application requirements and processing? Why do you give this ranking?

E2. What is working well about the application process from the customer’s point of view? Your point of view? How would you like to see the application process improved?

E3. Is the information required on the rebate application reasonable? Are customers able to adequately fill out the rebate application on their own? Do you think the administrative burden is a barrier for smaller customers?

E4. Do you or your customers have any issues using the submittal checklist at the end of the project? What issues have come up and how has DCSEU resolved them?



E5. Are the rebates offered through the programs adequate? How would you like to see the rebate structure revised? (Probe by measure type and business type)

E6. What changes, if any, would you make to the equipment and/or services rebated through the DCSEU energy efficiency initiatives?

E7. How involved are you with the quality control processes post-installation? Have you had any issues with the process? Who all is involved? Do you have any recommendations for improving the quality control process?

E8. Has any of the equipment installed been removed? If so, why is that? What was it replaced with?

D.1.8 Market

M1. One of the purposes of the DCSEU energy efficiency initiatives is to encourage customers to purchase and install more efficient equipment than they would otherwise purchase or install. Do you feel the program is accomplishing this? Why or why not?

M2. Have your company's sales or stocking of high efficiency equipment changed since you became aware of DCSEU's energy efficiency initiatives? If so, what impact have the initiatives had on these changes?

M3. What other services not currently offered from DCSEU would you like to see for C&I customers? What types of programs work best for them (ie, direct install, rebates, etc.)?

M4. Do you feel your customers value the products and services they received through the DCSEU energy efficiency initiatives? How do you feel customers perceive the value of the technical assistance the DCSEU provides?

M5. One of the initiatives goals is to provide market transformation. Do you believe the DCSEU initiatives are accomplishing that goal? Do you have any recommendations for doing so?

D.1.9 Conclusion

W1. What do you think is working best with DCSEU's energy efficiency initiative?

W2. What do you think is most in need of improvement?

W3. Overall, how satisfied are you with this energy efficiency initiative? Would you say you are very satisfied, somewhat satisfied, neither satisfied or dissatisfied, somewhat dissatisfied, or very dissatisfied? How could your satisfaction be increased?

W4. Is there anything else that you would like to share concerning the DCSEU energy efficiency initiatives?

Thank you for your time. This completes our interview.



APPENDIX E: NON-RETAIL LIGHTING PARTICIPANT PRENOTIFICATION LETTER

GOVERNMENT OF THE DISTRICT OF COLUMBIA
District Department of the Environment



[DATE], 2013

ID: [CASEID]

[ADDRESS BLOCK]

Dear [NAME],

The District Department of the Environment (DDOE) has hired Tetra Tech, a professional energy efficiency programs evaluation and research firm, to evaluate the District of Columbia Sustainable Energy Utility (DCSEU) energy efficiency programs. The purpose of this evaluation effort is to understand how these programs are operating and to verify equipment installations.

Within the next few weeks, you may receive a telephone call from Tetra Tech to ask you a short series of questions about the energy efficiency equipment you received as part of a DCSEU energy efficiency program and the factors that influence your decisions when considering energy-related purchases. Ebert & Baumann Consulting Engineers, an evaluation project partner with Tetra Tech, may also attempt to reach you to schedule a visit in order to review the equipment installed through the program and ask about your experiences and the factors that were important to you when deciding to participate.

If you have any questions about the purpose of the study or its use, please feel free to contact Lance Loncke at (202) 671-3306. If you would like to call Tetra Tech to schedule an interview at your convenience, feel free to call (800) 454-5070. If you would like to call Ebert & Baumann Consulting Engineers to schedule a visit at your convenience, feel free to call Kindra Lam at (202) 608-1334. In either case, please refer to your ID number at the top right corner of this letter.

Thank you in advance for your help with this important study.

Sincerely,

Lance Loncke, Ph.D.
Associate Director, DDOE



1200 First St. NE, 5th Floor, Washington, DC 20002 | Tel: (202) 535-2600 | web:ddoe.dc.gov

APPENDIX F: RETAIL LIGHTING PARTICIPANT PRENOTIFICATION LETTER

GOVERNMENT OF THE DISTRICT OF COLUMBIA
District Department of the Environment



[DATE], 2013

ID: [CASEID]

[ADDRESS BLOCK]

Dear [NAME],

The District Department of the Environment (DDOE) has hired Tetra Tech, a professional energy efficiency programs evaluation and research firm, to evaluate the District of Columbia Sustainable Energy Utility (DCSEU) energy efficiency programs. The purpose of this evaluation effort is to understand how these programs are operating and to verify equipment installations.

Within the next few weeks, you may receive a telephone call from Tetra Tech to ask you a short series of questions about the energy efficiency lighting equipment you purchased recently, about which you have already completed either a postcard or in-person survey. In addition to learning about the use of the energy efficiency lighting discounted through the DCSEU energy efficiency program, we are interested in understanding the factors that influence your decisions when considering energy efficient lighting or other energy equipment related purchases.

If you have any questions about the purpose of the study or its use, please feel free to contact Lance Loncke at (202) 671-3306. If you would like to call Tetra Tech to schedule an interview at your convenience, feel free to call (800) 454-5070. In either case, please refer to your ID number at the top right corner of this letter.

Thank you in advance for your help with this important study.

Sincerely,

Lance Loncke, Ph.D.
Associate Director, DDOE



1200 First St. NE, 5th Floor, Washington, DC 20002 | Tel: (202) 535-2600 | web:ddoe.dc.gov





APPENDIX G: OVERARCHING PARTICIPANT PRENOTIFICATION LETTER

GOVERNMENT OF THE DISTRICT OF COLUMBIA

District Department of the Environment



[DATE], 2013

ID: [CASEID]

[ADDRESS BLOCK]

Dear [NAME],

The District Department of the Environment (DDOE) has hired Tetra Tech, a professional energy efficiency programs evaluation and research firm, to evaluate the District of Columbia Sustainable Energy Utility (DCSEU) energy efficiency programs. The purpose of this evaluation effort is to understand how these programs are operating and to verify equipment installations.

Within the next few weeks, you may receive a telephone call from Tetra Tech to ask you a short series of questions about the energy efficiency equipment you received as part of a DCSEU energy efficiency program and the factors that influence your decisions when considering energy-related purchases. Ebert & Baumann Consulting Engineers, an evaluation project partner with Tetra Tech, may also attempt to reach you to schedule a visit in order to review the equipment installed through the program and ask about your experiences and the factors that were important to you when deciding to participate.

If you have any questions about the purpose of the study or its use, please feel free to contact Lance Loncke at (202) 671-3306. If you would like to call Tetra Tech to schedule an interview at your convenience, feel free to call (800) 454-5070. If you would like to call Ebert & Baumann Consulting Engineers to schedule a visit at your convenience, feel free to call Kindra Lam at (202) 608-1334. In either case, please refer to your ID number at the top right corner of this letter.

Thank you in advance for your help with this important study.

Sincerely,

Lance Loncke, Ph.D.
Associate Director, DDOE



1200 First St. NE, 5th Floor, Washington, DC 20002 | Tel: (202) 535-2600 | web:ddoe.dc.gov

APPENDIX H: RESIDENTIAL PARTICIPANT SURVEY INSTRUMENT

VEIC DDOE DCSEU Participant Survey 11-21-2013 — Solar Photovoltaic, Retail Efficient Products, Federal Home Loan Bank and Home Performance with Energy Star Programs

Variable List

The survey instrument contains a number of areas where sample information needs to be filled in to customize the survey for a particular program. The following list describes the ‘fills’ contained in this instrument and the nature of that information.

<CONTACT>	Respondent name
<UTLYCONT>	Utility contact information
<DATE>	Date (approximate) of participation
<CFLQTY>	Number of CFLs installed through HPWES or FHLB
<TRACK>	Program code

Track	Sample program name
7120PV	Solar Photo Voltaic
7420FHLB	Federal Home Loan Bank
7420HPES	Home Performance with ENERGY STAR®
7710APPL	Energy Efficient Appliances (Retail Efficient Appliances)
7710LITE	Energy Efficient Lighting (Retail Lighting)

<HOME>	[For 7710LITE] Flag if intercept/postcard indicated plans to install lights at home
<BUSINESS>	[For 7710LITE] Flag if intercept/postcard indicated plans to install lights at a business
<PROGRAM>	Program
	1 Solar Photo Voltaic
	2 Federal Home Loan Bank
	3 Home Performance with ENERGY STAR®
	4 Energy Efficient Appliances (Retail Efficient Appliances)
	5 Energy Efficient Lighting (Retail Lighting)

Track	Sample program name	Show statement
7120PV	Solar Photo Voltaic	Solar Photovoltaic Program
7420FHLB	Federal Home Loan Bank	Federal Home Loan Bank
7420HPES	Home Performance with ENERGY STAR®	Home Performance with Energy Star program



7710APPL	Energy Efficient Appliances (Retail Efficient Appliances)	Energy Efficient Appliances program
7710LITE	Energy Efficient Lighting (Retail Lighting)	Energy Efficient Lighting program

<INTERVIEWER>

Interviewer Name

<MEAS1...>

Measures 1-8

Measure	Show statement
Building Shell	Building Shell project
Heating	Heating project
Lighting	Energy efficient light bulbs
Other HVAC	HVAC project
Solar PV	Solar PV project
Water Heating	Water heating equipment
Refrigerator	Refrigerator
Clothes Washer	Clothes Washer

<ALLASST>

Generic description of assistance received through program

Code	Sample program name	ALLASST
7120PV	Solar Photo Voltaic	free equipment and installation
7420FHLB	Federal Home Loan Bank	home audit with direct install measures, recommendations and financial assistance
7420HPES	Home Performance with ENERGY STAR®	home audit with direct install measures,, recommendations and financial assistance
7710APPL	Energy Efficient Appliances (Retail Efficient Appliances)	rebate
7710LITE	Energy Efficient Lighting (Retail Lighting)	discount

NOTE: For all questions, "DON'T KNOW" and "REFUSED" will be coded if offered as a response. Interviewers will probe as needed to minimize the amount of missing data.

For any case where the interview terminates early, respondent doesn't recall measures, measures are not installed, or the contact no longer works at the company, and we cannot locate a knowledgeable respondent, the case will be further examined to determine if additional contact information is available if insufficient sample remains.



Introduction

- I1** Hello, my name is _____, and I'm calling from Tetra Tech on behalf of the District Department of the Environment. We were asked by the District Department of the Environment to evaluate the energy efficiency programs offered by the District of Columbia Sustainable Energy Utility (DC SEU).

May I please speak with **[CONTACT]**?

1 Yes

2 No [ATTEMPT TO CONVERT, MENTION ADVANCE LETTER]

[INTERVIEWER: YOU ARE CALLING TO CONTINUE A PARTIALLY COMPLETED INTERVIEW]

Hello, my name is _____, and I'm calling from Tetra Tech on behalf of the District Department of the Environment. I'm calling to complete the interview we started earlier. For quality assurance and training purposes, this call will be recorded.

1 Continue

- I2** We are calling today to conduct a brief telephone survey on the experience you had with **[PROGRAM]**. This survey should take about 15 minutes of your time. Before we start, I would like to inform you that for quality control purposes, this call will be recorded and monitored.

1 Continue

- I3** [Who is DC SEU? The District of Columbia Sustainable Energy Utility (DC SEU) helps District residents, businesses, and institutions save energy and money through energy efficiency and renewable energy programs.]

[Why are you conducting this survey: Studies like this will help DC SEU better understand your needs, which helps them in their design of energy efficiency programs.]

[Timing: This survey should take about 15-20 minutes. *IF NOT A GOOD TIME, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.*]

[Sales concern: This is not a sales call; we would simply like to learn about your household's experiences with the DC SEU Program. Your responses will be kept confidential. If you would like to talk with someone from DC SEU to verify this survey, please feel free to contact **[UTLYCONT]**.]



1 Continue

Identification of Decision-Maker

C1 Do you recall receiving the **[ALLASST]** through the **[PROGRAM]** around **[DATE]**?

- 1 Yes [SKIP TO C4]
- 2 No
- D Don't know
- R Refused

C2 Is there someone else available that might be more familiar with your household's participation in this program?

- 1 Yes [SKIP TO C1]
- 2 No [TERMINATE]
- D Don't know [TERMINATE]
- R Refused [TERMINATE]

C4 Were you one of the primary decision-makers when deciding to implement this project through the **[PROGRAM]**?

- 1 Yes
- 2 No [SKIP TO C2]
- D Don't know [SKIP TO C2]
- R Refused [SKIP TO C2]

Installation Verification – Home Performance with Energy Star
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[IF **[TRACK]**<> "7420HPES" AND "7420FHLB", SKIP TO N18]

HPINT As part of your participation in the **[PROGRAM]**, a contractor visited your place of residence to conduct an assessment of your home's energy efficiency. As part of the visit, the contractor may have installed some direct savings energy efficiency equipment such as light bulbs and water saving devices.

[IF SHELL = 1 OR OTHHVAC = 1 OR HEATING = 1] In addition, you may have installed additional equipment or made additional improvements to your home with the assistance of the program.

[If LIGHTING = 1 or WATHEAT = 1] First, I would like to ask a few questions about the equipment that was installed in your home.

H-4



1 Continue

N1A [IF Lighting <>1, SKIP TO WS1] According to our records, you received **[CFLQTY]** CFLs during the visit by the contractor. Is this correct?

- 1 Yes
- 2 No
- D Don't know
- R Refused

N1B [IF N1A <>2 AND N1A<>D AND N1A<>R, SKIP] How many CFLs did you receive?

- [RECORD RESPONSE]
- 88 Don't know [SKIP TO WS1]
- 99 Refused [SKIP TO WS1]

N1 Did the contractor install these new light bulbs directly into light fixtures or did they leave them with you? [DO NOT READ LIST – CHOOSE APPROPRIATE ANSWER BASED ON RESPONSE]

- 1 The new light bulbs were installed by the contractor directly in the light fixture [SKIP TO N5]
- 2 The contractor left behind new lights for me to install
- 3 Some light bulbs were left behind and some were installed directly
- 4 Did not receive new light bulbs [SKIP TO WS1]
- D Don't know [SKIP TO WS1]
- R Refused [SKIP TO WS1]

N2 [IF N1<>3, SKIP] Would you say that . . . ? [READ LIST]

- 1 Most of the bulbs were installed directly by the contractor.
- 2 Most of the bulbs were left behind for you to install.
- 3 About half of the bulbs were installed by the contractor and the other half were left behind for you to install
- D Don't know
- R Refused

N3 [IF N1<>2 AND N1<>3, SKIP] Of the [IF N1A=1: **[CFLQTY]**, IF N1A <>1: N1B] total energy-saving light bulbs you received, do you remember how many bulbs the technician left behind for you to install?

[IF NEEDED: Your best estimate is fine]



___ [RECORD NUMBER OF BULBS]

88 Don't know

99 Refused

N4 [IF N3=88 OR N3=99, SKIP] Of the bulbs left behind, how many have you installed so far?

[IF NEEDED: Your best estimate is fine]

___ [RECORD NUMBER INSTALLED]

88 Don't know

99 Refused

N5 Have you taken out any of the light bulbs that were installed?

1 Yes

2 No [SKIP TO WS1]

D Don't know [SKIP TO WS1]

R Refused [SKIP TO WS1]

N6 How many light bulbs did you remove?

___ [RECORD NUMBER REMOVED]

88 Don't know

99 Refused

N7 When you removed the light bulb [IF N6>1:(s)], did you replace [N6=1: "it"/IF N6>1: "them"] with another energy-efficient light bulb or a regular light bulb?

1 Energy-saving light bulb (CFL)

2 Regular light bulb (incandescent)

3 Other [RECORD]

4 Did not replace (delamped)

D Don't know

R Refused

WS1 [IF WATHEAT<>1, SKIP TO N18] Which water saving measures did you receive through the program: low flow showerheads or faucet aerators?

1 Faucet aerators

2 Low flow showerheads [SKIP TO N13A]

3 Both

4 Neither [SKIP TO N18]

D Don't know [SKIP TO N18]



R Refused [SKIP TO N18]

N7A How many faucet aerators did you receive as part of the contractor visit?

___ [RECORD RESPONSE]

88 Don't know

99 Refused

N8 Did the contractor install the aerator(s) directly onto your faucet(s) or did they leave them with you? [DO NOT READ LIST – CHOOSE APPROPRIATE ANSWER BASED ON RESPONSE]

1 The new aerator(s) were installed by the contractor directly onto the faucet(s)
[SKIP TO N11]

2 The contractor left behind the new aerator(s) for me to install

3 Some aerators were left behind and some were installed directly.

4 Did not receive new aerators [SKIP TO N13A]

D Don't know [SKIP TO N13A]

R Refused [SKIP TO N13A]

N9 Do you remember how many aerators they left behind for you to install?

[IF NEEDED: Your best estimate is fine]

___ [RECORD NUMBER LEFT BEHIND]

88 Don't know

99 Refused

N10 [IF N9=88 OR N9=99, SKIP] Of the aerators left behind, how many have you installed so far?

[IF NEEDED: Your best estimate is fine]

___ [RECORD NUMBER INSTALLED]

88 Don't know

99 Refused

N11 Have you removed any of the aerators that were installed?

1 Yes

2 No [SKIP TO N12A]

D Don't know [SKIP TO N12A]

R Refused [SKIP TO N12A]



N12 How many aerators did you remove?

- ___ [RECORD NUMBER REMOVED]
 88 Don't know
 99 Refused

N12A [IF N11=1 AND N7 minus N12>0, SKIP TO N13A] How many of the aerators that are still installed are on bathroom faucets?

- ___ [RECORD NUMBER INSTALLED]
 88 Don't know
 99 Refused

N12B How many of the aerators that are still installed are on kitchen or other faucets?

- ___ [RECORD NUMBER INSTALLED]
 88 Don't know
 99 Refused

N13A [IF WS1<>2 OR WS1<>3, SKIP N18] How many low-flow showerheads did you receive as part of the contractor visit?

- ___ [RECORD RESPONSE]
 88 Don't know [SKIP TO N18]
 99 Refused [SKIP TO N18]

N13 Did the contractor install the showerhead(s) directly onto your shower(s) or did they leave them with you? [DO NOT READ LIST – CHOOSE APPROPRIATE ANSWER BASED ON RESPONSE]

- 1 The new showerhead(s) were installed by the contractor directly onto the shower(s). [SKIP TO N16]
 2 The contractor left behind the new showerhead(s) for me to install.
 3 Some showerheads were left behind and some were installed directly.
 4 Did not receive new showerheads. [SKIP TO N18]
 D Don't know [SKIP TO N18]
 R Refused [SKIP TO N18]

N14 Do you remember how many showerheads they left behind for you to install?

[IF NEEDED: Your best estimate is fine]

- ___ [RECORD NUMBER LEFT BEHIND]
 88 Don't know
 99 Refused



N15 [N14=88 OR N14=99, SKIP] Of the showerheads left behind, how many have you installed so far?

[IF NEEDED: Your best estimate is fine]

___ [RECORD NUMBER INSTALLED]

88 Don't know

99 Refused

N16 Have you removed any of the showerheads that were installed?

1 Yes

2 No [SKIP TO N18]

D Don't know [SKIP TO N18]

R Refused [SKIP TO N18]

N17 How many showerheads did you remove?

___ [RECORD NUMBER REMOVED]

88 Don't know

99 Refused

Installation Verification – Rebated Measures

[REPEAT N18 – N19 FOR EACH MEASURE]

N18 Our records show that you received [ALLASST] towards the purchase of **[MEAS]** equipment through the **[PROGRAM]**.

[IF MEAS<> "Clothes Washer" AND MEAS<>"Refrigerator"] This may have included:

[IF MEAS= "Building Shell"]: insulation, air sealing and/or windows.

[IF MEAS= "Heating"]: boiler or furnace equipment.

[IF MEAS= "Lighting"]: CFL or LED bulbs

[IF MEAS= "Other HVAC"]: duct sealing or thermostat equipment.

[IF MEAS= "Solar PV"]: an electric solar panel system

[IF MEAS= "Water Heating"]: a water heater, pipe insulation, faucet aerators or low-flow showerheads

[IF MEAS<> "Clothes Washer" AND MEAS<>"Refrigerator" and MEAS<> "Lighting" and MEAS<> "Water Heating"] From this point forward, I will refer to these improvements as **[MEAS]**.



N18A Is this equipment currently installed?

- 1 Yes, I received the **[MEAS]** and it is still installed
- 2 Yes, I received the **[MEAS]** but I have since removed it
- 3 No, I did not receive **[MEAS]** [SKIP TO NEXT SECTION]
- D Don't know [SKIP TO NEXT SECTION]
- R Refused [SKIP TO NEXT SECTION]

N19 [IF N18A<>2, SKIP] Approximately when did you remove the **[MEAS]**?

[RECORD MONTH (MM) and YEAR (YYYY) measure was removed.]

[IF entering 8888 or 9999, enter in MONTH.]

____ MONTH ____ YEAR
 8888 Don't know
 9999 Refused

Free-Ridership

[IF N18A=3 for FRMEAS, SKIP TO SP1]

FRINT For the next series of questions, I would like to focus on the

[MEAS] you installed through the **[PROGRAM]**.

LFR1 Which of the following most likely would have happened if you had NOT received the **[ALLASST]** through the **[PROGRAM]**? Would you have...

- 1 [IF TRACK= "7120PV"] Done nothing (not installed any equipment)
 [IF TRACK <> "7120PV" and TRACK<> "7710APPL" and TRACK <> "7710LITE"] Cancelled or postponed implementation of the **[MEAS]** longer than one year
 [IF TRACK= "7710APPL" OR TRACK= "7710LITE"] Done nothing (not purchased a **[MEAS]** at all)
- 2 [IF TRACK<> "7710APPL" AND TRACK <> "7710LITE"] Reduced project size, scope or efficiency level of the **[MEAS]** or
 [IF TRACK = "7710APPL" OR TRACK = "7710LITE"] Purchased **[MEAS]** of lower efficiency or
- 3 [IF TRACK <> "7710APPL" AND TRACK<> "7710LITE"] Implemented the same project within one year, regardless of the **[ALLASST]** you received through the **[PROGRAM]**
 [IF TRACK = "7710APPL" OR TRACK = "7710LITE"] purchased the exact same **[MEAS]**, regardless of the **[ALLASST]** you received through the **[PROGRAM]**

**LFR2** [IF LFR1<>2, SKIP]

[IF TRACK <> “7710APPL” AND TRACK <> “7710LITE”] Would you have reduced the size, scope or efficiency of the **[MEAS]** a small amount, a moderate amount, or a large amount?

[IF TRACK = “7710APPL” OR TRACK = “7710LITE”] Would the **[MEAS]** you purchased have been slightly efficient, moderately less efficient or much less efficient?

- 1 A small amount [IF TRACK = “7710APPL” OR TRACK = “7710LITE”] Slightly less efficient
- 2 A moderate amount [IF TRACK = “7710APPL” OR TRACK = “7710LITE”] Moderately less efficient
- 3 A large amount [IF TRACK = “7710APPL” OR TRACK = “7710LITE”] Much less efficient
- D Don’t know
- R Refused

LFR3 [IF LFR1<>3, SKIP]

[IF TRACK <> “7120PV”] Would you have paid the entire cost of the **[MEAS]** in the absence of the **[ALLASST]** you received through the **[PROGRAM]**?

[IF TRACK = “7120PV”] Would you have paid to implement the same project even if you had to pay the full cost of the upgrades, without **any** financial assistance?

- 1 Yes
- 2 No
- D Don’t know
- R Refused

LFR4a [IF TRACK <> “7120PV” OR (LFR1 <>2 AND LFR1 <>3) OR (LFR2= “D” OR LFR3= “D”), SKIP] We would like to understand more about how the program impacted your decision to implement the **[MEAS]**. In your own words, please elaborate on how the provision of **[ALLASST]** by the **[PROGRAM]** impacted the timing, scope, efficiency level or size of any project you would have implemented without any assistance.

[PROBE, IF NECESSARY: In a previous response, you indicated that

(IF LFR1 = 2): you would have reduced the size, scope or efficiency of the project at least somewhat.

(IF LFR3 = 1): you would have paid to implement the project in full without any financial assistance.

(IF LFR3 = 2): you would have implemented a similar project without assistance.

Could you talk a bit about what the project would have looked like in the absence of the **[PROGRAM]**?



[RECORD VERBATIM RESPONSE]

LFR4INT I am going to read you a list of aspects of the **[PROGRAM]**. On a scale of 1-5, where 1 is 'not at all influential' and 5 is 'extremely influential,' please tell me how influential each of these program aspects were in your decision to implement the **[MEAS]** project. How influential was...

[NOTE: Include "Not applicable" option]

- AA [IF TRACK ="7710LITE" OR TRACK ="7120PV", SKIP] The incentive or rebate offered through the **[PROGRAM]**.
- BB [IF TRACK<>"7710LITE", SKIP] The discounted price of the **[MEAS]**
- CC Assistance or information you received from DC SEU program staff
- DD [IF TRACK<>"7420HPES" AND TRACK <>"7420FHLB", SKIP] Information provided during the home energy audit
- EE [IF TRACK<>"7420HPES" AND TRACK<>"7420FHLB" AND TRACK<>"7120PV", SKIP] The recommendation from the contractor you worked with
- FF [IF TRACK<>"7710LITE" AND TRACK<>"7710APPL", SKIP] Information or a recommendation from the retailer where you purchased the **[MEAS]**

Spillover

SP1 Since participating in the **[PROGRAM]**, have you purchased any other type of energy efficient or ENERGY STAR rated equipment for use within the District of Columbia?

- 1 Yes
- 2 No [SKIP TO LS1]
- D Don't know [SKIP TO LS1]
- R Refused [SKIP TO LS1]



SP2 What energy efficient equipment have you purchased? [SELECT ALL THAT APPLY]

[IF ENERGY STAR electronics, PROBE: What type?]

- | | | |
|----|-------------------------|------------------------|
| 1 | CFLs | [CFLFLAG=1] |
| 2 | LEDs | [LEDFLAG=1] |
| 3 | ENERGY STAR electronics | [SPECIFY] |
| 4 | Refrigerator/freezer | |
| 5 | Water heater | |
| 6 | Dishwasher | |
| 7 | Clothes washer | |
| 8 | Clothes dryer | |
| 9 | Furnace | |
| 10 | Heat pump | |
| 11 | Room air conditioner | |
| 12 | Central air conditioner | |
| 13 | Dehumidifier | |
| 14 | Low flow showerhead | |
| 15 | Faucet aerator | |
| 16 | Programmable thermostat | |
| 17 | Insulation | [SPECIFY: What types?] |
| 18 | Windows | |
| 19 | Pool pump | |
| 20 | Other | [SPECIFY] |
| 21 | Don't know | [SKIP TO LS1] |
| 22 | Refused | [SKIP TO LS1] |

[REPEAT SP3 to SP5 FOR EACH MENTIONED IN SP2]

SP2TA [IF SP2<>20, SKIP] What kinds of energy efficient equipment?
[RECORD EQUIPMENT TYPES ONLY]

SP3 [IF SP2=17 OR SP2=1 OR SP2=2, SKIP] How many/much [SP2 Equipment] did you purchase?

___ [RECORD RESPONSE]

888 Don't know

999 Refused

SP3A How do you know the [SP2 Equipment] is energy efficient? [PROBE: Is it ENERGY STAR rated? Do you know the SEER level?]

[RECORD VERBATIM]

SP4 [IF SP2=1 OR SP2=2, SKIP] Did you receive a rebate for the [SP2 Equipment] from DC SEU?



- 1 Yes
- 2 No
- D Don't know
- R Refused

SP5 On a scale of 0 to 10, with 0 being no influence and 10 being total influence, how much influence did your participation in the **[PROGRAM]** have on your decision to purchase the energy efficient [SP2 Equipment]?

- ___ [0-10]
- 88 Don't know
- 99 Refused

Lighting Spillover

LS1 [IF SP2=1 OR SP2=2 OR CFLFLAG=1 OR LEDFLAG=1, SKIP] Since participating in the **[PROGRAM]**, have you purchased any energy efficient lighting, such as compact florescent light bulbs or LEDs?

- 1 Yes
- 2 No [SKIP TO MS1]
- D Don't know [SKIP TO MS1]
- R Refused [SKIP TO MS1]

LS2 [IF SP2=1 OR SP2=2, SKIP] Which type of lighting did you buy, compact florescent lighting or LEDs? [SELECT ALL THAT APPLY]

[IF NECESSARY: Compact fluorescent light bulbs – also known as CFLs – usually do not look like regular incandescent bulbs. The most common type of compact fluorescent bulb is made with a glass tube bent into a spiral, resembling soft-serve ice cream, and it fits in a regular light bulb socket.

[IF NECESSARY: LEDs, also known as a light emitting diode bulb, have regular screw bases that fit into most sockets. They are not battery-operated LEDs, holiday lights, or decorative strands and do not need special attachments to work in regular sockets.

- 1 CFLs [CFLFLAG=1]
- 2 LEDs [LEDFLAG=1]
- 3 Both [CFLFLAG=1, LEDFLAG=1]
- D Don't know [SKIP TO MS1]
- R Refused [SKIP TO MS1]

[ASK IF CFLFLAG=1 OR LEDFLAG=1]



IF CFLFLAG=1 BULBTYPE = "CFLs"
IF LEDFLAG=1 BULBTYPE = "LEDs"

[REPEAT LS3 – LS7 FOR EACH BULB TYPE INSTALLED]

LS3 How many [BULBTYPE] did you purchase?

___ [ENTER RESPONSE]
88 Don't know
99 Refused

LS4 Are all of these bulbs currently installed?

1 Yes [SKIP TO LS6]
2 No
D Don't know [SKIP TO LS6]
R Refused [SKIP TO LS6]

LS5 How many of those [BULBTYPE] are currently installed?

___ [ENTER RESPONSE]
88 Don't know
99 Refused

LS6 Were these bulbs installed in your home or in a business?

1 Home
2 Business
D Don't know
R Refused

LS7 Were these bulbs discounted in any way?

1 Yes
2 No
D Don't know
R Refused

LS8 What store or stores did you buy these bulbs? [FOR EACH RESPONSE PROBE:
Where is that located?] [IF NEEDED PROBE: Do you know the neighborhood or
street?]
[SELECT ALL THAT APPLY]



- 1 Safeway
- 2 Home Depot
- 3 Giant Food Stores
- 4 Costco
- 5 Yes! Organic Market
- 6 Ace Hardware (Annie's)
- 7 True Value Hardware (District)
- 8 King's Discount
- 9 Rodman's
- 10 Broad Branch Market
- 11 Walgreens
- 12 Brookville Super Market
- 13 Best World/Bestway Super Market
- 14 Bed Bath and Beyond
- 15 Harris Teeter Supermarket
- 16 Walmart
- 17 Howard Mini Store
- 18 Windows Café and Market
- 19 M&S Liquor and Market
- 20 Martin's Foodtown
- 21 Big Lots
- 22 Frager's Hardware
- 23 Dollar Plus Food Supermarket
- 24 Corner Market
- 25 Goodwill
- 26 Dollar Tree
- 27 Other [SPECIFY STORE(s) ONLY]
- 28 Don't know
- 29 Refused

LS8OTH Where is the other store located?
 [PROBE IF NECESSARY: Do you know the neighborhood or street?]
 [RECORD VERBATIM]

Measure Specific Questions

MS1 [IF (SHELL<>1 AND SOLARPV<>1 AND PTHERM<>1 AND CW<>1 AND REFRIG<>1 AND TRACK<>"7710LITE") SKIP TO D0]. Now, we just have a few specific questions about the equipment installed through the **[PROGRAM]**.

- 1 Continue



L3 [IF Shell<>1, SKIP TO SA6] Do you recall where the insulation you received through the program was installed?

- 1 Yes
- 2 No
- D Don't know
- R Refused

L4 [IF L3<>1, SKIP] Where was the insulation installed? [INDICATE ALL THAT APPLY]

- 1 Ceiling (attic)
- 2 Wall
- 3 Floor
- 4 Other [SPECIFY]
- 5 Don't know
- 6 Refused

SA6 [IF [TRACK] <> "7120PV", SKP T1T] Is the Solar Photovoltaic equipment performing as you expected it to?

- 1 Yes
- 2 No
- D Don't know
- R Refused

SA6b [IF SA6<>2, SKIP] Why do you say that?

[RECORD VERBATIM]

SA7 How, if at all, do you monitor the Solar Photovoltaic equipment's generation? [DO NOT READ, ALLOW MULTIPLE RESPONSES]

- 1 We do not monitor the system
- 2 Utility Bill
- 3 Utility meter Installed with System
- 4 Inverter Meter
- 5 Web Based Monitoring
- 6 Other [RECORD VERBATIM]
- 7 Don't know
- 8 Refused

SA7b [IF SA7<>5, SKIP] What service or website do you use for monitoring?

[RECORD VERBATIM]



SA8 Do you know if the Solar Photovoltaic equipment has had any extended periods of outages?

- 1 Yes
- 2 No
- D Don't know
- R Refused

SA9 [IF SA8<>1, SKIP] When were those outages and how long did they last?

[RECORD VERBATIM]

SA10 Are you aware that there might be times when the Solar Photovoltaic equipment produces more energy than your facility uses and exports energy to the grid?

- 1 Yes
- 2 No [SKIP TO SA12]
- D Don't know [SKIP TO SA12]
- R Refused [SKIP TO SA12]

SA11 [IF SA10<>1, SKIP] Do you have an agreement with your electric utility to buy back any excess power the Solar Photovoltaic equipment exports to the grid?

- 1 Yes
- 2 No
- D Don't know
- R Refused

SA12 How many times a year do you or someone else service or clean the Solar Photovoltaic equipment? [RECORD NUMBER OF TIMES]

- [RECORD RESPONSE] [ENTER '0' FOR NONE]
- 88 Don't know
- 99 Refused

T1T [IF PTHERM=0, SKP TO CW1] Did the Programmable Setback Thermostat you purchased replace an existing thermostat?

- 1 Yes
- 2 No
- D Don't know
- R Refused



T3T [IF T1T<>1, SKIP] Was your old thermostat programmed to automatically change the temperature setting at specific times of the day or did you manually change the thermostat setting when you wanted to change it?

- 1 Programmed
- 2 Manually change
- D Don't know
- R Refused

T5T Is your new thermostat programmed to automatically change the temperature setting at specific times of the day or do you manually change the thermostat setting when you want to change it?

- 1 Programmed
- 2 Manually change
- D Don't know [SKIP TO CW1]
- R Refused [SKIP TO CW1]

T6T At what temperature is your thermostat set in the winter?

- ___ [TEMPERATURE]
- 88 Don't know
- 99 Refused

T7T [IF T5T=1] Is it set to automatically turn down to a lower temperature at night?
[IF T5T = 2] Do you set it to a lower temperature at night?

- 1 Yes
- 2 No
- D Don't know
- R Refused

T8T [IF T5T=D OR T5T=R, SKIP] At what temperature is your thermostat set in the summer?

- ___ [TEMPERATURE]
- 88 Don't know
- 99 Refused

T9T [IF T5T = 1] Is it set to automatically turn down to a higher temperature at night?
[IF T5T = 2] Do you set it to a higher temperature, or turn off your AC, at night?



- 1 Yes
- 2 No
- D Don't know
- R Refused

CW2A [IF CW=0, SKIP TO RF3] How many loads of laundry do you typically wash in a week?

- _____ [NUMBER OF LOADS]
- 88 Don't know
- 99 Refused

CW2B How many loads of laundry do you typically dry in a week in a clothes dryer?

- _____ [NUMBER OF LOADS]
- 88 Don't know
- 99 Refused

CW3 Did the clothes washer you purchased replace an existing clothes washer?

- 1 Yes
- 2 No
- D Don't know
- R Refused

CW4 [IF CW3 <>1, SKIP] Was the clothes washer you replaced a high efficiency model?

- 1 Yes
- 2 No
- D Don't know
- R Refused

CW5 [IF CW4<>1, SKIP] How do you know that your old clothes washer was high efficiency?

[OPEN-ENDED, RECORD RESPONSE VERBATIM]

CW6 [IF CW3 <>1, SKIP] Was the old clothes washer in good, fair, poor, or non-working condition?

- 1 Good
- 2 Fair
- 3 Poor



- 4 Non-working
- D Don't know
- R Refused

RF3 [IF REFRIG=0, SKIP TO LF1] Is the refrigerator you installed through the program being used as your main refrigerator, or is it a secondary or spare unit?

- 1 Main
- 2 Secondary or Spare
- D Don't know
- R Refused

RF9 Did the refrigerator you purchased replace an existing refrigerator?

- 1 Yes
- 2 No [SKIP TO D0]
- D Don't know [SKIP TO D0]
- R Refused [SKIP TO D0]

RF9A [IF RF9 <>1, SKIP TO D0] Would you say that the refrigerator you replaced was less than five years old, 5 to 10 years old, or more than ten years old?

- 1 Less than 5 years
- 2 5-10 years
- 3 More than 10 years
- D Don't know
- R Refused

RF10 [IF RF9 <>1, SKIP] Was the refrigerator you replaced a high efficiency model?

- 1 Yes
- 2 No
- D Don't know
- R Refused

RF11 [IF RF10 <>1, SKIP] How do you know that your old refrigerator was high efficiency?

[OPEN-ENDED, RECORD RESPONSE VERBATIM]



RF12 [IF RF9 <>1, SKIP] Was the old refrigerator in good, fair, poor, or non-working condition?

- 1 Good
- 2 Fair
- 3 Poor
- 4 Non-working
- D Don't know
- R Refused

LF1 [IF Track<>"7710LITE", SKIP TO D0] Our records indicate that you purchased [CFLQTY] energy efficient light bulbs that were discounted by the [PROGRAM]. How many of these bulbs are currently installed?

- ___ [RECORD QUANTITY]
- 88 Don't know [SKIP TO D0]
- 99 Refused [SKIP TO D0]

LF2A [IF LF1=0, SKIP TO LF3] You indicated in our previous survey that you planned to install these light bulbs in your [HOME/BUSINESS]. Just to confirm, is that where they are installed?

- 1 Yes
- 2 No, in a home [HOME=1]
- 3 No, in a business/other
- D Don't know
- R Refused

LF2B You also said you planned to install them in the [ZIP] ZIP code. Is that where they are installed?

- 1 Yes
- 2 No [RECORD ZIP]
- D Don't know
- R Refused

LF3 [IF LF1>=CFLQTY, SKIP] Of the [CFLQTY-LF1] energy efficient bulbs that are not installed, how many do you plan to install within the next twelve months?

- ___ RECORD QUANTITY
- 88 Don't know
- 99 Refused

LF4 [IF LF1=0, SKIP TO D0] How many of these energy efficient light bulbs replaced traditional incandescent light bulbs?



- [RECORD QUANTITY]
 88 Don't know
 99 Refused

LF5A [IF LF1=0 OR HOME<>1, SKIP D0] I am going to read a list of rooms you might have in your home. Please tell me how many of the energy efficient light bulbs are installed in each of these types of rooms. How many light bulbs are installed...

[FOR A-J, RECORD QUANTITY]

- in the kitchen?
- B in a dining room?
- C in living rooms, family rooms, or dens?
- D in a home office?
- E in bedrooms?
- F in bathrooms?
- G in closets or pantries?
- H in the basement?
- I on the exterior of your home?
- J somewhere else I didn't mention? [SPECIFY LOCATION(S)]

Demographics

D0 I just have a few more questions to understand your household better.

D1 Do you own your home or do you rent?

- 1 Own
- 2 Rent
- 3 Occupied without owning/renting
- D Don't know
- R Refused

D2 What type of home do you live in?

- 1 Single Family detached
- 2 Detached Duplex or Triplex
- 3 Attached, including town houses and condominiums
- 4 Apartments
- 5 Other [SPECIFY]
- D Don't know
- R Refused

D3 In which decade was your home built? Was it...



- 1 In the 1930s or before
- 2 In the 1940s
- 3 1950s
- 4 1960s
- 5 1970s
- 6 1980s
- 7 1990s
- 8 2000s
- 9 2010s
- D Don't know
- R Refused

D4 Not including unfinished basements or crawlspace, which of the following best describes the square footage of your home? [READ LIST UNTIL A RESPONSE IS PROVIDED]

- 1 Less than 1,000 square feet
- 2 1,000 to 1,500 square feet
- 3 1,501 to 2,000 square feet
- 4 2,001 to 3,000 square feet
- 5 More than 3,000 square feet
- D Don't know
- R Refused

D5 How many people live in your household year-round?

- ___ [RECORD NUMBER OF PEOPLE]
- 88 Don't know
 - 99 Refused

D5A Do you or any members of your family work from home?

- 1 Yes
- 2 No
- D Don't know
- R Refused

D6 What type of fuel does your water heater use?

[IF "Gas", PROBE: Is that natural gas or propane gas?]

- 1 Natural gas
- 2 Electricity
- 3 Propane
- 4 Wood/pellets
- 5 Other [SPECIFY]



- D Don't know
- R Refused

D7 [IF CW2B=0 OR CW2B=88 OR CW2B=99, SKIP] What type of fuel does your clothes dryer use?

[IF "Gas", PROBE: Is that natural gas or propane gas?]

- 1 Natural gas
- 2 Electricity
- 3 Propane
- 4 Wood/pellets
- D Don't know
- R Refused

D8 For classification purposes only, which of the following best describes your household's total income in 2013? Please stop me when I get to the right category.

- 1 Less than \$15,000
- 2 \$15,000 to less than \$25,000
- 3 \$25,000 to less than \$50,000
- 4 \$50,000 to less than \$75,000
- 5 \$75,000 to less than \$100,000
- 6 \$100,000 to less than \$150,000
- 7 \$150,000 or more
- D Don't know
- R Refused

END Those are all the questions I have for you. I'd like to thank you for your time with this important evaluation.

- 1 Continue

APPENDIX I: MULTIFAMILY/COMMERCIAL AND INDUSTRIAL PARTICIPANT SURVEY INSTRUMENT

FY13 MF and C&I Initiatives Participant Survey Instrument

One participant survey will be used for both the commercial and facility manager surveys. Respondents will only be asked applicable survey modules. The complete list of survey modules follows:

- Introduction
- Verification of Installation
- Source of Initiative Information
- Experiences with the Initiative
- Net-to Gross
- Spillover
- Operating Hours
- Customer Characteristics
- Onsite recruitment

Summary of Tracks Included and Effort/Focus of Survey Questions						
Track	Impact	Process	NTG	FRPath	MF	DI
7510BLTZ	Verification	Full	Full	1	0	1
7510MTV	Verification	Full	Full	1	0	0
7510CIRX	Verification	Defer	Limited	0	0	0
7520CUST	Verification	Full	Full	1	0	0
7520MARO	Verification	Defer	Full	1	0	0
7610BLTZ	Verification	None	Limited	0	1	1
7610ICDI	Verification	Defer	Limited	0	1	1
7620LICP	Verification	Defer	Limited	0	1	0
7110SHOT	Verification	Defer	Limited	0	1	1

FRPATH

Evaluation flag



	0	limited process and NTG
	1	full process and NTG
MF	Multifamily flag	
	0	Business (7510 and 7520)
	1	Multifamily (7620, 7610, and 7110)
FRMEAS	Measure selected for Full NTG battery	
MEAS	Measures to use in Installation Verification	
FRQTY	Quantity to use for wording fills in Full NTG battery	
FREFF	Efficiency flag for wording fills in Full NTG battery	
DIFLAG	Direct install flag for wording fills in Full NTG battery	
MULTFLAG	Multiple indicator	
	0	Non-multiple
	1	Multiple
MULTID	Unique multiple identifier	
MULTPRIM	Primary multiple indicator	
	0	Non-primary multiple
	1	Primary multiple
CASEID	Unique case identifier	
PROJID	Project ID	
TITLE	Project Title	
ADDRESS	Service address	
CITY	Service city	
STATE	Service state	
ZIP	Service zip code	
DATE	Installation date	
CONAME	Company name	
COMPADD	Company address	
FIRSTNAME	First name of respondent	
LASTNAME	Last name of respondent	
AltID1	Alternative contact #1 ID	
AltName1	Alternative contact #1	
AltID2	Alternative contact #2 ID	
AltName2	Alternative contact #2	
AltID3	Alternative contact #3 ID	
AltName3	Alternative contact #3	
MAILADD	Mailing address	
MailCity	Mailing city	



MAILST	Mailing state
MailZip	Mailing zip code
PHONENUMBER	Respondent phone number
Phone2	Alternative phone number

INTRODUCTION

IF MULTFLAG = 1, SKIP TO MULTCHK

C1a Hello, my name is [interviewer name], and I'm calling on behalf of the District Department of the Environment or DDOE. May I speak with [named respondent]?

- 1 Yes
- 2 No *[If named respondent is not available: ask for another person who is familiar with the business's participation in the initiative.]*

C2a I'm with Tetra Tech, a survey research firm hired by the DDOE. We're speaking with businesses that received equipment, financial incentives, or technical assistance for the installation of energy efficient equipment offered through the District of Columbia Sustainable Energy Utility or DCSEU including:

[LIST MEASURES]

You may have received the energy efficient equipment around <DATE>. Do you recall receiving financial incentives or technical assistance from DCSEU for this equipment?

- 1 Yes [SKIP TO INTRO]
- 2 No
- D Don't know
- R Refused [THANK AND TERMINATE]

C4 [IF C2a=2 or DK] Is it possible that someone else in your business would be familiar with the energy efficient equipment, financial incentive, or technical assistance you received?

- 1 Yes
- 2 No [THANK AND TERMINATE]
- D Don't know [THANK AND TERMINATE]
- R Refused [THANK AND TERMINATE]

C5a May I please speak with that person?

- 1 Yes [BEGIN THE SURVEY AGAIN (C2) WITH NEW R]
- 2 No [THANK AND TERMINATE]
- D Don't know [THANK AND TERMINATE]
- R Refused [THANK AND TERMINATE]



MULTCHK [ASK IF MULTFLAG=1] INTERVIEWER: Is this the first case of a multiple?

- 1 Yes
- 2 No [MULTSKP=1]

DECISION [ASK IF MULTFLAG = 1 AND MULTSKP=1] INTERVIEWER: Was the decision making process and experience between all cases in the multiple group exactly the same (answer to Q2A/Q2B in multiples script)?

- 1 Yes [DECISION=1]
- 2 No [DECISION=0]

LOCASK [ASK IF MULTFLAG = 1 AND MULTSKP=1] INTERVIEWER: Were all projects conducted by this organization conducted at exactly the same location (answer to q2c in multiples script)?

- 1 Yes [LOCSAME=1]
- 2 No [LOCSAME=0]

IF [MULTSKP=1] SKIP MF3

INTRO

Great, thank you. First, I'd like to assure you that I'm not selling anything; I'd just like to ask your opinion about your experience. You should have received a letter a couple of weeks ago explaining the purpose of this call. Your responses will be kept confidential. For quality and training purposes this call will be recorded.

[ONLY IF NEW CONTACT - I'm with Tetra Tech, an independent survey firm hired by the District Department of the Environment to evaluate the District of Columbia Sustainable Energy Utility (DCSEU) energy efficiency initiatives.]

[ONLY READ BELOW SCREEN INFORMATION IF NECESSARY]

(Who is DCSEU: The District of Columbia Sustainable Energy Utility (DCSEU) helps District residents, businesses, and institutions save energy and money through energy efficiency and renewable energy initiatives.)

(Why are you conducting this survey: Studies like this will help DCSEU better understand your needs, which helps them in their design of energy efficiency initiatives.)

(Timing: This survey should take about 15-20 minutes. *IF NOT A GOOD TIME, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070.*)

(Sales concern: This is not a sales call; we would simply like to learn about your business's experiences with the DCSEU Initiative. Your responses will be kept



confidential. If you would like to talk with someone from DCSEU to verify this survey, please feel free to contact Lance Loncke at (202) 671-3306.)

IF MULTFLAG = 1, SKIP TO C6E

X1 Are you employed by the company that received the new equipment or are you a contractor who provides design and/or installation services?

[INTERVIEWER NOTE: CODE UNPAID MEMBERS OF AN ADVISORY BOARD OR COMMITTEE AS EMPLOYEES]

- 1 Work directly for company/Employee/Volunteer
- 2 Vendor/Contractor [SKIP to C6B]

C6A Were you personally involved in the decision to install energy efficiency equipment through DCSEU?

- 1 Yes [Probe: What is your title?] [SKIP TO C6E]
- 2 No
- D Don't know
- R Refused

C6B [ASK IF C6A<>1] We would like to speak with the person who was most knowledgeable about the decision to install energy efficiency equipment through DCSEU. Is there someone else we should speak with?

- 1 Yes, person available [SKIP TO C2]
- 2 Yes, person not available
- 3 No [THANK AND TERMINATE]

C6C [ASK IF C6B=2] Who should we contact?

[PROBE: IF MORE THAN ONE DECISION MAKER, ASK R WHO WAS RESPONSIBLE FOR MAKING THE ULTIMATE DECISION]

[RECORD VERBATIM]

C6D [ASK IF C6B=2] And what is the best number to reach them at?

[RECORD VERBATIM]

Thank you. Those are all the questions I have. [TERMINATE]



C6E Who else within your company or outside your company was involved in the decision-making process of whether or not to participate?

[PROBE: IF MORE THAN ONE DECISION MAKER, ASK R WHO WAS RESPONSIBLE FOR MAKING THE ULTIMATE DECISION]
[DO NOT READ; SELECT ONE]

- 1 No one else
- 2 President/CEO
- 3 Board of Directors
- 4 Facilities Manager
- 5 Other senior leaders
- 6 Owner
- 7 Other [SPECIFY]
- D Don't know

C8 What barriers do you face, either inside or outside of your company, when deciding whether or not to purchase energy efficient equipment?
[DO NOT READ; INDICATE ALL THAT APPLY]

- 1 No barriers
- 2 Other priorities for capital spending
- 3 Lack of funds available for investment
- 4 Lack of financing
- 5 Amount of management time to oversee projects
- 6 Time required to install new equipment
- 7 Incremental cost for more efficient equipment higher than we expected
- 8 Rebate amounts are not high enough
- 9 Business hesitant to replace existing working equipment
- 10 Upper management doesn't see the benefit of energy efficient equipment
- 11 We lease the space
- 12 Contractors are not familiar with DCSEU energy efficiency offerings
- 13 Application process is demanding
- 14 Slow economy
- 15 Other [SPECIFY]
- D Don't know



Multifamily Questions

[ASK IF MF=1, ELSE SKIP TO P1]

MF1 Who makes the decision to install energy efficiency equipment in common areas and for central systems? [READ LIST; SELECT ALL THAT APPLY]

- 1 Owner
- 2 Property/leasing manager/associate
- 3 Senior property manager
- 4 Maintenance supervisor
- 5 Senior /regional maintenance supervisor
- 6 Purchasing manager
- 7 Other [SPECIFY]
- D Don't know
- R Refused

[Central Systems may include heating and cooling serving the entire building]

MF2 What is your position or job title related to this property?
[READ LIST, SELECT ONE]

- 1 Owner
- 2 Property/leasing manager/associate
- 3 Senior property manager
- 4 Maintenance supervisor
- 5 Senior /regional maintenance supervisor
- 6 Purchasing manager
- 7 Other [SPECIFY]
- D Don't know
- R Refused

MF3 [IF LOCSAME = 1, SKIP TO E1] How many buildings are there at this location?

- _____ ENTER RESPONSE
- 88 Don't know
- 99 Refused

MF4 How many apartment units are located in the building or buildings at the property?

- _____ ENTER RESPONSE
- 888 DON'T KNOW
- 999 REFUSED



MF6 Are the rental units at this property individually metered for electricity use, or is the property master metered?

- 1 Individually metered
- 2 Master metered
- D Don't know
- R Refused

MF7 Are the rental units at this property individually metered for natural gas use, or is the property master metered?

- 1 Individually metered
- 2 Master metered
- 3 No natural gas
- D Don't know
- R Refused

SOURCE OF INITIATIVE INFORMATION

IF MULTSKP = 1, SKIP TO E1

P1 How did you hear about the equipment, financial incentive, or technical assistance available through DCSEU?

DO NOT READ; SELECT ALL THAT APPLY]

- 1 DCSEU mailing
- 2 DCSEU web site
- 3 DCSEU staff
- 4 Conference/trade show
- 5 Media - Newspaper, radio, television
- 6 Contractor
- 7 Colleague
- 8 Email
- 9 Other [SPECIFY]
- 10 Don't know

P2 [IF P1<>6] Did the contractor or retailer where you purchased the

[LIST MEASURE TYPES]

equipment from mention that you could receive a rebate if you purchased energy efficient equipment?

- 1 Yes [SPECIFY: What did they discuss?]
- 2 No
- D Don't know



P3 [IF P2=1 or P1 = 6] Did you know about the rebate before it was mentioned to you by the contractor?

- 1 Yes
- 2 No
- D Don't know

P4 How would you prefer to receive information from DCSEU about their energy efficiency initiatives for businesses?

[DO NOT READ; SELECT ALL THAT APPLY]

- 1 DCSEU mailing
- 2 DCSEU web site
- 3 DCSEU staff
- 4 Conference/trade show
- 5 Media - Newspaper, radio, television
- 6 Independent contractor
- 7 Colleague
- 8 Email
- 9 Other [SPECIFY]
- 10 Don't know

EXPERIENCE WITH THE INITIATIVE

E1 Did you interact with anyone from DCSEU?
[SELECT ONE]

- 1 Yes
- 2 No
- D Don't know
- R Refused

[IF MULTFLAG=1 AND MULTSKP=1, SKIP TO E2K]

E1a Who was involved in completing your application?
[SELECT ALL THAT APPLY]

- 1 DCSEU staff
- 2 DCSEU call center staff
- 3 DCSEU account manager
- 4 Installation contractor or retailer
- 5 Myself/Respondent
- 6 Someone else at your company
- 7 Other [SPECIFY]
- 8 Don't know



E2_INTI am going to read a list to you. Please rate your level of satisfaction for each item using a scale of 0 to 10 where 0 is very dissatisfied and 10 is very satisfied.

How satisfied were you with...?

[READ AND ROTATE LIST; RECORD 0 TO 10 FOR EACH]

[PRESS 1 TO CONTINUE]

— [RECORD RESPONSE]

77 Not applicable

88 Don't know

99 Refused

E2A The type of eligible equipment

E2B The rebate amount or financial incentive

E2C The application process

E2D The preapproval process, if applicable

E2E The amount of time it took to receive the rebate or financial incentive

E2F [IF E1=2, SKIP] The interactions with DCSEU staff

E2G The assistance from the contractor who installed your equipment, if applicable

E2H The performance of the new equipment

E2I The information about DCSEU energy efficiency offerings

E2J Your experience overall

E2K The technical assistance you received from the DCSEU, if applicable

[IF MULTFLAG=1 AND MULTSKP=1, SKIP I1]

E3 [For each item in E2 rated ≤6] You gave a less than satisfied rating for [insert E2 item]. Why was that and what would you change?

[OPEN ENDED RESPONSES]

E4 [IF CIRX] How would you rate the functionality of the application spreadsheet on a scale of 0 to 10 where 0 is very difficult to use and 10 is very easy to use?

— [RECORD RESPONSE]

77 Not applicable – contractor completed

88 Don't know

99 Refused

E4a [IF E4≤6] What would you change about the application spreadsheet?

[OPEN ENDED RESPONSE]

E6_1 [If E2K=Not Applicable, SKIP E6] Please describe the value of the technical assistance provided as part of the DCSEU project.

[OPEN ENDED RESPONSES]



- C2. On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the information provided by the technical assistance have on your decision to implement the project?

___ [0 to 10]

D Don't know

R Refused

IF FRPATH=0 Skip to I1

- E6 Have you realized any energy savings since the installation of the energy efficient equipment?

1 Yes

2 No

D Don't know

- E6a How do you plan to use the cost savings realized as a result of installing the energy efficient equipment?

[Probe: If they say they haven't realized any savings, ask "How do you plan to when they are realized?"]

[OPEN ENDED RESPONSE]

- E7 Have you recommended the DCSEU to others?

1 Yes

2 No

D Don't know

VERIFICATION OF INSTALLATION

[REPEAT I SERIES FOR EACH <MEAS>]

- I1 [IF MULTSKP=1] I now just have to confirm the installation of the equipment for **this** project, as distinct from projects discussed previously.
Are all/Is the new <MEAS> equipment implemented on <DATE> currently installed and operating at [address]

[READ LIST]

1 Yes, all [SKIP TO I5]

2 Yes, some→ [SPECIFY - WHAT PERCENT IS INSTALLED]

3 No

4 No, some or all are installed elsewhere [SKIP TO I4C]

5 DO NOT CHOOSE OPTION or Same response [Show if MULTSKP=1] [SKIP TO NEXT MEAS/FR1]

D Don't know [SKIP TO NEXT MEASURE IF APPLICABLE]



I2 Was/Is the <MEAS> equipment that are/is not currently installed ever installed?

- 1 Yes [SKIP TO I4]
- 2 No
- D Don't know

I3 Do you plan on installing the <MEAS> equipment at [address]?

- 1 Yes [When do you plan to install it? ____ (month) ____ (year)]
- 2 No
- D Don't know

I4 Why aren't/isn't the <MEAS> equipment currently installed and operating?
[DO NOT READ; SELECT ALL THAT APPLY]

- 1 Equipment didn't work properly [Skip to next measure]
- 2 Equipment failed/broke
- 3 Unhappy with performance
- 4 Installed at other location
- 5 In storage to use for replacement
- 6 Some other reason [SPECIFY]
- D Don't know

I4b [IF I4 = 3] Why were you unhappy with the performance?

[OPEN ENDED RESPONSES]

I4c [IF I4 = 4 OR I1 = 4] Is this other location in the District of Columbia and served by DCSEU?

- 1 Yes
- 2 No

I5 [IF I2=2 or DIFLAG=1, SKIP] Of the <MEAS> equipment you installed, approximately how long after you purchased it did it take you to install?

- 1 Installed immediately
- 2 Installed within 2 weeks of the purchase
- 3 Installed within 4 weeks of the purchase
- 4 Installed more than 1 month after the purchase
- D Don't know

CW1 [ASK IF CW=1 and MF=1 and I2<>2] Now I'm going to ask you a few more questions about the clothes washers you installed.

[PRESS 1 TO CONTINUE]

CW1a [ASK IF CW=1] Are the clothes washers you installed in a common area or in tenant units?

- 1 Common area
- 2 Tenant unit(s) [SKIP TO NEXT FRMEAS]



D Don't know [SKIP TO NEXT FRMEAS]

CW2a How many loads of laundry are run through the new washers in a typical week?

____ Number of loads
888 Don't know
999 Refused

CW2b [ASK IF CW=1] How many loads of laundry are dried in the clothes dryers in a typical week?

____ Number of loads
888 Don't know
999 Refused

CW3 Did the clothes washers you purchased replace existing clothes washers?

1 Yes
2 No
D Don't know

CW4 [IF CW3 = 1] Were the clothes washers you replaced high efficiency models?

1 Yes
2 No
D Don't know

CW5 [IF CW4 = 1] How do you know that your old clothes washers were high efficiency?

[RECORD RESPONSE VERBATIM]

CW6 [IF CW3=1] What condition was your existing clothes washer in when you decided to purchase the new ones?

[READ LIST]

1 Running with no performance issues
2 Running but in need of repair
3 Broken – did not work
D Don't Know
R Refused

L1 [ASK IF Lighting=1 and MF=1 and I2<>2] Now I'm going to ask you a few more questions about the lighting you installed.

[PRESS 1 TO CONTINUE]

L2 Is the lighting installed in a common area or in tenant units?

1 Common area
2 Tenant unit(s) [SKIP TO NEXT MEASURE IF APPLICABLE]
3 Both
D Don't know [SKIP TO NEXT MEASURE IF APPLICABLE]



L3 Does the lighting operate on a schedule or occupancy sensors?

- 1 Schedule
- 2 Occupancy sensors [SKIP TO next measure if applicable]
- D Don't know [SKIP TO next measure if applicable]

L4 How many hours per week does the lighting installed operate?

[MAXIMUM NUMBER OF HOURS PER WEEK IS 168]

- _____ Hours per week
- 888 Don't know
- 999 Refused

Full Free-Ridership Battery

[ASK IF FRPATH=1; IF FRPATH=0 Skip to LFR1]

[IF DECISION = 1 AND LOCSAME=0, SKIP TO S0A]

[IF DECISION=1 AND LOCSAME=1, SKIP TO END]

FR1-C9c will be asked of one sampled measure category <FRMEAS>.

FRint Now, I'd like to ask you about your decision to implement the < FRMEAS> project implemented on <DATE>.

FR1 On a scale of 0 to 10, with 0 being not at all likely and 10 being very likely, how likely is it that your business would have implemented the same [IF FRQTY > 1: quantity] [IF FREFF=1: and efficiency of] [IF FRFRQTY>1 & FREFF=1: quantity and efficiency of] <FRMEAS> at that same time if DCSEU had not provided the "[7510BLTZ/7610BLTZ=equipment you received] or [rest=financial incentive you received]?

- _____ [0 TO 10]
- D Don't know
- R Refused

FR2 [IF E1=no, skip to FR3a] Did your company have any funds allocated to implement the <FRMEAS> project before you talked with DCSEU staff?

- 1 Yes
- 2 No [SKIP TO FR4]
- D Don't know [SKIP TO FR4]
- R Refused [SKIP TO FR4]



FR3a Did you need to change the timing of the implementation, [IF FRFRQTY > 1: the quantity of equipment] [IF FREFF = 1: or the efficiency level] [IF FRFRQTY>1 & FREFF=1: the quantity, or the efficiency level] of the <FRMEAS> project in order to qualify for the [7510BLTZ/7610BLTZ=equipment you received] [rest=financial incentive you received] from DCSEU?

- 1 Yes
- 2 No [SKIP TO FR4]
- D Don't know [SKIP TO FR4]
- R Refused [SKIP TO FR4]

FR3b What changes were necessary? [DO NOT READ; SELECT ALL THAT APPLY]

- 1 Installation occurred SOONER than planned
- 2 Installation occurred LATER than planned
- 3 Installed MORE equipment than planned
- 4 Installed LESS equipment than planned
- 5 Equipment was MORE efficient than planned
- 6 Equipment was LESS efficient than planned
- 7 Removed MORE equipment than planned
- 8 Removed LESS equipment than planned
- 9 Other [SPECIFY]
- D Don't know
- R Refused



FR4 Who was MOST responsible for actually recommending or specifying the [IF FREFF=1: high efficiency] <FRMEAS> project?

[PROBE: IF MORE THAN ONE DECISION MAKER, ASK R WHO WAS RESPONSIBLE FOR MAKING THE ULTIMATE DECISION]
[DO NOT READ LIST; SELECT ONE]

- 1 Respondent
- 2 Someone else in company
- 3 Third-party design professional
- 4 Third-party engineer
- 5 Contractor/Vendor
- 6 Manufacturer's representative
- 7 DCSEU Staff
- 8 Someone else outside company [SPECIFY]
- 9 Utility account manager
- D Don't know
- R Refused

C1 [IF FR4=3, 4, 5, 6, 7 or 9]
On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the (FR4 RESPONSE) have on your company's decision to implement the [IF EFFICIENCY IS APPLICABLE (IF FREFF=1): high efficiency] <FRMEAS> project so that it would qualify for DCSEU assistance?

- _____ [0 TO 10]
D Don't know
R Refused



FR5i I'd like to go over all the assistance you received from DCSEU. According to our records:
 (IF 7510BLTZ, 7110SHOT) the DCSEU covered the entire cost of the [IF FREFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FRMEAS > project.
 (IF 7510MTV, 7520CUST, 7520MARO AND E2K>10) the DCSEU financial incentive covered a portion of the cost of the [IF FREFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FRMEAS > project.
 (IF 7510MTV, 7520CUST, 7520MARO AND E2K<=10) the DCSEU incentive provided technical assistance and covered a portion of the cost of the [IF EFFICIENCY IS APPLICABLE; IF FREFF=1: energy efficient] <FRMEAS >.

[PRESS 1 TO CONTINUE]

FR5 If DCSEU [if BLTZ =had not covered the entire cost] [rest=had not provided the financial incentive] would your business have implemented any type of <FRMEAS > project at the same time?

- 1 Yes [SKIP TO FR7a]
- 2 No
- D Don't know
- R Refused

FR6a Would you have implemented the <FRMEAS> project earlier than you did, at a later date, or never?

- 1 Earlier
- 2 Same time [SKIP TO FR7a]
- 3 Later
- 4 Never [SKIP TO C3]
- D Don't know [SKIP TO C3]
- R Refused [SKIP TO C3]

FR6bY & FR6bM How much [earlier/later] would you have implemented the <FRMEAS> project?

- ___ YEARS
- ___ MONTHS
- D Don't know [SKIP TO C3]
- R Refused [SKIP TO C3]



[IF FRQTY = 1, SKIP TO FR8d]

FR7a [IF BLTZ ="Without DCSEU covering the entire cost of the project] [others="Without the financial incentive] would your business have implemented the exact same quantity of <FRMEAS> equipment

IF FR5=1 OR FR6a=2: at that same time?

IF FR5<>1 AND(FR6A=3 or FR6A=1): within (TIMEFRAME IN FR6b)] of when you implemented it through the initiative?

- 1 Yes [SKIP TO FR8]
- 2 No
- D Don't know [SKIP TO C3]
- R Refused [SKIP TO C3]

FR7b Compared to the amount of <FRMEAS> equipment that you implemented, what percentage of the project do you think your business would have purchased on its own during that time frame?

[PROBE: Would you have purchased about one-fourth (25%), one-half (50%), three-fourths (75%) of what you installed?]

- _____ [ENTER PERCENTAGE: 0-99%]
- D Don't know
- R Refused



FR8 You said your business would have installed [IF FR7A=YES: all; IF FR7A= NO: (FILL WITH FR7B %); IF (FR7B=DK/RF), fill with "some"] of the equipment on its own if the [if BLTZ =DCSEU covering the entire cost of the project] [others=" financial incentive] had not been available. Thinking about the <FRMEAS> equipment that you would have installed on your own, what percent of this equipment would have been of the same high efficiency as was installed through the DCSEU, a lower efficiency than what was purchased but higher than standard efficiency or code, or would it have been standard efficiency or code? Allocate the percentage across the three options so they total 100%.

[PROBE: Would about one-fourth (25%), one-half (50%), three-fourths (75%) been of equal efficiency?]

a. of the same high efficiency as was installed through the DCSEU initiative?

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

b. lower efficiency than what was purchased but higher than standard efficiency or code?

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

c. standard efficiency or code

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

(CHECK THAT THE THREE % SUM TO 100%; PROBE TO CLARIFY)

FR8CHK I'm sorry; your answers to the previous three questions did not add up to 100 percent. I'd like to go back and verify your answers so that they add up to 100 percent. Your best estimate is fine.

[PRESS 1 TO CONTINUE]

[IF FRQTY > 1, SKIP TO C3]

FR8d. [IF FRQTY = 1] Thinking about the <FRMEAS> project you would have implemented on your own if the DCSEU [if BLTZ = covering the entire cost of the project] [others=financial incentives] had not been available, would it have been of the same high efficiency as what was installed through the initiative, lower efficiency than what was purchased but higher than standard efficiency, or standard efficiency or code?

1 Of the same high efficiency as what was installed through the initiative?

2 Lower efficiency than what was purchased but higher than standard efficiency

3 Standard efficiency or code

D Don't know

R Refuse



- C3. On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the [IF BLTZ =DCSEU covering the entire cost of the project] [others=financial incentive] have on your decision to implement the high efficiency <FRMEAS> project?

_____ (ENTER INFLUENCE RANKING)

77 Not applicable

88 Don't know

99 Refused

Consistency Check Prompts

100% Free Ridership Consistency Check

[IF WOULD HAVE PURCHASED AT THE SAME TIME, IN THE SAME QUANTITY, AND OF THE SAME EFFICIENCY LEVEL; IF FR5=1 AND FR7a=1 AND (FR8a=100% or FR8d=1), ASK C4a-C7c, ELSE SKIP TO C8b]

- C4a. Now I want to focus on what it would have cost your business to install this equipment on its own. On a scale of 0 to 10, with 0 being not at all likely and 10 being very likely, how likely is it that your business would have paid
(IF 7510BLTZT) the entire cost of the project
(IF 7510MTV, 7520CUST, 7520MARO) the DCSEU contribution on top of the amount you already paid
to implement the same quantity and efficiency of <FRMEAS> at that same time?

_____ [0 TO 10]

D Don't know

R Refused

- C4b. [ASK IF C4a < 8] You said that you would have installed the same quantity and efficiency of equipment at that same time, but you also just said that there was a (FILL WITH C4a SCORE) in 10 likelihood of you paying the incentive provided by the DCSEU initiative. Which of these is more accurate?
[READ LIST]

1 Installed same quantity & efficiency at same time without an incentive

[SKIP TO C9A]

2 Likelihood of installing this without the initiative assistance was (C4a SCORE)

3 Something else [SPECIFY]



C5. How would your project have changed if DCSEU had not contributed to the cost of the <FRMEAS>?
[INDICATE ALL THAT APPLY; DO NOT READ]

- 1 Would not have changed [SKIP TO C8B]
- 2 Would have postponed the project (SPECIFY NUMBER OF MONTHS)
- 3 Would have cancelled the project altogether
- 4 Would have repaired existing equipment
- 5 Kept using existing equipment
- 6 Purchased less efficient equipment (ASK C7a)
- 7 Purchased fewer quantity (ASK C6)
- 8 Installed DIFFERENT type of equipment than planned [SPECIFY]
- 9 Other [SPECIFY]
- D Don't know
- R Refused

C6. [IF C5=PURCHASED FEWER QUANTITY (IF C5=7)] Compared to the amount of <FRMEAS> that you implemented through your project with the DCSEU, what percent do you think your business would have purchased on its own at that same time?

[PROBE: Would you have purchased about one- fourth (25%), one-half (50%), three fourths (75%) of what you installed?]

_____ [ENTER PERCENTAGE: 0-99%]

888 Don't know

999 Refused

C7. [IF C5=PURCHASED LESS EFFICIENT EQUIPMENT (IF C5=6)] Thinking about the equipment you would have implemented on your own, what percent of this equipment would have been . . . ?

[PROBE: Would about one-fourth (25%), one-half (50%), three fourths (75%) been of equal efficiency?]

a. of the same high efficiency as what was installed?

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

b. of lower efficiency than what was purchased but higher than standard efficiency or code?

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

c. of standard efficiency or code

_____ (ENTER PERCENTAGE: 0-100%)

88 Don't know

(CHECK THAT THE THREE % SUM TO 100%; PROBE TO CLARIFY)

C7CHK I'm sorry, your answers to the previous three questions did not add up



to 100 percent. I'd like to go back and verify your answers
so that they add up to 100 percent.
Your best estimate is fine.

[PRESS 1 TO CONTINUE]

0% Free Ridership Consistency Check

C8B (IF AT LEAST SOMEWHAT LIKELY TO HAVE INSTALLED THE MEASURE
WITHOUT THE INITIATIVE BUT LATER STATES WOULD HAVE WAITED AT
LEAST FOUR YEARS (FR1 > 3 AND FR6b > 48 MONTHS OR FR6a=4) and
FR5<>1)

Earlier in the interview, you said there was a (FR1 SCORE) in 10 likelihood that you
would have implemented the same quantity and efficiency of <FRMEAS> equipment
at that same time in the absence of [if BLTZ = the DCSEU covering the entire cost of
the project] [others= the financial incentive]. But you also said you would [IF FR6a=4:
“never have implemented the <FRMEAS> project.”] [IF FR6bY>=4: “not have
implemented the <FRMEAS> project within 4 years of when you did.”]. Which of these
is more accurate?

- 1 Likelihood of installing this without [if BLTZ/SHOT= the DCSEU covering the
entire cost of the project] [others= the financial incentive] was (FR1 SCORE)
- 2 Would [if FR6a=4: “never have installed anything”] [IF FR6bY>=4: “not have
installed anything within 4 years”].
- 3 Something else [SPECIFY]
- D Don't know
- R Refused

Additional Consistency Check

C9A. (IF 100% FREE-RIDER; IF FR5=1 AND FR7a=1 AND (FR8a=100% or FR8d = 1)
AND (C3 > 6) and (C4a >7 or C4b <> 2 or C4b<>3).

Previously you stated that you would have installed the exact same equipment at the
same time. But, you also stated that the ...

(IF C3 > 6 FILL: [IF BLTZ =DCSEU covering the entire cost of the project]
[others=financial incentive])

... was influential in your decision.)

[PRESS 1 TO CONTINUE]



- C9B. (IF 0% FREE-RIDER: IF FR6a = NEVER OR DK AND C3 < 5)
 Previously you stated that you would not have installed any equipment. You also
 stated that the ...
 [IF C3 < 5 FILL: [if BLTZ =DCSEU covering the entire cost of the project]
 [others=financial incentive])
 ... was not influential in your decision.

[PRESS 1 TO CONTINUE]

- C9C. [ASK OF ALL] I'd like to better understand your purchase decision. In your own words,
 please describe what impact, if any, did the equipment, financial incentive, or technical
 assistance you received have on your decision to install the amount of energy efficient
 <FRMEAS> equipment at the time you did?

[RECORD VERBATIM RESPONSE]

Previous Experience

**[IF NEVER WOULD HAVE INSTALLED AND UNLIKELY TO HAVE PURCHASED
 WITHOUT PROGRAM (IF FR6A = NEVER AND FR1 < 4) SKIP TO LFR1]**

- PP1. Had your business worked with DCSEU to implement energy efficient improvements
 before you implemented the energy efficient project on <DATE>?

- 1 Yes
 2 No [SKIP TO LFR1]
 D Don't know [SKIP TO LFR1]

- PP2. On a scale of 0 to 10, with 0 being 'not at all important and 10 being 'very important',
 how important was your previous experience implementing projects through the
 DCSEU when making the decision to implement the <FRMEAS> project at this facility
 around <DATE>?

- ___ [0 – 10]
 88 Don't know



PP3. I'm going to read you several statements. For each statement, please tell me whether you agree or disagree that this statement applies to your business. There are no right or wrong answers; we just want your honest opinion.

[REPEAT IF NECESSARY]

- 1 Agree
- 2 Disagree
- D Don't know
- R Refused

Our previous experience implementing energy efficient projects through the DCSEU . . .

- a. Has made our firm more likely to consider energy efficient equipment
- b. Has made our firm more likely to install energy efficient equipment
- c. Has given us more confidence in the financial benefits of energy efficient equipment
- d. Has given us more confidence in the nonfinancial benefits of energy efficient equipment

Limited Free-Ridership

[IF FRPATH=1 Skip to S0a]

[IF DECISION = 1 AND LOCSAME=0, SKIP TO S0A]

[IF DECISION=1 AND LOCSAME=1, SKIP TO END]

LFR1-LFR4 will be asked of one sampled measure category <FRMEAS>.

LFR1 Now, I'd like to ask you about your decision to implement the < FRMEAS> project implemented on <DATE>. Which of the following most likely would have happened [IF LI BLTZ/SHOT=the DCSEU did NOT cover the entire cost of the project] [others=you had NOT received the financial incentive from DCSEU]? Would you have...[READ LIST]

- 1 [IF DIRINST = 1] Done nothing (not installed any equipment)
 - [IF DIRINST <> 1] Cancelled or postponed implementation of the [FRMEAS] longer than one year
- 2 Reduced project size, scope or efficiency level of the [FRMEAS] project
- 3 [IF DIRINST = 1] Purchased the exact same equipment through DCSEU that you received
 - [IF DIRINST <> 1] Implemented the same project within one year, regardless of the incentive you received



LFR2 [ASK IF LFR1 = 2] Would you have reduced the size, scope or efficiency of the project a small amount, a moderate amount, or a large amount?

- 1 A small amount
- 2 A moderate amount
- 3 A large amount
- D Don't know

LFR3 [ASK IF LFR1 = 3]

[IF DIRINST <> 1] Would you have paid the entire cost of the project in the absence of the financial incentive you received from DCSEU?

[IF DIRINST = 1] Would you have paid to implement the same project even if you had to pay the full cost of the equipment, without **any** financial incentive?

- 1 Yes
- 2 No
- D Don't know

LFR4a [IF (LFR1 = 2 or LFR1 = 3) and (LFR2<> "D" and LFR3<> "D")] We would like to understand more about how the initiative impacted your decision to implement the project. In your own words, could you talk a bit about what the project would have looked like in the absence of the DCSEU funding. For example the timing, scope, efficiency level or size of the project you would have otherwise done?]

[RECORD VERBATIM RESPONSE]

LFR4 On a scale of 1-5, where 1 is 'not at all influential' and 5 is 'extremely influential,' please tell me how influential each of the following aspects were in your decision to implement the [FRMEAS] project. How influential was...

[NOTE: Include "Not applicable" option]

- A [IF DIFLAG<>1] The incentive or rebate offered by DCSEU. [IF DIFLAG=1] The equipment received through the DCSEU.
- C [IF E2K>10, SKIP] The technical assistance received from DCSEU staff.
- E The recommendation from the installation contractor you worked with
- G Previous experience implementing projects through DCSEU

Like Spillover

S0A [IF MULTSKP = 1] INTERVIEWER: Is the measure for this case the same as the measure for the last case?

- 1 Yes [SKIP TO S5]
- 2 No [CONTINUE TO S1A]



S1a Now I'd like you to think of the time since you implemented the DCSEU project.

Has your company implemented any <FRMEAS> projects for this or other facilities in DC **on your own**, that is, without assistance from DCSEU?

- 1 Yes
- 2 No [SKIP TO NEXT SECTION]
- D Don't know [SKIP TO NEXT SECTION]

[IF FREFF = 0, SKIP TO S2a]

S1b Was this equipment of **the same or higher level of efficiency** as the equipment you installed?

- 1 Yes [SKIP TO S2a]
- 2 No
- D Don't know

S1c Was this equipment more energy efficient than standard efficiency or code?

- 1 Yes
- 2 No [SKIP TO S4a]
- D Don't know [SKIP TO S4a]

S2a Thinking of the equipment that you installed on your own, was this more, less or the same amount of <FRMEAS> that you installed through the DCSEU?

- 1 More [SKIP TO S2aM]
- 2 Less [SKIP TO S2aL]
- 3 Same [SKIP TO S3a]
- D Don't know [SKIP TO S3a]

S2aM [If S2a = 1] Compared to the amount of <FRMEAS> equipment that you installed through the DCSEU at <ADDR>, how much equipment did you install on your own?

We're looking for a percent compared to the amount installed through the DCSEU. For example, if it was about twice as much as what you installed you would say 200%.
[ENTER WHOLE NUMBER]

_____ [Enter percentage: 101-1000%]
8888 Don't know



S2aL [If S2a = 2] Compared to the amount of <FRMEAS> equipment that you installed through the DCSEU at <ADDR>, how much equipment did you install on your own?

We're looking for a percent compared to the amount installed through the DCSEU. For example, if it was about half as much as what you installed you would say 50%. [ENTER WHOLE NUMBER]

____ [Enter percentage: 1-99%]
888 Don't know

S2b So the additional energy efficient equipment you bought on your own was [S2am or S2al] percent of what you received through the DCSEU?

1 Yes
2 No [SKIP TO S2a AND CORRECT]

S3a Did a recommendation by the contractor, engineer, or designer who you worked with under the DCSEU project influence your decision to implement some or all of this [IF FREFF=1: efficient] <FRMEAS> equipment on your own?

1 Yes
2 No
D Don't know
R Refused

S3b Did your experience with the energy efficient projects implemented under the DCSEU project influence your decision to implement some or all of this [IF FREFF=1: efficient] <FRMEAS> equipment on your own?

1 Yes
2 No
D Don't know
R Refused

S3c Did your participation in any past project with DCSEU influence your decision to implement some or all of this [IF FREFF=1: efficient] <FRMEAS> equipment on your own?

1 Yes
2 No
D Don't know
R Refused

S3d On a scale of 0 to 10, where 0 is "no influence at all" and 10 is "a great deal of influence", how much influence did your participation in the DCSEU project have on your decision to install this equipment without DCSEU assistance?
Again, this is on a scale of 0 to 10.

____ [0 TO 10]
88 Don't know



S4a Why didn't you implement the <FRMEAS> project with DCSEU assistance?
[DO NOT READ; SELECT ALL THAT APPLY]

- 1 Too much paperwork
- 2 Cost savings not worth the effort of applying
- 3 Takes too long for approval
- 4 The equipment would not qualify
- 5 Vendor does not participate in initiative
- 6 Outside your utility's territory
- 7 No time - needed equipment immediately
- 8 Thought the initiative ended
- 9 Didn't know the equipment qualified under another initiative
- 10 Just didn't think of it
- 11 Unable to get rebate--unsure why
- 12 Other [SPECIFY]
- D Don't know

S4b [IF S4a = THE EQUIPMENT WOULD NOT QUALIFY (IF S4a = 4)] Why wouldn't the equipment qualify?

[RECORD VERBATIM RESPONSE]

Unlike Spillover

IF MULTSKP = 1, SKIP TO OH1

S5 Since you implemented the DCSEU project, has your company purchased, installed, or implemented any other type of energy efficiency equipment **on your own**, that is without DCSEU assistance?

- 1 Yes
- 2 No [SKIP TO NEXT SECTION]
- D Don't know [SKIP TO NEXT SECTION]

S6a What equipment did you install?

[RECORD VERBATIM RESPONSE]

S6b What amount or quantity did you install?

[RECORD VERBATIM RESPONSE]

S6c What was the size or capacity of the equipment you installed?

[IF NEEDED, PROBE: What type of equipment did you install?]

[RECORD VERBATIM RESPONSE]



S7a Would this project have qualified for DCSEU assistance?

- 1 Yes
- 2 Yes, implemented through DCSEU [SKIP TO NEXT SECTION]
- 3 No [SKIP TO NEXT SECTION]
- D Don't know

S7b Did a recommendation by the contractor, engineer, or designer who you worked with under the DCSEU project influence your decision to implement some of this equipment on your own?

- 1 Yes
- 2 No
- D Don't know
- R Refused

S7c Did your experience with the energy efficient projects implemented through the DCSEU influence your decision to implement some of this equipment on your own?

- 1 Yes
- 2 No
- D Don't know
- R Refused

S7d Did your participation in any past initiative offered by DCSEU influence your decision to implement some or all of this equipment on your own?

- 1 Yes
- 2 No
- 3 Did not participate in any past initiative
- D Don't know
- R Refused

S7e On a scale of 0 to 10, where 0 is "no influence at all" and 10 is "a great deal of influence", how much influence did [IF DIRINST <>1: the DCSEU assistance] [IF DIRINST=1: the installation of energy efficient equipment] have on your decision to install this equipment without an incentive?

- ___ [0 TO 10]
- 88 Don't know



S8a Why didn't you implement this project through DCSEU?
[DO NOT READ; SELECT ALL THAT APPLY]

- 1 Too much paperwork
- 2 Cost savings not worth the effort of applying
- 3 Takes too long for approval
- 4 The equipment would not qualify
- 5 Vendor does not participate in initiative
- 6 Outside [UTILITY]'s service territory
- 7 No time - needed equipment immediately
- 8 Thought the initiative ended
- 9 Didn't know the equipment qualified under another initiative
- 10 Just didn't think of it
- 11 Unable to get rebate--unsure why
- 12 Other [SPECIFY]
- D Don't know

S8b [IF S8a = EQUIPMENT WOULD NOT QUALIFY (IF S8a = 4)] Why wouldn't the project qualify?

[RECORD VERBATIM RESPONSE]

OPERATING HOURS

IF LOCSAME = 1, SKIP TO END

OH1 [IF MF=1, SKIP TO NEXT SECTION] Next I'd like to talk about the hours that your business is open.

Is the facility at this location open 24 hours per day, 7 days per week?

- 1 Yes [SKIP TO OH3]
- 2 No
- D Don't know [SKIP TO OH3]
- R Refused [SKIP TO OH3]

OH2 [ASK IF OH1=2] How many hours per week does your facility operate?

[MAXIMUM NUMBER OF HOURS PER WEEK IS 168]

- ____ Hours per week
- 888 Don't know
- 999 Refused



OH3 Do you operate your facility differently depending on the season or production cycle?

- | | | |
|---|------------|--------------|
| 1 | Yes | |
| 2 | No | [SKIP TO F1] |
| D | Don't know | [SKIP TO F1] |
| R | Refused | [SKIP TO F1] |

OH4a [ASK IF OH3 = 1] How many hours per week is your business open during the summer, that is, June to September?

[MAXIMUM NUMBER OF HOURS PER WEEK IS 168]

____ Hours per week
 888 Don't know
 999 Refused

OH4b [ASK IF OH3 = 1] How many hours per week is your business open during the winter, that is, December to February?

[MAXIMUM NUMBER OF HOURS PER WEEK IS 168]

____ Hours per week
 888 Don't know
 999 Refused

CUSTOMER CHARACTERISTICS

Last, I'd like to ask you a few more questions regarding your facility.

F1 What is the main business activity performed at this facility? [IF MORE THAN ONE, PROBE FOR PRIMARY ONE]

- | | |
|----|--|
| 1 | Office/professional |
| 1 | Administrative or professional office building (e.g., insurance, law, telephone company, college administration) |
| 2 | Government office |
| 3 | Mixed use office |
| 4 | Bank or financial institution |
| 5 | Sales office (vehicles, real estate) |
| 6 | Contractor's office (construction, plumbing, HVAC) |
| 7 | Non-profit or social service office |
| 8 | Research and development office |
| 9 | Religious office |
| 10 | Call center |
| 11 | Other [SPECIFY] |



- D Don't know
- 2 Warehouse or distribution center
 - 1 Non-refrigerated warehouse
 - 2 Refrigerated warehouse
 - 3 Distribution of shipping center
 - 4 Self storage center
 - 5 Other [SPECIFY]
 - D Don't know
- 3 Food sales
 - 1 Grocery store or food market
 - 2 Gas station with a convenience store
 - 3 Convenience store
 - 4 Other [SPECIFY]
 - D Don't know
- 4 Food service
 - 1 Fast food
 - 2 Bar
 - 3 Reception hall
 - 4 Catering service
 - 5 Other [SPECIFY]
 - D Don't know
- 5 Retail (Other than mall)
 - 1 Store (department, furniture, clothing, hardware, drugstore, bookstore, building supplies, home improvement, gifts, pawn shop, wholesale club, etc.)
 - 2 Beer, wine or liquor store
 - 3 Rental center
 - 4 Dealership or showroom for vehicles and boats
 - 5 Studio or gallery
 - 6 Other [SPECIFY]
 - D Don't know
- 6 Mercantile (enclosed and strip malls)
 - 1 Enclosed mall
 - 2 Strip shopping center
 - 3 Other [SPECIFY]
 - D Don't know



- 7 Education→ How many students can be seated in all of the classrooms in this building at one time? ____
- 1 Elementary or middle school
 - 2 High school
 - 3 College or university
 - 4 Preschool or daycare
 - 5 Adult education
 - 6 Career or vocational training
 - 7 Religious education
 - 8 Other [SPECIFY]
 - D Don't know
- 8 Religious worship→ What is the total seating capacity of the religious worship areas in this building? ____
- 9 Public assembly→ What is the fixed seating capacity of the public assembly areas in this building? ____
- 1 Social or meeting such as community center, lodge, meeting hall, convention center or senior center
 - 2 Recreation such as gym, health club, bowling alley, ice rink, field house or indoor racquet sports
 - 3 Entertainment or cultures such as museum, theater, cinema, sports arena, casino or night club
 - 4 Library
 - 5 Funeral home
 - 6 Student activities center
 - 7 Armory
 - 8 Exhibition hall
 - 9 Broadcasting studio
 - 10 Transportation terminal
 - 11 Other [SPECIFY]
 - D Don't know
- 10 Health care (inpatient)
- 1 Inpatient hospital-> What is the inpatient licensed bed capacity? ____
 - 2 Inpatient rehabilitation center→ What is the inpatient licensed bed capacity? ____



- 11 Health care (Outpatient)
 - 1 Medical office that uses diagnostic equipment (else is office building)
 - 2 Clinic or other outpatient health care building
 - 3 Outpatient rehabilitation center
 - 4 Veterinarian's office
 - 5 Laboratory
 - 6 Other [SPECIFY]
 - D Don't know
- 12 Service
 - 1 Vehicle storage and/or maintenance (car barn)
 - 2 Repair shop
 - 3 Dry cleaner or Laundromat
 - 4 Post office or postal center
 - 5 Car Wash
 - 6 Gas station (without a convenience store)
 - 7 Photo processing shop
 - 8 Beauty or barber shop
 - 9 Tanning salon
 - 10 Copy center or printing ship
 - 11 Kennel
 - 12 Indoor parking garage
 - 13 Other [SPECIFY]
 - 14 Auto service or auto repair shop
 - 15 Don't know
- 13 Lodging→ How many guest rooms or occupant rooms are there? _____
 - 1 Motel or inn
 - 2 Hotel
 - 3 Dormitory, fraternity, or sorority
 - 4 Convent or monastery
 - 5 Shelter, orphanage
 - 6 Halfway house
 - 7 Retirement home→ How many occupant rooms are there? _____
 - 8 Nursing home, assisted living center, or other residential care building→ What is the skilled or residential care licensed bed capacity in this building?
 - 9 Other [SPECIFY]
 - 10 Housing - multifamily, etc.
 - 11 Don't know



- 14 Public order and safety
 - 1 Police station
 - 2 Fire station
 - 3 Combination police and fire station
 - 4 Jail, reformatory, or penitentiary
 - 5 Courthouse or probation office
 - 6 Other [SPECIFY]
 - D Don't know
- 15 Industrial/Manufacturing [SPECIFY]
- 16 Agricultural [SPECIFY]
- 17 Vacant (Building in which more floor space is vacant than is used for any single commercial activity) → What percent of the floor space is completely vacant? ____%
- 18 Other [SPECIFY IN DETAIL]



F3 Approximately how many employees does <BUSINESS NAME> employ at this location? [DO NOT READ]

[PROBE: INCLUDE ALL PERSONS, PAID OR UNPAID, YOU CONSIDER AN EMPLOYEE OF YOUR COMPANY]

- 1 One
- 2 2 to 5
- 3 6 to 10
- 4 11 to 20
- 5 21 to 50
- 6 51 to 100
- 7 101 to 250
- 8 251 to 500
- 9 501 to 1000
- 10 1001 to 3000
- 11 More than 3000
- D Don't know

F4 What is the main fuel used for heating this location? Is it electricity, natural gas, bottled or propane gas, fuel oil, wood, or something else?

- 1 Electricity
- 2 Natural gas
- 3 Bottled gas (propane)
- 4 Fuel oil
- 5 Wood
- 6 Other [SPECIFY]
- 7 Gas – unsure of type
- D DON'T KNOW
- R REFUSED

F4a [IF F4=7] Natural gas is typically delivered through pipes by your utility, propane or bottled gas may be coming from a large storage tank on or near your property.

- 1 Natural gas
- 2 Bottled gas (propane)
- 3 Still unsure of type



F5 What is the main fuel used for heating water at this location? Is it electricity, natural gas, bottled or propane gas, fuel oil, wood, or something else?

- 1 Electricity
- 2 Natural gas
- 3 Bottled gas (propane)
- 4 Fuel oil
- 5 Wood
- 6 Other [SPECIFY]
- 7 Gas – unsure of type
- D DON'T KNOW
- R REFUSED

F5a [IF F5=7] Natural gas is typically delivered through pipes by your utility, propane or bottled gas may be coming from a large storage tank on or near your property.

- 1 Natural gas
- 2 Bottled gas (propane)
- 3 Still unsure of type

F8 Approximately when was the building at this location constructed?
Please stop me when I've reached the appropriate category.

- 1 Before 1960
- 2 1960-69
- 3 1970-79
- 4 1980-89
- 5 1990-99
- 6 2000-04
- 7 2005-07
- 8 2008 or later
- D Don't know

F8b [IF F8<2008] Has a new construction or renovation been completed for this building within the last 5 years?

- 1 Yes [SPECIFY]
- 2 No
- D Don't know



F9 What is the approximate total floor area occupied by <BUSINESS NAME> in the building at this location in square feet?

[ONLY READ IF R SAYS "DK"; IF R STILL SAYS "DK", SELECT "DK"]

- 1 Less than 1,000 square feet
- 2 1,000 to less than 2,000 square feet
- 3 2,000 to less than 3,000 square feet
- 4 3,000 to less than 5,000 square feet
- 5 5,000 to less than 10,000 square feet
- 6 10,000 to less than 15,000 square feet
- 7 15,000 to less than 25,000 square feet
- 8 25,000 to less than 50,000 square feet
- 9 50,000 to less than 100,000 square feet
- 10 More than 100,000 square feet
- D Don't know

F10 Does <BUSINESS NAME> own or lease this facility?

- 1 Own
- 2 Lease
- 3 Manage
- D Don't know

END That's all the questions I have. I'd like to thank you for your help with this survey. Do you have any comments you'd like to share?

- 1 Yes [RECORD COMMENTS]
- 2 No



APPENDIX J: LICP AND ICDI ONSITE DATE COLLECTION FORMS

J.1 GENERAL PROPERTY INFORMATION

Overall project data - property characteristics							
Track							
ProjectID							
Title							
Address							
Summary							
Evaluator:					Blue fields should be collected on-site		
Date/Time:							
Facility Manager:							
Title:							
Signature:							
					Ask property manager for # of units		
Buildings part of project							
Total # units			Unit notes				
Units served by project							
% or # income qualified							
Conditioned sq. ft.			Square footage				
Common area sq. ft.			notes				

Common Area Measures



J.3 IN-UNIT MEASURES

In-unit Measures							
To be completed for each unit visited							
# of Occupants:							
Unit square footage:							
Is In-Unit Area Air Conditioned? (circle one):		Yes	No	Note if only portions and % are A/C'd:			
Heating type (circle one):	Gas	Electric	Heat Pump	Unknown*	Note: please take picture of unit efficiency if possible (label, model #, serial #, or what's available)		
* Select Unknown if multiple heating sources provided and % of each is unknown							
DHW type (circle one):	Gas	Electric	Temperature:		Make:		Model:
DHW Tank Size (circle or enter size):	40 Gallon		Gallons:		Note: please take picture of unit efficiency & size if possible (label, make, model #, serial #, etc)		
Direct Install							
Measure	Units	Tracked	Verified	Location	Comments	Common Area Verified	Fuel Type Verified
CFLs		0	0				
40 watt equivalent CFL							
40 watt equivalent GLOBE CFL							
60 watt equivalent CFL	# of standard CFLs						
75 watt equivalent CFL							
100 watt equivalent CFL							
75 watt equivalent R30 DIMMABLE CFL							
50/100/150 watt equivalent CFL 3-WAY							
60 watt equivalent OUTDOOR CFL	# of specialty CFLs						
9-11 watt Candelabra/Torpedo CFL							
5-7 watt Candelabra/Torpedo CFL							
5 watt torpedo CCFL							
Candelabra to Med. base Adapters	# of adapters						
Socket Extenders	# of extenders						
Hot water tank wraps	# of tanks						
Pipe Insulation 1/2-inch	3' section						
Pipe Insulation 3/4-inch	3' section						
1.5 gpm Showerhead	# of showerheads						
1.5 gpm Kitchen Faucet Aerators	# of aerators						
1.0 gpm Bathroom Faucet Aerators	# of aerators						
Large Equipment							
Refrigerator	Detail/type	Tracked	Verified	Location	Comments		
Clothes Washers							
Dishwasher							
Refrigerators							
Heat Pumps							
CFL Fixture, Interior							
CFL Fixture, Exterior							
Metal Halide fixtures							
Fluorescent fixtures							
Setback thermostat							
Air sealing							
Insulation							
Windows							
Exhaust Fans							
Other Measures							
		Tracked	Verified	Location	Comments	N/A	Yes
For all make and model fields, if not visible/available, at least document ENERGY STAR rating and/or include photo of nameplate							
	Make:		Model:				
	Make:		Model:				
	Make:		Model:				
	Make:		Model:				
	Make:		Model:				



APPENDIX K: RETAIL CFL POSTCARD



The District Department of the Environment is sponsoring a study about lighting products sold in the District. The first 50 customers to fill out and return this postcard will receive a \$10 gift card to «Store Name».*

DCSEU

Please enter the barcode number and how many packages of each type of light bulb that you purchased during your visit to «Store Name», and check whether you plan to install them at home or at a business. If you plan to install the light bulbs in a different ZIP code than your mailing address, please provide that ZIP code to the right.

Questions?

Call (800) 454-5070

Barcode	# Packages	Home	Business



Home ZIP Code:

Business ZIP Code:

Please provide your contact information and receipt number.

Name _____ Mailing Address _____

Phone (____)____-____ City _____ State _____

Email _____ ZIP _____ Receipt # _____

By providing your contact information, you agree to be contacted for a follow-up survey.

ID: «Store_Batch»

*Limit 1 per household. Allow 4-6 weeks for gift card processing. Customers not eligible for gift cards will not be contacted.



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL
FIRST-CLASS MAIL PERMIT NO. 1474 MADISON WI

POSTAGE WILL BE PAID BY ADDRESSEE

ATTN TETRA TECH
6410 ENTERPRISE LANE
SUITE 300
MADISON WI 53719-9762





APPENDIX L: RETAIL CFL INTERCEPT SURVEY QUESTIONNAIRE

Store: _____

Date: _____

DC SEU Intercept Survey Questionnaire

[Interviewers: Target customers are those purchasing eligible bulbs as pointed out by the DC SEU representative on arrival]

Introduction

Hi, I'm here today on behalf of the District Department of the Environment. We are interviewing customers who purchase energy efficient lighting as part of a research study. Do you have five minutes to answer a few questions?

Q1 Thank you. First, what types of light bulbs did you just pick up? [SELECT ALL THAT APPLY]

- 1 Compact Fluorescent Lamp (CFL)
- 2 Light-emitting Diode (LED)
- 3 Incandescent/Standard [TERM]
- 4 Other [TERM]

Q2 Could I write down some details from the packages?

[Record barcode of each package; continue on second page if needed]

BARCODE	# of Packages

Q3 Are these bulbs going to be installed in your home or in a business?

- 1 Home
- 2 Business
- 3 Somewhere else [Record: _____]



Q4 What is the ZIP code where you plan to install them?

_____ [Record ZIP code]

Q5 Were these light bulbs discounted at all? Do you know who sponsored the discount?

- 1 DC SEU (Sustainable Energy Utility) [SKIP TO Q7]
- 2 DDOE (District Department of the Environment)
- 3 Manufacturer
- 4 [Store]
- 5 Not discounted
- 6 Other/Don't know

Q6 [IF Q5 NOT 1 (DC SEU)] Have you heard of the DC Sustainable Energy Utility, or DC SEU?

- 1 Yes
- 2 No [SKIP TO Q8]

Q7 [IF Q5 = DC SEU OR Q6 = Yes] What do you know about the DC Sustainable Energy Utility?

- 1 Nothing, just heard the name [SKIP TO Q8]
- 2 [Record comments]

Q8 We would like to follow up with you in a few months for some other parts of our research study. Could I get your name and contact information? [Record as much as respondent will provide, indicate if refused]

Name: _____

Address: _____

City/State/Zip: _____

Phone: _____

Email: _____



APPENDIX M: RETAIL EFFICIENT PRODUCTS RETAILER INTERVIEW GUIDE

DC SEU RETAIL EFFICIENT PRODUCTS RETAILER INTERVIEW GUIDE

Interviewee(s)

- Phone
- Email
- Job Title

Interviewer(s)

Initiative/Area of
responsibility

Date(s):

My name is _____, with Tetra Tech. The District of Columbia Sustainable Energy Utility (or DCSEU) has selected our firm to evaluate its Retail Efficient Products initiative. I would like to ask you some questions about your experience with the initiative. Your feedback on the initiative is extremely valuable as DCSEU wants to improve your and your customers' experience and satisfaction with the initiative. As part of this study we are talking to retailers that are participating in the initiative. This interview should take approximately 15 minutes of your time. May we take some time now to do the interview? (If no, when would be a convenient time?)

I want to assure you that all of your responses and information about your company will be kept confidential and will not be reported individually by your name or business' name. I would like to record this call so I can go back to take notes, is that alright with you?

1. Introduction

- a. When did you begin participating in the DCSEU Efficient Products initiative?
- b. How did you become aware of the DC initiative, and that your store could participate?
- c. From start to finish, what is the process for actually selling bulbs through DCSEU?



2. Sales Trends and Marketing

- a. Before you began participating in the DCSEU Retail Efficient Products initiative, what percent of your light bulb sales were ENERGY STAR-rated bulbs?
- b. Since you signed up with the DCSEU initiative, what percent of your light bulb sales are ENERGY STAR-rated bulbs?
- c. On a scale from 0 to 10, where 0 is not at all influential and 10 is very influential, please rate the influence that the DCSEU initiative has had on your sales of ENERGY STAR-rated light bulbs since becoming a participating retailer.
- d. Has your store's participation in this initiative affected your stocking and sales of certain kinds of bulbs? (if needed: such as incandescent bulbs, standard CFLs, specialty CFLs, or LED bulbs?) Does your store stock program-qualifying bulbs (ENERGY STAR-rated) that are not discounted through DCSEU? If so, approximately what proportion of your sales are program-qualifying bulbs? About what percent of your lighting sales are through the DCSEU initiative?
- e. Has your participation in the efficient products initiative affected your stocking or sales of any other energy-efficient products? If so, please describe (probe for products and influence).
- f. Does your store have a goal for the number of bulbs you sell? How did you do in reaching that goal last year (2013)? Could DC SEU have done anything specific to help reach that goal?
- g. Do you have a feel for what proportion of bulbs is purchased for home use versus at a business?
- h. How many of your regular customers live within DC? Can you estimate what proportion of customers who purchase DCSEU-discounted bulbs lives in DC? Has DC SEU brought in additional customers, and from where? What is your strategy to target DC SEU-incented bulbs specifically towards DC residents/businesses?



- i. Do you still carry standard incandescent bulbs? If so, do you carry 100 watt? 75-watt? 60-watt? 40-watt? About how much standard incandescent bulbs stock for your business do you estimate is still available to be sold?

3. Process

- a. Overall, what is your customers' attitude towards efficient lighting products? Have you received any complaints regarding the bulbs discounted through DC SEU?
- b. Do you feel that the incentives are effective in encouraging your customers to buy efficient lighting products? Are your customers made aware that certain products are discounted? Do they know it comes from DC SEU? How are they made aware? If not, could DCSEU provide any assistance or materials to help raise awareness?
- c. **(low priority after here, covered by DC survey)** Who are your contacts at DC SEU? How has your interaction with your contact been? Is there anything else your contact could provide to help support your participation?
- d. What marketing activities does your store conduct related to the DCSEU initiative? What materials are provided by DCSEU? Do you find these materials to be effective? (Probe for improvements)
- e. What reporting do you complete for DC SEU? Do you consider reporting requirements to be reasonable?
- f. [IF OEM] How long does it typically take to receive payment after submitting an invoice?



APPENDIX N: RESIDENTIAL PARTICIPANT SURVEY RESPONSE RATE

Table N-1. Residential Participant Survey Response/Cooperation Rate, by Program Track

	Solar Photo Voltaic	Federal Home Loan Bank	Home Performance with ENERGY STAR	Energy Efficient Appliances	Energy Efficient Lighting	Total
Starting Sample	56	26	174	237	148	641
Ineligible (did not participate)	1	1	5	5	3	15
Bad number	13	4	13	21	69	120
Adjusted Sample	41	21	156	209	75	502
Refusal	2	3	9	46	13	73
Partial	1	0	2	2	2	7
Language Barrier - Spanish	1	0	0	0	3	4
Language Barrier - Other	0	0	0	1	0	1
Other final disposition	1	2	7	2	2	14
Duplicated cases	1	0	0	2	1	4
Active	19	6	83	84	23	215
Complete	17	10	55	74	32	188
Cooperation Rate	41%	48%	35%	35%	43%	37%
Response Rate	30%	38%	32%	31%	22%	29%



APPENDIX O: MULTIFAMILY/COMMERCIAL AND INDUSTRIAL PARTICIPANT SURVEY RESPONSE RATE

Table O-1. Multifamily/Commercial and Industrial Participant Survey Response/Cooperation Rate by Program Track

Outcome	Track									
Last Disposition	7110SHOT	7510BLTZ	7510CIRX	7510MTV	7520CUST	7520MARO	7610BLTZ	7610CDI	7620LICP	Grand Total
Starting Sample	12	56	54	38	102	4	10	25	10	311
3505-Bad number		3	1	1	1					6
4202-No one available to answer questions	1	1	1	1				1		5
4701-Ineligible (Did not participate)		3	1		1				1	6
4705-Ineligible (Contractor made decisions)		2								2
Adjusted Sample	11	47	51	36	100	4	10	24	9	292
4704-Not attempted; part of multiple		1	11	4	27	1	5	17	2	68
2100-Hard Refusal				1						1
2102-Hard Refusal (Do not call anymore)				1						1
2120-Partial (Refusal)		1								1
2125-Partial (Callback)									1	1
2131-Partial (Busy)		1								1
2132-Partial (AM/VM no message left)	1	2	1	2						6
2133-Partial (Message left)		1			1					2
2201-Soft Refusal (Doesn't want to participate)					3					3
2203-Soft Refusal (Hung up during intro)			1	2						3
2204-Soft Refusal (Not interested)		1								1
2207-Soft Refusal (Doesn't have time)			1	1						2
3100-No answer/No machine				1						1
3200-Busy signal		1								1
3300-Callback		1	3	4	2					10



Outcome	Track									
Last Disposition	7110SHOT	7510BLTZ	7510CIRX	7510MTV	7520CUST	7520MARO	7610BLTZ	7610ICDI	7620LICP	Grand Total
3400-AM/VM (Left message)		4	4	4	14	1	4	1	2	34
3405-AM/VM (No message left)	1	10	9	2	8			1		31
3620-Unavailable for duration		1		1	5					7
3640-Language barrier (Other)		2								2
5100-Green sheet (On hold)		2	1							3
1100-Complete	9	19	20	13	40	2	1	5	4	113
Response Rate (Complete/Starting)	75%	34%	37%	34%	39%	50%	10%	20%	40%	36%
Cooperation Rate (Complete/Adjusted)	82%	40%	39%	36%	40%	50%	10%	21%	44%	39%



APPENDIX P: BENCHMARKING

P.1 FINDINGS

Category	Equipment Type	NTG Ratio	Inputs	Source
Commercial Retrofit	CFLs	60–84%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Controls	68–79%	Evaluation verified	NV Benchmarking
Commercial Retrofit	HVAC	56–107%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Direct Install	64–200%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Motors	85–105%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Other lighting	73–100%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Refrigeration	92–142%	Evaluation verified	NV Benchmarking
Commercial Retrofit	Overall, not equipment specific	66%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Government/Institutional/Nonprofits	Overall, not equipment specific	64%	Evaluation verified	PECO PY4
C&I Prescriptive	Overall, not equipment specific	72%	Evaluation verified	Maryland Statewide 2011
C&I Prescriptive	Lighting	56%	Evaluation verified	BG&E 2011
C&I Prescriptive	Non-lighting	93%	Evaluation verified	BG&E 2011
C&I Prescriptive	Lighting	77%	Evaluation verified	PHI 2011
C&I Prescriptive	Non-lighting	96%	Evaluation verified	PHI 2011
C&I Prescriptive	Non-lighting	87%	Evaluation verified	SMECO 2011
C&I Prescriptive	Non-lighting	97%	Evaluation verified	Potomac Edison 2011
Commercial Incentives	Non-lighting	23%	Evaluation verified	PPL PY4
Commercial Incentives	Direct Install Lighting	77%	Evaluation verified	PPL PY4
Commercial Incentives	Overall, not equipment specific	78%	Evaluation verified	PECO PY4
C&I Custom	Overall, not equipment specific	73%	Evaluation verified	Maryland Statewide 2010
C&I Custom	Overall, not equipment specific	52%	Evaluation verified	PPL PY4
C&I Direct Install	Overall, not equipment specific	74%	Evaluation verified	Maryland Statewide 2010



Category	Equipment Type	NTG Ratio	Inputs	Source
Solar Thermal Water Heaters	Solar water heaters	100.00%	Assumed	NV Benchmarking
Residential Lighting	Standard CFL	34–85%	Evaluation verified, Deemed	NV Benchmarking
Residential Lighting	Specialty CFL	60–105%	Deemed	NV Benchmarking
Residential Lighting	Reflector	59–85%	Deemed	NV Benchmarking
Residential Lighting	LED	85–100%	Evaluation verified, Deemed	NV Benchmarking
Residential Lighting	Fixture	78–102%	Evaluation verified, Deemed	NV Benchmarking
Residential Lighting	Overall, not equipment specific	84%	Evaluation verified	PPL PY4
Residential Lighting	Overall, not equipment specific	38%	Evaluation verified	PECO PY4
Residential Lighting	Overall, not equipment specific	51%	Evaluation verified	Maryland Statewide 2011
Energy Efficient Products	Overall, not equipment specific	50%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Energy Efficient Products	Overall, not equipment specific	72%	Evaluation verified	PPL PY4
Energy Efficient Products	Overall, not equipment specific	49%	Evaluation verified	PECO PY4
Residential HVAC	New cooling equipment	50–98%	Deemed, evaluation verified	NV Benchmarking
Residential HVAC	Duct Sealing	70–85%	Deemed	NV Benchmarking
Residential HVAC	Tune-up Service	46–78%	Assumed, deemed	NV Benchmarking
Residential HVAC	Overall, not equipment specific	58%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Residential HVAC	Overall, not equipment specific	44%	Evaluation verified	Maryland Statewide 2011
Appliances	Clothes Washers	57%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Appliances	Refrigerator/Freezer	57%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Residential Retrofit	Overall, not equipment specific	88%	Evaluation verified	FirstEnergy PA PY4 (Met Ed)
Residential Retrofit	Overall, not equipment specific	75%	Evaluation verified	PPL PY4



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