Section 5. Appendices

5.1 Data Collection Instruments

5.1.1 Participant Phone Survey

COMED SMART IDEAS FOR YOUR BUSINESS PROGRAM

PARTICIPANT SURVEY – BUSINESS PRESCRIPTIVE PROJECTS

PY3 FINAL

INTRODUCTION

[READ IF CONTACT=1]
Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. This is not a sales call. May I please speak with <PROGRAM CONTACT>?

Our records show that <COMPANY> purchased energy efficient <ENDUSE>, which was recently installed and received an incentive of <INCENTIVE AMOUNT> from ComEd. We are calling to do a follow-up study about <COMPANY>'s participation in this incentive program, which is called the Smart Ideas for Your Business Program. I was told you're the person most knowledgeable about this project. Is this correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 20 minutes. Is now a good time? [If no, schedule call-back]

[READ IF CONTACT=0]
Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. I would like to speak with the person most knowledgeable about recent changes in cooling, lighting, or other energy-related equipment for your firm at this location.

[IF NEEDED] Our records show that <COMPANY> purchased energy efficient <ENDUSE>, which was recently installed and received an incentive of <INCENTIVE AMOUNT> from ComEd. We are calling to do a follow-up study about your firm's participation in this incentive program, which is called the Smart Ideas for Your Business Program. I was told you're the person most knowledgeable about this project. Is that correct? [IF NOT, ASK TO BE TRANSFERRED TO MOST KNOWLEDGABLE PERSON OR RECORD NAME & NUMBER.]

This survey will take about 20 minutes. Is now a good time? [If no, schedule call-back]

SCREENING QUESTIONS

S1 Which of the following statements best characterizes your relation to <COMPANY>?

1. I am an employee of <COMPANY> (THIS CATEGORY SHOULD INCLUDE THE OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY.)
2. My company provides energy-related services to <COMPANY>
3. I am a contractor and was involved in the installation of energy efficient equipment for this project

00. (Other, specify) (PUT OWNER/PRESIDENT/PARTNER ETC. OF THE COMPANY IN 1)
98. (Don't know)
99. (Refused)

[READ if S1<>1] This survey asks questions about the energy efficiency upgrades for which <COMPANY> received an incentive at <ADDRESS>. Please answer the questions from the perspective of <COMPANY>. For example, when I refer to "YOUR COMPANY", I am referring to <COMPANY>. If you are not familiar with certain aspects of the project, please just say so and I will skip to the next question.

A1. Just to confirm, between June 1, 2010 and May 31, 2011 did <COMPANY> participate in ComEd's Smart Ideas for Your Business Program at <ADDRESS>? (IF NEEDED: This is a program where your business received an incentive for installing one or more energy-efficient products.)

1 (Yes, participated as described)
2 (Yes, participated but at another location)
3 (NO, did NOT participate in program)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[SKIP A2 IF A1=1,2]

A2. Is it possible that someone else dealt with the energy-efficient product installation?

1 (Yes, someone else dealt with it)
2 (No)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[IF A2=1, ask to be transferred to that person. If not available, thank and terminate. If available, go back to A1]

[IF A1=2,3,00,98,99: Thank and terminate. Record dispo as "Could not confirm participation".]

Before we begin, I want to emphasize that this survey will only be about the energy efficient <END USE> you installed through the Smart Ideas for Your Business Program at <ADDRESS>.

A3. I'd like to confirm some information in ComEd's database. Our records show that you implemented the following <ENDUSE> measures through the Smart Ideas for Your Business Program. Is this correct?

[ASK A3a IF MEASD1 <> BLANK]

A3a <MEASD1>

1 (Yes)
3 (No, did not install)
8 (Don't know)

9 (Refused)

[ASK A3b IF MEASD2 <> BLANK]

A3b <MEASD2>

1 (Yes)
3 (No, did not install)
8 (Don't know)
9 (Refused)

[ASK A3c IF MEASD3 <> BLANK]

A3c <MEASD3>

1 (Yes)
3 (No, did not install)
8 (Don't know)
9 (Refused)

IF A3A=3,8,9 AND A3B=3,8,9 AND A3C=3,8,9: Thank and Terminate, Record Dispo as "Could Not Confirm Measures"

IF QA3A=1 OR 2 THEN MEAS1=1, IF QA3B=1 OR 2 THEN MEAS2=1, IF QA3C=1 OR 2 THEN MEAS3=1

LIGHTING MODULE [ASK IF LIGHT=1, ELSE SKIP TO COOLING MODULE]

PL1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (Owner)
8. (Supplier)
9. (ComEd representative/program staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

PL2 And who informed you about the availability of an incentive through ComEd Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (ComEd Account Manager)
8. (owner/developer)
9. (project manager)
10. (Supplier)
11. (ComEd representative/program staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

L0 When did you implement this project (IF NECESSARY, PROBE FOR BEST GUESS)

a Month [Precodes for Jan through Dec., DK, REF]
b Year [Precodes for 2010 and 2011, DK, REF]

Measure Loop

[Loop 1: ASK IF MEAS1=1. Loop 2: ASK IF MEAS2=1. Loop 3: ASK IF MEAS3=1.]
[For Loop 2, replace "1" at the end of read-ins with "2"; for Loop 3, replace "1" with "3".]

[LMSR=1: LINEAR]
[LMSR=2: INTERIOR OTHER]
[LMSR=3: CONTROLS]
[LMSR=4: EXIT SIGNS]
[LMSR=5: DELAMP WITH LINEAR]
[LMSR=6: DELAMPING ONLY]
[LMSR=9: EXTERIOR]

[IF LMSR=3,5 SKIP TO NEXT LIGHTING MEASURE]
The following questions are about the <MEASD1> you installed through the Smart Ideas for Your Business Program.

REMOVED EQUIPMENT
[SKIP TO EX1 if LMSR=4]

I'd like to ask you a few questions about the equipment that was removed when you installed the <MEASD1>…

[SKIP L7 if LMSR=6]
L7 What type of lighting was removed when you installed <MEASD1> through the Smart Ideas for Your Business program? (READ LIST) [MULTIPLE RESPONSE, UP TO 3]
- 1 Linear fluorescent lights
- 2 Metal Halide Fixtures
- 3 High Pressure Sodium Fixtures
- 4 Compact fluorescent lights
- 5 Incandescent bulbs
- 6 (Did not replace anything - new equipment)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

[ASK L7a IF L7=1 or LMSR=6]
L7a What type of linear fluorescent lights were removed? (READ LIST) [MULTIPLE RESPONSE, UP TO 3]
- 1 High performance T8 lighting (1" diameter bulbs)
- 2 Standard performance T8 fluorescent lighting (1" diameter bulbs)
- 3 BLANK
- 4 T12 lighting (1.5" diameter bulbs)
- 5 T5 lighting (5/8" diameter)
- 00 (Other, specify)
- 98 (Don't know)
- 99 (Refused)

[ASK L7b IF L7a=4]

L7b What types of ballasts were in use on the linear fluorescent lighting you removed?

1 Electronic Ballast
2 Magnetic Ballast
00 (Other, specify)
98 (Don't know)
99 (Refused)

[ASK L10 IF L7a=4]

L10 If you had not participated in the program, when would you have replaced your T-12 lighting?

1 (Within one year)
2 (Between 1 and 2 years)
3 (2 or more years later)
8 (Don't know)
9 (Refused)

[SKIP L9 IF LMSR=9]

L9 Was the new lighting equipment installed in an air conditioned (cooled) space?

1. (Yes)
2. (No)
3. (Some of the lighting was and some wasn't)
8. Don't know
9. Refused

L4 After you completed the installation of the new fixtures, did you install additional lighting fixtures in that same space at a later time to increase the amount of lighting?

1 Yes
2 No
8 (Don't know)
9 (Refused)

[ASK IF L4=1, ELSE GO TO NEXT LIGHTING MEASURE]

L5 How many of these additional new fixtures did you install? [NUMERIC OPEN END, 1 TO 3000; 98=Don't know, 99=Refused]

EXIT SIGNS

[ASK IF LMSR=4; ELSE GO TO NEXT LIGHTING LOOP]

EX1 What type of exit signs were removed? (READ LIST) [MULTIPLE RESPONSE, UP TO 3]

1 Incandescent exit signs
2 Compact fluorescent exit signs
3 LED exit signs
00 (Other, specify)
98 (Don't know)
99 (Refused)

[End of Measure Loop; GO TO NEXT LIGHTING MEASURE]

EQUIPMENT INTO STORAGE

L6 Was any of the lighting equipment for which you received an incentive placed into storage or installed at another facility?
1. (Yes)
2. (No)
8. (Don't know)
9. (Refused)

[SKIP L6a AND L6b IF L6<>1]

L6a What percentage of the lighting equipment for which you received an incentive was placed in storage? [NUMERIC OPEN END, 0 TO 100; 998=Don't know, 999=Refused]

L6b And what percentage was installed at another facility? [NUMERIC OPEN END, 0 TO 100; 998=Don't know, 999=Refused]

HOURS OF USE – LIGHTING

[ASK IF LMSR1=1,2 OR LMSR2=1,2 OR LMSR3=1,2; ELSE SKIP TO NTG MODULE]

Now we'd like to talk about the hours that your interior lighting equipment is in operation.

LH1a Are you typically open every day, Monday through Friday?
1 Yes
2 No
8 Don't know
9 Refused

[ASK LH1b IF LH1a=2]

LH1b How many days are you CLOSED Monday through Friday?
1 One
2 Two
3 Three
4 Four
5 Five
8 Don't know
9 Refused

[IF LH1b=5, SKIP TO LH4]

LH2 At what time do your indoor lights currently turn on during weekdays (Monday - Friday)? (Enter 2400 for 24-hour operation, enter 0 for never on)
LH2a Enter hours and minutes, e.g., 0530 for 5:30
LH2b 1. AM
2. PM

[SKIP LH3 IF LH2=24hr or never]

LH3 At what time do your indoor lights currently turn off during weekdays (Monday - Friday)? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH3a Enter hours and minutes, e.g., 0530 for 5:30

LH3b 1. AM
2. PM

LH4 Does the lighting equipment operate on a different schedule on weekends (Saturday and Sunday)?

1 Yes
2 No
8 Don't know
9 Refused

[ASK IF LH4=1, ELSE SKIP TO LH9]

LH5 On Saturdays, at what time does the indoor lighting equipment turn on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH5a Enter hours and minutes, e.g., 0530 for 5:30

LH5b 1. AM
2. PM

[SKIP LH6 IF LH5=24hr or never]

LH6 And when does the indoor lighting equipment turn off on Saturdays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH6a Enter hours and minutes, e.g., 0530 for 5:30

LH6b 1. AM
2. PM

LH7 And on Sundays, at what time does the indoor lighting equipment turn on? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH7a Enter hours and minutes, e.g., 0530 for 5:30

LH7b 1. AM
2. PM

[SKIP LH8 IF LH7=24hr or never]

LH8 And when does the indoor lighting equipment turn off on Sundays? (Enter 2400 for 24-hour operation, enter 0 for never on)

LH8a Enter hours and minutes, e.g., 0530 for 5:30

LH8b 1. AM
2. PM

LH9a During hours when your business is OPEN, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH9b IF LH1a=1 AND LH2a = 2400 AND LH4 = 2]

LH9b During hours when your business is CLOSED, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

LH10a Are there any months during the year when the operating schedule for the indoor lighting differs significantly from what you just described?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK LH10b-e IF LH10a=1; ELSE SKIP TO PROCESS MODULE]

LH10b How many hours per day does the indoor lighting typically operate during the periods with different operating schedules?
[NUMERIC OPEN END, 0 TO 24; 98=DON'T KNOW, 99=REFUSED]

LH10c And how many days per week?
[NUMERIC OPEN END, 0 TO 7; 8=DON'T KNOW, 9=REFUSED]

LH10d How many months per year does the equipment run on the alternative schedule? [NUMERIC OPEN END, 0 TO 12; 98=DON'T KNOW, 99=REFUSED]

LH10e During hours when your business is OPEN, on the alternative schedule, approximately what percentage of the indoor lighting is kept on? [NUMERIC OPEN END, 0 TO 100; 998=DON'T KNOW, 999=REFUSED]

[SKIP LH10f IF LH10b = 24]

LH10f During hours when your business is CLOSED on the alternative schedule, approximately what percentage of the indoor lights are kept on? [NUMERIC OPEN END, 0 to 100; 998=Don't know, 999=Refused]

[ASK THE PY3 NET-TO-GROSS MODULE, THEN RETURN]

[ASK THE PY3 SPILLOVER MODULE, THEN RETURN]

HVAC MODULE [ASK IF COOLING=1, ELSE SKIP TO REFRIGERATION MODULE]

PC1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (Owner)
00. (Other, specify)
98. (Don't know)
99. (Refused)

PC2 And who informed you about the availability of an incentive through ComEd Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (ComEd Account Manager)
8. (owner/developer)
9. (project manager)
11. (ComEd representative/program staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

C0 When did you implement this project (IF NECESSARY, PROBE FOR BEST GUESS)

a Month [Precodes for Jan through Dec.; DK, REF]
b Year [Precodes for 2010 and 2011; DK, REF]

[End of HVAC MODULE]

[ASK THE PY3 NET-TO-GROSS MODULE, THEN RETURN]

[ASK THE PY3 SPILLOVER MODULE, THEN RETURN]

REFRIGERATION MODULE [ASK IF REFRIG=1, ELSE TO GO MOTORS MODULE]

PR1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (Owner)
9. (ComEd Representative/Program Staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

PR2 And who informed you about the availability of an incentive through ComEd Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (ComEd Account Manager)
8. (owner/developer)
9. (project manager)
11. (ComEd Representative/Program Staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

R0 When did you implement this project (IF NECESSARY, PROBE FOR BEST GUESS)

a Month [Precodes for Jan through Dec.]
b Year [Precodes for 2010 and 2011]

Measure Loop

[Loop 1: ASK IF MEAS1=1. Loop 2: ASK IF MEAS2=1. Loop 3: ASK IF MEAS3=1.]
[For Loop 2, replace "1" at the end of read-ins with "2"; for Loop 3, replace "1" with "3".]

The following questions are about the <MEASD1> installed through the Smart Ideas for Your Business Program.

REMOVED EQUIPMENT

R1 What type of refrigeration equipment was removed when you installed the <MEASD1> through the Smart Ideas for Your Business Program?

1 (Old Strip curtains)
2 (Older Anti-sweat heat controllers)
3 (Standard efficiency evaporator fan motors)
4 (Older ice maker)
5 (Older controls)
6 (Same Equipment, just newer)
7 (Fluorescent display case lighting)
00 (Other, specify)
96 (NONE - Not a replacement)
98 (Don't know)
99 (Refused)

[SKIP R2 AND R3 IF R1=96,98,99]

R2 How would you describe the condition of refrigeration equipment that was removed? Was it…

1 Inoperable (broken)
2 Poor condition
3 Fair condition
4 Good condition
8 Don't know
9 Refused

R3 Approximately how old was the refrigeration equipment that was removed by the new refrigeration equipment? Was it…

1 Less than 5 years old
2 Between 5 and 10 years old
3 10 to 20 years old
4 more than 20 years old
8 Don't know
9 Refused

[ASK R4a and R4b IF MEASD1="Anti-Sweat Heater Controls"]

R4a Thinking about the previous system you had in place to reduce condensation on your refrigeration doors, was it on all the time or did you control the number of hours that it operated?

1 On all the time
2 Controlled the hours of operation
00 (Other, specify)
96 (Didn't have a previous system)
98 Don't Know
99 Refused

[ASK R4b IF R4a=2]

R4b How many hours per day was the previous system on? [NUMERIC OPEN END, 0 TO 24; 98=Don't know, 99=Refused]

[End of Measure Loop; GO TO NEXT REFRIGERATION MEASURE]

[ASK PY3 NET-TO-GROSS MODULE, THEN RETURN]

[ASK PY3 SPILLOVER MODULE, THEN RETURN]

MOTORS MODULE [ASK IF MOTORS=1]

PM1 Who was the most influential in identifying and recommending that you install the <ENDUSE> project you completed through the Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (Owner)
9. (ComEd Representative/Program Staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

PM2 And who informed you about the availability of an incentive through ComEd Smart Ideas Program?

1. (me/respondent)
2. (contractor)
3. (engineer)
4. (architect)
5. (manufacturer)
6. (distributor)
7. (ComEd Account Manager)
8. (owner/developer)
9. (project manager)
11. (ComEd Representative/Program Staff)
00. (Other, specify)
98. (Don't know)
99. (Refused)

Measure Loop

[Note to programmer: The Smart Ideas sample has no participant with more than one measure. Only need one loop.]

The following questions are about the <MEASD1> you installed through the Smart Ideas Program.

M0 When did you implement this project (IF NECESSARY, PROBE FOR BEST GUESS)

a Month [Precodes for Jan through Dec.]
b Year [Precodes for 2010 and 2011]

M1 Are the new motors used to... (READ LIST)

1 Drive a newly installed piece of equipment
2 Replace a failed motor
3 Replace a functioning motor
4 Serve as a spare
00 Or for some other reason (Specify)
98 (Don't Know)
99 (Refused)

M1a Are the new motors controlled by a variable speed drive (VSD)?

1 Yes
2 No
8 (Don't know)
9 (Refused)

REPLACED EQUIPMENT [ASK IF M1=2,3, ELSE SKIP TO NTG MODULE]

I'd like to ask you a few questions about the equipment that was removed when you installed the new <MEASD1>.

M3a Were the motors you removed…
(IF NEEDED: ""In this survey we use the term "NEMA Premium motors" to refer to very high efficiency motors that meet specific performance criteria developed by the National Electrical Manufacturers Association. We use the term "EPAct Motors" to refer to motors that meet current federal minimum efficiency standards contained in the Energy Policy Act; new motors installed in Illinois after 1997 must be, at a minimum, EPAct motors. Finally, we use the term "Standard Efficiency Motors" to refer to typically older motors that do not meet the current Federal standards.)

1 NEMA Premium motors
2 EPAct motors
3 standard efficiency motors
8 (Don't Know)
9 (Refused)

M3b Had the motors you removed been rewound?

1 Yes
2 No
8 (Don't Know)
9 (Refused)

M3c How would you describe the condition of the motors that were removed when you installed the new <MEASD1>? Were they…

1 Inoperable (broken)
2 Poor condition
3 Fair condition
4 Good condition
8 (Don't Know)
9 (Refused)

M3d How old were the motors that were removed? Would you say…

1 Less than 5 years old
2 Between 5 and 10 years old
3 10 to 20 years old
4 more than 20 years old
8 (Don't Know)
9 (Refused)

[End of MOTORS MODULE]

[ASK THE PY3 NET-TO-GROSS MODULE, THEN RETURN]

[ASK THE PY3 SPILLOVER MODULE, THEN RETURN]

PY3 NET-TO-GROSS MODULE

Variables for the net-to-gross module:

<NTG> (B=Basic rigor level, S= Standard rigor level. All questions here are asked if the standard rigor level is designated. Basic rigor level is designated through skip patterns)
<UTILITY> (ComEd or Ameren Illinois Utilities)
<PROGRAM> (Name of energy efficiency program)
<ENDUSE> (Type of measure installed; from program tracking dataset)
<VEND1> (Contractor who installed new equipment, from program tracking dataset)
<TECH_ASSIST> (If participant conducted Feasibility Study, Audit, or received Technical Assistance through the program; from program tracking database)
<OTHERPTS> (Variable to be calculated based on responses. Equals 1- minus response to N3p.)
<FINCRIT1> (Variable to be calculated based on responses. Equals 1 if payback period WITHOUT incentive is shorter than company requirement. See instructions below.)
<FINCRIT2> (Variable to be calculated based on responses. Equals 1 if payback period WITH incentive is shorter than company requirement. See instructions below.)
<MSAME> (Equals 1 if same customer had more than one project of the same end-use type; from program tracking database)
<NSAME> (Number of additional projects of the same end-use type implemented by the same customer; from program tracking database)
<FSAME> (Equals 1 if same customer also had a measure of a different end-use type at the same facility; from program tracking database)
<FDESC> (Type of end-use of a different measure type at the same facility; from program tracking database)
<ACCT_REP> (Name of utility account manager, from program tracking database or program files if present)
<BONUS> (Equals 1 if any Prescriptive lighting measure in the overall project received an incentive bonus from the October 25, 2010 to April 30, 2011 offer)

VENDOR INFORMATION

[SKIP TO V4 IF NTG=B]
I would like to get some information on the VENDORS that may have helped you with the implementation of this equipment.

V1 Did you work with a contractor or vendor that helped you with the choice of this equipment?
- 1 (Yes)
- 2 (No)
- 8 (Don't Know)
- 9 (Refused)

[SKIP TO V4 IF V1=2, 8, or 9]

V2 BLANK

V3 Did you also use a DESIGN or CONSULTING Engineer?

961 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

V4 Did your utility account manager assist you with the project that you implemented through the <UTILITY> <*PROGRAM*>?

1 (Yes)
2 (No, don't have a utility account manager)
3 (No, have a utility account manager but they weren't involved)
8 (Don't know)
9 (Refused)

NET-TO-GROSS BATTERY

I'd now like to ask a few questions about the <ENDUSE> you installed through the program.

N1 When did you first learn about <UTILITY>'s Program? Was it BEFORE or AFTER you first began to THINK about implementing this measure? (NOTE TO INTERVIEWER: "this measure" refers to the specific energy efficient equipment installed through the program.)

1 (Before)
2 (After)
8 (Don't know)
9 (Refused)

[ASK N2 IF N1=2, 8, 9]

N2 Did you learn about <UTILITY>'s Program BEFORE or AFTER you DECIDED to implement the measure that was installed? (NOTE TO INTERVIEWER: "the measure" refers to the specific energy efficient equipment installed through the program.)

1 (Before)
2 (After)
8 (Don't know)
9 (Refused)

N3 Next, I'm going to ask you to rate the importance of the program as well as other factors that might have influenced your decision to implement this measure. Think of the degree of importance as being shown on a scale with equally spaced units from 0 to 10, where 0 means not at all important and 10 means extremely important. Now using this scale please rate the importance of each of the following in your decision to implement the measure at this time. [FOR N3a-n, RECORD 0 to 10; 96=Not Applicable; 98=Don't Know; 99=Refused]

(If needed: How important in your DECISION to implement the project was…)

[SKIP N3a IF NTG=B]

N3a. The age or condition of the old equipment

N3b. Availability of the PROGRAM incentive

[ASK IF N3b=8, 9, 10]

N3bb. Why do you give it this rating? [OPEN END; 98=Don't know; 99=Refused]

[SKIP TO N3f IF NTG=B]

[ASK IF <TECH_ASSIST>=1, ELSE SKIP TO N3d]

N3c. Information provided through the technical assistance you received from <UTILITY> or KEMA field staff

[SKIP N3cc IF NTG=B]

[ASK IF N3c=8, 9, 10]

N3cc. Why do you give it this rating? [OPEN END; 98=Don't know; 99=Refused]

[ASK N3d IF V1=1]

N3d. Recommendation from an equipment vendor or contractor that helped you with the choice of the equipment

N3e. Previous experience with this type of equipment

N3f. Recommendation from a <UTILITY> program staff person

[SKIP N3ff IF NTG=B]

[ASK N3ff IF N3f=8, 9, 10]

N3ff. Why do you give it this rating?

N3h. Information from <PROGRAM> or <UTILITY> marketing materials

[SKIP N3hh IF NTG=B]

[ASK IF N3h=8, 9, 10]

N3hh. Why do you give it this rating?

[SKIP TO N3k IF NTG=B]
[ASK N3i IF V3=1]
N3i. A recommendation from a design or consulting engineer

N3j. Standard practice in your business/industry

[SKIP N3k IF V4>1]
N3k. Endorsement or recommendation by a <UTILITY> account manager

[SKIP N3kk IF NTG=B]
[ASK IF N3k=8, 9, 10]
N3kk. Why do you say that?

[SKIP TO N3n IF NTG=B]

N3l. Corporate policy or guidelines

N3m. Payback on the investment

N3n. Were there any other factors we haven't discussed that were influential in your decision to install this MEASURE?
00 [Record verbatim]
96 (Nothing else influential)
98 (Don't Know)
99 (Refused)

[ASK N3nn IF N3n=00]
N3nn. Using the same zero to 10 scale, how would you rate the influence of this factor? [RECORD 0 to 10; 98=Don't Know; 99=Refused]

Thinking about this differently, I would like you to compare the importance of the PROGRAM with the importance of other factors in implementing the <ENDUSE> project.

[SKIP TO N3p IF NTG=B]

[READ IF (N3A, N3D, N3E, N3I, N3J, N3L, N3M, OR N3N)=8,9,10; ELSE SKIP TO N3p]
You just told me that the following other factors were important:
[READ IN ONLY ITEMS WHERE THEY GAVE A RATING OF 8 or higher]
(N3A) Age or condition of old equipment,
(N3D) Equipment Vendor recommendation
(N3E) Previous experience with this measure
(N3I) Recommendation from a design or consulting engineer

(N3J) Standard practice in your business/industry
(N3L) Corporate policy or guidelines
(N3M) Payback on investment
(N3N) Other factor

N3p If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?
Points given to program: [RECORD 0 to 100; 998=Don't Know; 999=Refused]

[CALCULATE VARIABLE "OTHERPTS" AS: 100 MINUS N3p RESPONSE; IF N3p=998, 999, SET OTHERPTS=BLANK]

N3o And how many points would you give to other factors? [RECORD 0 to 100; 998=Don't Know; 999=Refused] [The response should be <OTHERPTS> because both numbers should equal 100. If response is not <OTHERPTS> ask INC1]

INC1 The last question asked you to divide a TOTAL of 100 points between the program and other factors. You just noted that you would give <N3p RESPONSE> points to the program. Does that mean you would give <OTHERPTS> points to other factors?
1 (Yes)
2 (No)
98 (Don't know)
99 (Refused)

[IF INC1=2, go back to N3p]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE SCORE

[ASK IF (N3p>69 AND ALL OF (N3b, N3c, N3f, N3h, AND N3k)=0,1,2,3), ELSE SKIP TO N4aa]

N4 You just gave <N3p RESPONSE> points to the importance of the program, I would interpret that to mean that the program was quite important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were not that important to you. Just to make sure I have recorded this properly, I have a couple questions to ask you.

N4a When asked about THE AVAILABILITY OF THE PROGRAM INCENTIVE, you gave a rating of ...<N3B RESPONSE> ... out of ten, indicating that the program incentive was not that important to you. Can you tell me why the incentive was not that important?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[SKIP N4b IF NTG=B OR<TECH ASSIST>=0]

N4b When I asked you about THE INFORMATION PROVIDED THROUGH THE TECHNICAL ASSISTANCE, you gave a rating of ...<N3C RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me why the information provided was not that important?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N4c When I asked you about THE RECOMMENDATION FROM A <UTILITY> PROGRAM STAFF PERSON, you gave a rating of ...<N3F RESPONSE> ... out of ten, indicating that the information provided was not that important to you. Can you tell me why the information provided was not that important?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N4d When asked about THE INFORMATION from the <PROGRAM> or <UTILITY> MARKETING MATERIALS, you gave a rating of ...<N3H RESPONSE> ... out of ten, indicating that this information from the program or utility marketing materials was not that important to you. Can you tell me why this information was not that important?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[SKIP N4e IF V4>1 or N3k=96,98,99]

N4e When asked about THE ENDORSEMENT or RECOMMENDATION by YOUR UTILTY ACCOUNT MANAGER , you gave a rating of <N3K RESPONSE> ... out of ten, indicating that this Account manager endorsement was not that important to you. Can you tell me why this endorsement was not that important?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[ASK IF N3p<31 AND ANY ONE OF (N3b, N3c, N3f, N3h, OR N3k=8,9,10) ELSE SKIP TO N5]

N4aa You just gave <N3p RESPONSE> points to the importance of the program. I would interpret that to mean that the program was not very important to your decision to install this equipment. Earlier, when I asked about the importance of individual elements of the program I recorded some answers that would imply that they were very important to you. Just to make sure I understand, would you explain why the program was not very important in your decision to install this equipment?

Now I would like you to think about the action you would have taken with regard to the installation of this equipment if the utility program had not been available.

N5 Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely", if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [RECORD 0 to 10; 98=Don't know; 99=Refused]

CONSISTENCY CHECKS

[ASK N5a-d IF N3b=8,9,10 AND N5=7,8,9,10]

N5a When you answered ...<N3B RESPONSE> ... for the question about the influence of the incentive, I would interpret that to mean that the incentive was quite important to your decision to install. Then, when you answered <N5 RESPONSE> for how likely you would be to install the same equipment without the incentive, it sounds like the incentive was not very important in your installation decision.

I want to check to see if I am misunderstanding your answers or if the questions may have been unclear. Will you explain the role the incentive played in your decision to install this efficient equipment?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N5b Would you like for me to change your score on the importance of the incentive that you gave a rating of <N3B RESPONSE> or change your rating on the likelihood you would install the same equipment without the incentive which you gave a rating of <N5 RESPONSE> and/or we can change both if you wish?

1 (Change importance of incentive rating)
2 (Change likelihood to install the same equipment rating)
3 (Change both)
4 (No, don't change)
8 (Don't know)
9 (Refused)

[ASK IF N5b=1,3]

N5c How important was… availability of the PROGRAM incentive? (IF NEEDED: in your DECISION to implement the project) [Scale of 0 to 10, where 0 means not at all important and 10 means extremely important; 98=Don't know, 99=Refused]

[ASK IF N5b=2,3]

N5d If the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment? [Scale of 0 to 10, where 0 means "Not at all likely" and 10 means "Extremely likely"; 98=Don't know, 99=Refused]

[ASK IF N3j>7]

N6 In an earlier question, you rated the importance of STANDARD PRACTICE in your industry very highly in your decision making. Could you please rate the importance of the PROGRAM, relative to this standard industry practice, in influencing your decision to install this measure. Would you say the program was much more important, somewhat more important, equally important, somewhat less important, or much less important than the standard practice or policy?

1 (Much more important)
2 (Somewhat more important)
3 (Equally important)
4 (Somewhat less important)
5 (Much less important)
8 (Don't know)
9 (Refused)

[ASK IF N5>0, ELSE SKIP TO N8]

N7 You indicated earlier that there was a <N5 RESPONSE> in 10 likelihood that you would have installed the same equipment if the program had not been available. Without the program, when do you think you would have installed this equipment? Would you say…

1 At the same time
2 Earlier
3 Later
4 (Never)
8 (Don't know)
9 (Refused)

[ASK N7a IF N7=3]

N7a. How much later would you have installed this equipment? Would you say…

1 Within 6 months?
2 6 months to 1 year later
3 1 - 2 years later
4 2 - 3 years later?
5 3 - 4 years later?

6 4 or more years later
8 Don't know
9 Refused

[ASK N7b IF N7a=6]

N7b. Why do you think it would have been 4 or more years later?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

PAYBACK BATTERY [ASK N8-N10e IF N3m=6,7,8,9,10]

I'd like to find out more about the payback criteria <COMPANY> uses for its investments.

N8 What financial calculations does <COMPANY> make before proceeding with installation of a MEASURE like this one?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N9 What is the payback cut-off point <COMPANY> uses (in months) before deciding to proceed with an investment? Would you say…

1 0 to 6 months
2 7 months to 1 year
3 more than 1 year up to 2 years
4 more than 2 years up to 3 years
5 more than 3 years up to 5 years
6 Over 5 years
8 (Don't know)
9 (Refused)

N10a What was the estimated payback period for the new <ENDUSE>, in months, WITH the incentive 1
from the <PROGRAM>?

00 [NUMERIC OPEN END, UP TO 240]
998 (Don't know)
999 (Refused)

N10b And what was the estimated payback period for the <ENDUSE>, in months, WITHOUT the incentive from the <PROGRAM>?

00 [NUMERIC OPEN END, UP TO 240]

998 (Don't know)
999 (Refused)

[CREATE VARIABLE FINCRIT1. SET FINCRIT1 = BLANK IF: N9=8,9 OR N10b=998,999. SET FINCRIT1 = 1 IF: (N9=1 AND N10b<7) OR (N9=2 AND N10b<13) OR (N9=3 AND N10b<25) OR (N9=4 AND N10b<37) OR (N9=5 AND N10b<61) OR (N9=6). ELSE, SET FINCRIT1 = 0.]

[ASK N10c IF FINCRIT1=1]

N10c Even without the incentive, the <ENDUSE> project met <COMPANY>'s financial criteria. Would you have gone ahead with it even without the incentive?

1 (Yes)
2 (No)
3 (Maybe)
8 (Don't know)
9 (Refused)

[CREATE VARIABLE FINCRIT2. SET FINCRIT2 = BLANK IF: N9=8,9 OR N10a=998,999. SET FINCRIT2 = 1 IF: (N9=1 AND N10a<7) OR (N9=2 AND N10a<13) OR (N9=3 AND N10a<25) OR (N9=4 AND N10a<37) OR (N9=5 AND N10a<61) OR (N9=6). ELSE, SET FINCRIT2 = 0.

[ASK N10d IF FINCRIT2=1 AND FINCRIT1=0 AND N3b=0,1,2,3,4]

N10d The incentive seemed to make the difference between meeting your financial criteria and not meeting them, but you are saying that the incentive didn't have much effect on your decision, why is that?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[ASK N10e IF FINCRIT2=0 AND N3b=8,9,10]

N10e. The incentive didn't cause this <ENDUSE> project to meet <COMPANY>'s financial criteria, but you said that the incentive had an impact on the decision to install the <ENDUSE>. Why did it have an impact?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

CORPORATE POLICY BATTERY [ASK N11-N17 IF N3L=6,7,8,9,10]

N11 Does your organization have a corporate environmental policy to reduce environmental emissions or energy use? Some examples would be to "buy green" or use sustainable approaches to business investments.

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK N12-N17 IF N11=1]

N12 What specific corporate policy influenced your decision to adopt or install the <ENDUSE> through the <UTILITY> program?

00 [RECORD VERBATIM]
98 (Don't know)
99 (Refused)

N13 Had that policy caused you to adopt energy efficient <ENDUSE> at this facility before participating in the <UTILITY> program?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

N14 Had that policy caused you to adopt energy efficient <ENDUSE> at other facilities before participating in the <UTILITY> Program?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK N15-N16 IF N13=1 OR N14=1]

N15 Did you receive an incentive for a previous installation of <ENDUSE>?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK N16 IF N15=1]

N16 To the best of your ability, please describe…. [Record VERBATIM; 98=Don't know; 99=Refused]

a. the amount of incentive received
b. the approximate timing

c. the name of the program that provided the incentive

[ASK N17 IF N13=1 OR N14=1]

N17 If I understand you correctly, you said that <COMPANY> 's corporate policy has caused you to install energy efficient <ENDUSE> previously at this and/or other facilities. I want to make sure I fully understand how this corporate policy influenced your decision versus the <UTILITY> program. Can you please clarify that?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

STANDARD PRACTICE BATTERY [ASK N18-N22 IF N3j=6,7,8,9,10]

N18 Approximately, how long has use of energy efficient <ENDUSE> been standard practice in your industry?

M [00 Record Number of Months; 98=Don't know, 99=Refused]
Y [00 Record Number of Years; 98=Don't know, 99=Refused]

N19 Does <COMPANY> ever deviate from the standard practice?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK IF N19=1]

N19a Please describe the conditions under which <COMPANY> deviates from this standard practice.

00 [Record VERBATIM]
98 (Don’t know)
99 (Refused)

N20 How did this standard practice influence your decision to install the <ENDUSE> through the <PROGRAM>?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N20a Could you please rate the importance of the <PROGRAM>, versus this standard industry practice in influencing your decision to install the <ENDUSE>. Would you say the <PROGRAM> was…

1 Much more important
2 Somewhat more important
3 Equally important
4 Somewhat less important
5 Much less important

8 (Don't know)
9 (Refused)

N21 What industry group or trade organization do you look to to establish standard practice for your industry?
00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

N22 How do you and other firms in your industry receive information on updates in standard practice?
00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

ADDITIONAL PROJECTS

[ASK N26 IF MSAME=1]
Our records show that <COMPANY> also received an incentive from <UTILITY> for <NSAME> other <ENDUSE> project(s).

N26 Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from <UTILITY> or did each project go through its own decision process?
1 (Single Decision)
2 (Each project went through its own decision process)
00 (Other, specify)
98 (Don’t know)
99 (Refused)

[ASK N27 IF FSAME=1 ELSE SKIP TO SPILLOVER MODULE]
Our records show that <COMPANY> also received an incentive from <UTILITY> for a <FDESC> project at < ADDRESS >.

N27 Was the decision making process for the <FDESC> project the same as for the <ENDUSE> project we have been talking about?
1 (Same decision making process)
2 (Different decision making process)
00 (Other, specify)
98 (Don’t know)
99 (Refused)

BONUS INCENTIVE [ASK IF BONUS=1]

BI1a Are you aware that the incentive you received for this project included a bonus amount that ComEd offered for a limited period of time? (If needed, "This payment was part of a special offer from ComEd that paid additional Bonus incentives for occupancy sensors, new T5 and T8 fluorescent fixtures, and most T12 retrofit measures. To receive the higher incentives, you would have used specially marked application forms and submitted the final application between October 25, 2010 and April 30, 2011.")

1 (Yes)
2 (No) [SKIP TO SPILLOVER]
8 (Don't know) [SKIP TO SPILLOVER]
9 (Refused) [SKIP TO SPILLOVER]

BI1b Were you aware of the bonus incentive when you decided to implement the <ENDUSE> project?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

BI2 How did you find out about the bonus incentive?

1 (ComEd website)
2 (Bill insert)
3 (ComEd Newsletter)
4 (Contractor)
5 (Account Manager)
00 (Other, specify)
98 (Don't know)
99 (Refused)

BI3 If you had only received the regular incentive amount for your <ENDUSE> project, how likely would you have been to still implement the exact same project? Please use a scale from 0 to 10 where 0 means "not at all likely" and 10 means "extremely likely".

PY2 SPILLOVER MODULE

Thank you for discussing the new <ENDUSE> that you installed through the <PROGRAM>. Next, I would like to discuss any energy efficient equipment you might have installed OUTSIDE of the program.

SP1 Since your participation in the <UTILITY> program, did you implement any ADDITIONAL energy efficiency measures at this facility or at your other facilities within ComEd's service territory that did NOT receive incentives through any utility or government program?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

[ASK SP2-SP7i IF SP1=1, ELSE SKIP TO S0]

SP2 What was the first measure that you implemented? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

1 (Lighting: T8 lamps)
2 (Lighting: T5 lamps)
3 (Lighting: Highbay Fixture Replacement)
4 (Lighting: CFLs)
5 (Lighting: Controls / Occupancy sensors)
6 (Lighting: LED lamps)
7 (Cooling: Unitary/Split Air Conditioning System)
8 (Cooling: Room air conditioners)
9 (Cooling: Variable Frequency Drives (VFD/VSD) on HVAC Motors)
10 (Motors: Efficient motors)
11 (Refrigeration: Strip curtains)
12 (Refrigeration: Anti-sweat controls)
13 (Refrigeration: EC motor for WALK-IN cooler/freezer)
14 (Refrigeration: EC motor for REACH-IN cooler/freezer)
00 (Other, specify)
96 (Didn't implement any measures)
98 (Don't know)
99 (Refused)

[SKIP TO S0 IF SP2=96, 98, 99]

SP3 What was the second measure? (IF RESPONSE IS GENERAL, E.G., "LIGHTING EQUIPMENT", PROBE FOR SPECIFIC MEASURE. PROBE FROM LIST, IF NECESSARY.)

1 (Lighting: T8 lamps)
2 (Lighting: T5 lamps)
3 (Lighting: Highbay Fixture Replacement)
4 (Lighting: CFLs)
5 (Lighting: Controls / Occupancy sensors)
6 (Lighting: LED lamps)
7 (Cooling: Unitary/Split Air Conditioning System)
8 (Cooling: Room air conditioners)
9 (Cooling: Variable Frequency Drives (VFD/VSD) on HVAC Motors)
10 (Motors: Efficient motors)
11 (Refrigeration: Strip curtains)
12 (Refrigeration: Anti-sweat controls)
13 (Refrigeration: EC motor for WALK-IN cooler/freezer)
14 (Refrigeration: EC motor for REACH-IN cooler/freezer)
00 (Other, specify)
96 (There was no second measure)
98 (Don't know)
99 (Refused)

SP4 BLANK

SP5 I have a few questions about the FIRST measure that you installed. (If needed, read back measure: <SP2 RESPONSE>) [OPEN END]

a. Why did you not receive an incentive for this measure?
b. Why did you not install this measure through the <UTILITY> Program?
c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
d. Please describe the EFFICIENCY of this measure.
e. How many of this measure did you install?

SP5f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

SP5g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP5h IF SP5g = 98, 99]

SP5h. Why do you give it this rating? [OPEN END]

SP5i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC1a IF SP5g=0,1,2,3 AND SP5i =0,1,2,3]

CC1a When you answered ...<SP5g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[ASK CC1b IF SP5g=8,9,10 AND SP5i =8,9,10]

CC1b When you answered ...<SP5g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[SKIP SP6-SP7i IF SP3=96, 98, 99]

SP6 I have a few questions about the SECOND measure that you installed. (If needed, read back measure: <SP3 RESPONSE>) [OPEN END]

a. Why did you not receive an incentive for this measure?
b. Why did you not install this measure through the <UTILITY> Program?
c. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of this measure.
d. Please describe the EFFICIENCY of this measure.
e. How many of this measure did you install?

SP6f. Was this measure specifically recommended by a program related audit, report or program technical specialist?

1 (Yes)
2 (No)
8 (Don't know)
9 (Refused)

SP6g. How significant was your experience in the <UTILITY> Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant? [SCALE 0-10; 98=Don't Know; 99=Refused]

[SKIP SP6h IF SP6g = 98, 99]

SP6h. Why do you give it this rating? [OPEN END]

SP6i. If you had not participated in the <UTILITY> program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure? [SCALE 0-10; 98=Don't Know; 99=Refused]

CONSISTENCY CHECK ON PROGRAM IMPORTANCE RATING VS. NO PROGRAM RATING

[ASK CC2a IF SP6g=0,1,2,3 AND SP6i =0,1,2,3]

CC2a When you answered ...<SP6g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was not very important to your decision. However, when you answered the previous question, it sounds like it was not very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

[ASK CC2b IF SP6g=8,9,10 AND SP6i =8,9,10]

CC2b When you answered ...<SP6g RESPONSE> ... for the question about the influence of the <UTILITY> Program on your decision to install this measure, I would interpret that to mean the Program was quite important to your decision. However, when you answered the previous question, it sounds like it was very likely that you would have installed this measure had you not participated in the <UTILITY> Program. Can you please explain the role the program made in your decision to implement this measure?

00 [Record VERBATIM]
98 (Don't know)
99 (Refused)

PROCESS MODULE

I'd now like to ask you a few general questions about your participation in the Smart Ideas for Your Business program.

Program Processes and Satisfaction

[IF S1<>1 SKIP TO S1A]

S0 How did you first hear about the Smart Ideas program?

1. (ComEd Account Manager)
2. (ComEd Website)
4. (Contractor/Trade Ally)
5. (Email)
6. (Friend/colleague/word of mouth)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S1a Did YOU fill out the application forms for the project? (Either the initial or the final program application)

1. (Yes)
2. (No)
8. (Don't know)
9. (Refused)

[ASK S1b IF S1a=1 ELSE SKIP TO S1e]

S1b Did the application forms clearly explain the program requirements and how to participate?

1. (Yes)
2. (No)
3. (Somewhat)
8. (Don't know)
9. (Refused)

S1c How would you rate the application process? Please use a scale of 0 to 10 where 0 is "very difficult" and 10 is "very easy". [SCALE 0-10; 98=Don't know, 99=Refused]

[ASK S1d IF S1c<4]

S1d Why did you rate it that way?

1. (Difficult to understand)
2. (Long process)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK S1e IF S1a=2]

S1e Who filled out the application forms for the project?

1. (Someone else at the facility)
2. (Someone else at the company)
3. (Trade Ally)
4. (Contractor)
5. (Supplier/Distributor/Vendor)
6. (Engineer)
7. (Consultant)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S2-S3 BLANK

[IF S1=3, SKIP TO S8]

S4a Did you use a contractor for your <ENDUSE> project?

1. Yes
2. No
8. (Don't know)
9. (Refused)

[ASK S4b IF S4a=1]

S4b Was the contractor you used a ComEd Trade Ally? (IF NEEDED: Was the contractor REGISTERED with the Smart Ideas for Your Business Program?)

1. Yes
2. No
8. (Don't know)
9. (Refused)

[ASK S5 IF S4a=1 ELSE SKIP TO S7]

S5 How would you rate the contractor's ability to meet your needs in terms of implementing your project? Please use a scale from 0 to 10, where 0 is "not at all able to meet needs" and 10 is "completely able to meet needs"? [SCALE 0-10; 98=Don't know, 99=Refused]

S6a Would you recommend the contractor you worked with to other people or companies?

1. Yes
2. No
8. (Don't know)
9. (Refused)

S6b Why not?

1. (Too small)
00. (Other, specify)
98. (Don't know)
99. (Refused)

S7 When implementing an energy efficiency project, how important is it to you that the contractor is a ComEd Trade Ally? Please use a scale from 0 to 10, where 0 is "not at all important" and 10 is "very important"? [SCALE 0-10; 98=Don't know, 99=Refused]

S8-S10 BLANK

S11 On a scale of 0 to 10, where 0 is very dissatisfied and 10 is very satisfied, how would you rate your satisfaction with… [SCALE 0-10; 96=not applicable, 98=Don't know, 99=Refused]

a. the incentive amount
b. the communication you had with the Smart Ideas program staff
c. the measures offered by the program (If needed: this is the equipment that is eligible for an incentive under the program)
d. the Smart Ideas program overall
e. ComEd overall

[ASK S12a IF S11a<4]

S12a You indicated some dissatisfaction with the incentive amount, why did you rate it this way? [MULTIPLE RESPONSE; UP TO 3]

1. (Better rebates in other states)
2. (Too small)
3. (Equipment didn't qualify)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK S12b IF S11b<4]

S12b You indicated some dissatisfaction with the communication you had with the Smart Ideas staff, why did you rate it this way?

1. (Provided inconsistent information)
2. (Didn't understand the question)
3. (Hard to reach the right person/person with the answer)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK S12b IF S11c<4]

S12c You indicated some dissatisfaction with the measures offered by the Smart Ideas program, why did you rate it this way? [OPEN END; 98=Don't know, 99=Refused]

[ASK S12d IF S11d<4]

S12d You indicated some dissatisfaction with the Smart Ideas Program overall, why did you rate it this way?

1. (Not as easy as other states)
2. (No clear guidance)
00. (Other, specify)
98. (Don't know)
99. (Refused)

[ASK S12e IF S11e<4]

S12e You indicated some dissatisfaction with ComEd overall, why did you rate it this way?

1. (Rates are too high)
2. (Took too long to get rebate)
3. (Poor customer service)
4. (Poor power supply/service)
00. (Other, specify)
98. (Don't know)
99. (Refused)

Marketing and Outreach

[IF S1<>1, SKIP TO B1A]

MK0 I'm now going to ask you about several specific ways in which you might have seen or heard information about the Smart Ideas for Your Business program. Have you ever… [1=Yes, 2=No, 8=(Don't know), 9=(Refused)]

a. Received information about the program in your monthly utility bill?
b. Attended a ComEd customer event where the program was discussed?
c. Discussed the program with a ComEd Account Manager?
d. Discussed the program with a Contactor or Trade Ally?
e. Seen information about the program on the ComEd Website?
f. Received information about the program in an Email?
g. Heard about the program from a colleague, friend or family member?
h. Attended a meeting, seminar or workshop where the program was presented?
i. Attended a webinar where the program was discussed?
j. Read about the program in a ComEd Newsletter?
k. Been directly contacted by a ComEd or KEMA outreach staff?

MK1b How useful were the program's marketing materials in providing information about the program? Would you say they were…

1. Very useful
2. Somewhat useful
3. Not very useful
4. Not at all useful
8. (Don't know)
9. (Refused)

[ASK MK1c IF MK1b=3,4]

MK1c What would have made the materials more useful to you? [MULTIPLE RESPONSE, UP TO 3]

1. (More detailed information)
2. (Where to get additional information)
00. (Other, specify)
98. (Don't know)
99. (Refused)

MK2 In general, what is the best way of reaching companies like yours to provide information about energy efficiency opportunities like the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

1. (Bill inserts)
2. (Flyers/ads/mailings)
3. (e-mail)
4. (Telephone)

5. (ComEd Account Manager)
8. (Trade allies/contractors)
00. (Other, specify)
98. (Don't know)
99. (Refused)

Benefits and Barriers

B1a What do you see as the main benefits to participating in the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

1. (Energy Savings/Saving money)
2. (Good for the Environment)
3. (Lower Maintenance Costs)
4. (Better Quality/New Equipment)
5. (Rebate/Incentive)
9. (Able to make improvements sooner)
00 .(Other, Specify)
98. (Don't know)
99. (Refused)

B1b What do you see as the drawbacks to participating in the program? [MULTIPLE RESPONSE, UP TO 3]

1. (Paperwork too burdensome)
2. (Incentives not high enough/not worth the effort)
3. (Program is too complicated)
4. (Cost of equipment)
5. (No drawbacks)
00. (Other, specify)
98. (Don't know)
99. (Refused)

B2 BLANK

B3 Was the scope of your project limited by the program's incentive cap?

1. Yes
2. No
00. (Other, specify)
98. (Don't know)
99. (Refused)

Feedback and Recommendations

R1 Do you plan to participate in the program again in the future?

1. Yes
2. No
3. Maybe
8. (Don't know)
9. (Refused)

R2 How could the Smart Ideas for Your Business Program be improved? [MULTIPLE RESPONSE, UP TO 4]

1. (Higher incentives)
2. (More measures)
3. (Greater publicity)
4. (Better Communication/Improve Program Information)
8. (Simplify application process)
11. (Quicker processing times)
00. (Other, specify)
96. (No recommendations)
98. (Don't know)
99. (Refused)

Firmographics

I only have a few general questions left.

F1 BLANK

F2 Which of the following best describes the ownership of this facility?

1. <COMPANY> owns and occupies this facility
2. <COMPANY> owns this facility but it is rented to someone else
3. <COMPANY> rents this facility
8. (Don't know)
9. (Refused)

F6 And which of the following best describes the facility? This facility is…

1. <COMPANY>'s only location
2. one of several locations owned by <COMPANY>
3. the headquarters location of <COMPANY> with several locations

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

[SKIP F7 IF F2=2]

F7 In comparison to other companies in your industry, would you describe <COMPANY> as…

1. A small company
2. A medium-sized company
3. A large company
4. (Not applicable)
8. (Don't know)
9. (Refused)

5.1.2 Trade Ally and Contractor Phone Survey

Trade Ally Survey for the ComEd Prescriptive Program
FINAL

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. THIS IS NOT A SALES CALL. We are doing a brief survey with program allies who have been involved in projects supported by the Smart Ideas for Your Business Program.

We are interested in your experience with the program and any feedback you may have received from your customers about the program. ComEd plans to use the information to improve the energy efficiency programs and services it offers to its business customers.

[If name does not match name on list] Who might be the best person to speak with about the Smart Ideas for Your Business Program?

[If name matches name on list] Would you be willing to speak with me for about 15 minutes? Is now a good time or is there a more convenient time when I could call back?

Alert interviewee that the call will be recorded.
Note that responses will remain confidential and only be reported in aggregate with other responses.

Firmographics

I first have a few general questions about your company.

F1 What is your business category? (Probe for: contractor, engineer, ESCO, equipment vendor, architect)

F2 What type of equipment, if any, would you say is your company's area of expertise? (Probe, if necessary: lighting, HVAC, refrigeration, motors, food service)
   a. If multiple areas: What is the MAIN area? → [RECORD THIS AREA AS "ENDUSE"]
   b. Approximately how many total commercial or industrial [ENDUSE] projects does your company implement in a typical year?

F3 Approximately, how many employees does your company have? (Fewer than 5, 5-10, 11-50, over 50)

F4 What are the key business sectors your company serves? (Probe for light/heavy industry, retail, office, restaurant, etc.)

Freeridership Module [ASK ONLY IF IDENTIFIED BY CUSTOMER]

I now have a few specific questions about your firm's recent involvement in <%CUSTOMER>'s installation of <%MEASURE> through the Smart Ideas for Your Business Program at <%ADDRESS> in <%MONTH/YEAR >.

FR1 <%CUSTOMER> has indicated that your firm was involved in the implementation of this project. Is this correct? Are you the person that is most knowledgeable about your firm's involvement in this project?

[IF NO,PROBE TO SEE IF THERE IS SOMEONE ELSE IN FIRM WHO MAY HAVE KNOWLEDGE OF THIS PROJECT, ELSE SKIP TO FR4]

FR2 Can you please describe your firm's role in the selection and installation of <%MEASURE> at <%CUSTOMER>'s facility? (Probe if firm merely supplied or installed equipment or if they had a role in selecting it. Probe about perceived level of influence firm's recommendation had on customers choice.)

[IF NO ROLE IN SELECTING EQUIPMENT, SKIP TO FR4]

FR3a On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the PROGRAM, including incentives as well as program services and information, in influencing your decision to recommend that <%CUSTOMER> install the energy efficiency MEASURE at this time? [SCALE 0-10]

FR3b And using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM, including incentives as well as program services and information, had not been available, what is the likelihood that you would have recommended this specific MEASURE to <%CUSTOMER>? [SCALE 0-10]

FR4 Do you know of any other vendors that worked with <%CUSTOMER> during their implementation and/or installation of <%MEASURE>, for example engineers or designers? If so, do you have their name and phone number?

Market Trends & Effect of Program on Business

I now have a few questions about the market for commercial and industrial [ENDUSE] equipment and the influence of the Smart Ideas for Your Business Program on your business practices.

M1 Over the last 12 months, approximately what percentage of your [ENDUSE] equipment sales in ComEd's service territory were energy efficient models?

a. Of these energy efficiency models, approximately what percentage would qualify for incentives from the program?
b. And of the installations that would qualify for incentives, approximately what percentage did NOT receive an incentive? Why do you think they did not receive an incentive? *(Probe for other reasons, if only one is mentioned.)*

M2 You just told me that about ___% of your [ENDUSE] sales involve high efficiency equipment. Has this percentage *changed* in the past three years? How? In other words, do more of your sales involve high efficiency equipment?

<u>If increase:</u>

a. How important was the Smart Ideas Program in this change? *(Probe for specific program components: incentives, training, program website, other program components.)*
b. How important are other factors not related to the program? What are these other factors? *(Probe for tax credits/gov't rebates, general EE awareness, change in codes or standards.)*

M3 In what percent of sales situations do you recommend high efficiency [ENDUSE] products?

a. [If not 100%] When you don't recommend high efficiency products, what are the reasons?

M4 Has the frequency with which you recommend high efficiency [ENDUSE] equipment changed in the past three years? How?

<u>If change noted:</u>

a. How important was the Smart Ideas Program in this change? *(Probe for specific program components: incentives, training, program website, other program components.)*
b. How important are other factors not related to the program? What are these other factors? *(Probe for tax credits/gov't rebates, general EE awareness, change in codes or standards.)*

M5 As a result of the Smart Ideas Program…

a. have you changed the type of equipment you supply and sell?
b. have you changed any other business practices as a result of the program? *(Probe for: hired more staff, opened up new offices, changed marketing.)*
c. Has the program caused an increase in business?

M6 How aware, would you say, are your customers of energy efficiency and options available to make their facilities more energy efficient? How interested would you say are they? *(Probe for very, somewhat, not very, not at all aware/interested)*
Has this (awareness/interest) changed over time?

M7 What do you view as the main barriers to the installation of energy efficient equipment for your customers? Does this vary by customer type or size? Anything else? What could be done to overcome these barriers?

Process Module

P1 How aware, would you say, are your customers of the Smart Ideas for Your Business program? How interested are they in it? Does this vary by customer type or size?

P2 How frequently do you promote the program to your customers? (Always, most of the time, sometimes, rarely, never?) If sometimes/rarely/never: Why? Does this vary by customer type or size?

P3 Have you received any marketing materials from the program? If so, what did you receive? *(Probe for fact sheets, case studies, The Wire newsletter, "toolkit" from training session)* Do you provide these materials to your customers?

a. If yes: How useful do you think are these materials in providing information about the program and encouraging customers to participate? If not useful, what would make them more useful?
b. If no: why not?
c. Are there any specific promotional materials that you would like ComEd to provide? If yes, what are they (e.g., case studies, point-of-sale technical handouts, website tools/enhancements)?

[IF REGISTERED TRADE ALLY]

P4 Our records show that you are a registered Trade Ally, is that correct?

a. Last year, ComEd instituted new requirements for becoming a registered Trade Ally. These included attending the Basic training once a year and completing at least one project. How do you feel about these new requirements? Did your firm have any problems meeting the requirements?
b. Has the designation of "Trade Ally" changed any of your business practices? How?
c. What do you see as the main benefits of being a registered Trade Ally? *(Probe: marketing materials, listing on ComEd website, group training, application status, sales coaching, discount on technical training, eligibility for trade ally bonus)*

[IF NOT A REGISTERED TRADE ALLY]

P5 Our records show that you are **not** a registered trade ally, is that correct?

a. Last year, ComEd instituted new requirements for becoming a registered Trade Ally. These included attending the Basic training once a year and completing at least one project. Were you aware of these new restrictions? How do you feel about these new requirements?
b. Why has your company not registered to become a Trade Ally?
c. Are you planning on becoming a registered trade ally?
d. What,if any, do you see as the main benefits of being a registered Trade Ally? *(Probe: marketing materials, listing on ComEd website, group training, application status, sales coaching, discount on technical training)*
e. What Trade Ally benefits could the Smart Ideas Program add that may convince you to become a registered trade ally? *(Probe for trade ally bonus)*

P6 Were you aware that ComEd offered trade ally bonuses in the fall of 2010, where registered trade allies were awarded a 5% bonus of the incentive amount for projects that received $10,000 or more in incentives?

[IF REGISTERED TRADE ALLY]

<u>If aware:</u>

a. Did your company receive a bonus?
b. Did the bonus offering lead to an increased promotion of the program on your behalf? Did it lead to any other changes in your business practices? Do you think it resulted in more or bigger projects?
c. How did you feel about the restrictions/rules of the bonus? Was the bonus amount adequate?
d. What changes, if any, would you make to a trade ally bonus offering to make it more effective at bringing in more large projects? *(Probe: timing of bonus, length of promotion)*

P7 What do you view as the main barriers to customer participation in the Smart Ideas for Your Business program? What could be done to overcome these barriers?

P8 How satisfied are you with your participation in the Smart Ideas for Your Business program? *(Ask very, somewhat, not very, not at all satisfied.)* If not very satisfied or not at all satisfied: why?

a. measures offered
b. incentive amounts
c. communication with Smart Ideas program staff
d. the program overall

[ask if total # of proj<4]

P9 Our records indicate that you only participated in [X] project(s) through the program between June 2010 and May 2011. Can you briefly describe what prevented you from more active participation?

P10 Do you have any recommendations of how the Smart Ideas for Your Business Program could be improved?

This concludes our survey. On behalf of ComEd, thank you very much for your time today!

5.1.3 Account Manager Phone Survey

ComEd Smart Ideas for Your Business C&I Programs: Account Manager Interviews
FINAL

Hello, this is _____ from Opinion Dynamics. We are the independent contractor hired by ComEd to conduct the evaluation of the Smart Ideas for Your Business Program. We are doing a brief survey with ComEd Account Managers. We are interested in your experience with the <Prescriptive and/or Custom> Program and any feedback you may have received about the program from your customers.

Is now still a good time or is there a more convenient time when I could call back?

Alert interviewee that the call will be recorded.
Note that responses will remain confidential and only be reported in aggregate with other responses.

Background

1. How long have you been an Account Manager at ComEd?

2. What kind of customers do you serve? *[Probe for business sector, size, chains]* Approximately how many customers do you serve?

3. How frequently do you interact with your customers? What is the primary mode of communication? [*Probe for if they visit location, call, send out emails, letters]* Does this vary by customer type or size?

NTG Battery

4. According to our records <SCOMP> is a customer of yours who implemented a <EUSE> project through the Prescriptive Program at <ADDR>. Were you aware of their participation?

5. Did you ever promote the Smart Ideas for Your Business Program to <SCOMP>? How frequently did you discuss the program with them? (*Probe for when the first began discussing the program, use <DATE> as a reference point)*

6. Did you play a role in their decision to implement <EUSE> project? Please explain. From your perspective, what were the main factors in <SCOMP> decision to install high efficiency equipment and participate in the program?
    a. If promote it/involved: Without your involvement, how likely would they have been to implement the project through the program? (*Probe for very likely, somewhat likely, not at all likely)*

Program Awareness

7. How familiar would you say you are with the Smart Ideas for Your Business Program? *[Probe: very, somewhat, not very, not at all familiar]*

8. Have you attended any lunch-and-learn presentations? How many? How useful did you find these presentations? How did you use the information from the Lunch N Learns? Please explain.

9. How often do you discuss energy efficiency with your customers? How often do you promote the program? Does this vary by customer type or size?
   <u>If not often:</u> why not?

10. What do you find to be the best way to reach your customers about energy efficiency opportunities? Does this vary by customer type or size?

11. What information about the program do you typically provide? *[probe for fact sheets, case studies]*
    <u>If provide materials:</u> How useful have you found these marketing materials to be? What could make them more useful?

12. Do you use the website as a resource for program information? Do you find that the materials on the website are easily accessible? Do you have any suggestions on how to make program materials more accessible?

13. Do you feel you have enough information about the program to effectively promote it and assist customers in getting started with their participation?

14. Is there anything that the program could do to help you be more effective in promoting the program? *(probe for better marketing materials, more training, …)*

15. Did you attend last year's (2010) EE Expo? Did you promote the Expo to your customers? Did any of your customers attend the Expo?
    a. Did you find this EE Expo useful in providing information to your customers or promoting the program? Are there any changes that would make it better in the future?
    b. How about this year's (2011) Expo that just took place? Did you attend? Did you promote it to your customers? Did your customers attend? How useful was the Expo in providing information about the program?

16. Is there a formal process for tracking leads? Do you keep track of your communications with your customers with respect to the Smart Ideas program? Is this information passed along to Program staff?
    a. Do you find this process is working? Why/Why not?

Customer Awareness/Interest/Participation

17. What percentage of your customers, do you think, are aware of the Smart Ideas for Your Business Program? What percentage is interested? Why or why not? Does this vary by customer type or size?

18. How aware are you of your customers' participation and status in the program? Do you find that the weekly updates are useful? Do they provide enough information? Do you prefer to get updates in any other way?

19. Approximately what percentage of your customers has participated in the Smart Ideas Program? Does this vary by customer type or size?

20. Have you gotten any feedback from customers about the Smart Ideas Program? What is the nature of that feedback? Does this vary by customer type or size?

21. In your view, what are the major barriers to participating in the Smart Ideas for Your Business program?

22. What are the major barriers to your customers in installing energy efficient equipment?

23. This was the first year that the program initiated goals for account executives. (*To bring customers to EE expo, bring in $15 million in paid/reserved projects by Nov, and to attend a certain amount of lunch-and-learns).* Did you achieve these goals? How did you feel about these goals? Did you find them realistic?

Those are all the questions I had. Thank you very much for your time today!

5.1.4 Non-Participant Phone Survey

COMED SMART IDEAS FOR YOUR BUSINESS PROGRAM

NON-PARTICIPANT SURVEY

Final 08/11/11

INTRODUCTION

Hello, this is _____ from Opinion Dynamics calling on behalf of ComEd. This is not a sales call. We are conducting research on behalf of ComEd to help them develop programs to better serve their business customers. I'm looking to speak with the person responsible for making energy decisions for the company. (IF NEEDED: I am looking to speak with someone who might be involved in any decisions to improve the efficiency of the energy consuming systems your business uses, such as lighting or air conditioning) Could you connect me to the appropriate person?

SCREENING

S1 Since June 2008, has <COMPANY> received a rebate from ComEd for the installation of one or more energy-efficient measures?

1 Yes [THANK AND TERMINATE]
2 No
8 (Don't know)
9 (Refused) [THANK AND TERMINATE]

PROCESS QUESTIONS

Program Awareness and Familiarity

PA1 Are you aware that ComEd offers energy efficiency programs to help commercial and industrial customers make energy efficiency improvements at their facilities?

1 Yes
2 No
8 (Don't know)
9 (Refused)

PA2 Have you heard of the Smart Ideas for Your Business Program?

1 Yes
2 No
8 (Don't know)
9 (Refused)

[SKIP to MK2 IF PA2=2,8,9]

PA3 How would you rate your familiarity with the Smart Ideas for Your Business Program? Would you say you are…

1 Very familiar
2 Somewhat familiar
3 Not very familiar
4 Not at all familiar
8 (Don't know)
9 (Refused)

S0 How did you first hear about the Smart Ideas for Your Business Program?

1 (ComEd Account Manager)
2 (Contractor)
3 (Friend/colleague/word of mouth)
4 (ComEd Website)
5 (Email)
00 (Other, specify)
98 (Don't know)
99 (Refused)

MK2 In general, what is the best way of reaching your company with information about energy efficiency opportunities like the Smart Ideas for Your Business program? [MULTIPLE RESPONSE, UP TO 3]

1. (Bill inserts)
2. (Flyers/ads/mailings)
3. (e-mail)
4. (Telephone)
5. (ComEd Account Manager)
8. (Contractor)
00. (Other, specify)
98. (Don't know)
99. (Refused)

Energy Efficiency Knowledge and Baseline

EE1 How would you rate your knowledge of the different ways your company can save money by using energy more efficiently? Would you say that you are…

1 Very knowledgeable
2 Somewhat knowledgeable
3 Not very knowledgeable
4 Not at all knowledgeable
8 (Don't know)
9 (Refused)

EE2 On a scale of 0 to 10 where 0 is "not at all efficient" and 10 is "extremely efficient", how energy efficient would you rate your facility? [SCALE 0 to 10; 98=Don't know, 99=Refused]

EE3 Has this facility ever had an energy audit/consultation to assess its energy efficiency?

1 Yes
2 No
8 (Don't know)
9 (Refused)

Equipment Purchases

Now I would like to ask you some questions about equipment purchases for this location.

Decision-Making

EP1 Thinking about the types of equipment at your facility that consume the most energy (such as lighting, heating & cooling systems), when it's time to replace this equipment, who makes the decisions on the type of equipment to install?

1 (I/Me)
2 (Somebody else at this facility)
3 (Somebody at the company/corporate office)
4 (The owner/landlord – if facility is rented)
5 (The property management firm)
6 (Contractor/consultant)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[SKIP TO PP1 IF EP1=4,5]

EP2 In general, when considering purchasing new equipment, what sources do you consult for information and guidance on what type of equipment to select? [MULTIPLE RESPONSE, UP TO 3]

1 (Your own experience)
2 (Other employees of the company)
3 (Contractor/Consultant)
4 (ComEd/ComEd Account Manager)
5 (Internet)
00 (Other, specify)
98 (Don't know)
99 (Refused)

EP3 On a scale of 0 to 10 where 0 is "not at all important" and 10 is "very important," how important are the following factors when purchasing new equipment for your facility? [SCALE 0-10; 98=Don't know, 99=Refused]

a Purchase cost
b Operating and maintenance cost
c Investment payback period
d Energy efficiency
e Aesthetics
f Availability

EP4 We are interested in understanding how companies like yours make decisions about purchasing energy efficient equipment. I am going to read a list of statements that may or may not apply to your company at this time, but please answer them to the best of your ability. Using a scale from 0 to 10 where 0 is 'Strongly Disagree' and 10 is 'Strongly Agree,' please indicate your level of agreement with the following statements [SCALE 0 to 10; 98=Don't know, 99=Refused]: [Randomize List]

a It's hard to figure out if the extra money we might need to spend on an energy efficient piece of equipment is really worth it.
b It's hard to figure out what the best piece of energy efficient equipment to buy is because of all the technical information we need to find.
c If we had a question about the energy efficient equipment options available to us, we wouldn't know where to find the answer.
d Price is the biggest reason why my company might not buy a high efficiency item.
e It is difficult to get the internal approval we need in order to purchase a piece of energy efficient equipment.

Past Purchases

PP1 In the past three years, have there been any installations of ENERGY EFFICIENT equipment, or other energy efficient upgrades, at this facility?

1 Yes
2 No
8 (Don't know)
9 (Refused)

[SKIP TO PP5 IF PP1=2,8,9]

PP2 What type of energy efficient equipment was installed or upgraded? (IF TOO MUCH DETAIL IS GIVEN, PROMPT FOR MAJOR END-USE CATEGORIES LISTED) [MULTIPLE RESPONSE; UP TO 5]

1 (Lighting)
2 (Heating/Cooling/HVAC)
3 (Motors)
4 (Variable Speed Drives/VSDs)
5 (Refrigeration equipment)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[SKIP TO PP5 IF EP1=4,5]

PP3 What were the reasons for installing energy efficient equipment as opposed to standard efficiency equipment? [MULTIPLE RESPONSE; UP TO 3]

1 (Save energy/save money)
2 (Improve equipment performance)
3 (Benefit from energy efficiency tax credits/incentives)
4 (To be a more "green" company)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[SKIP IF PA2=2,8,9]

PP4 What were your reasons for not participating in the Smart Ideas for Your Business Program? [MULTIPLE CHOICE, UP TO 3]

1 (Wasn't aware of the program at the time)
2 (Didn't have enough information about the program)
3 (Incentives not high enough/not worth the effort)
4 (Cost of energy efficiency equipment)
5 (Program is too complicated/confusing)
00 (Other, specify)
98 (Don't know)
99 (Refused)

PP5 In the past three years, have there been any installations of equipment, or other upgrades, at this facility that were NOT energy efficient?

1 Yes
2 No
8 (Don't know)
9 (Refused)

[SKIP IF PP5=2,8,9 OR EP1=4,5]

PP6 Why didn't you install high efficiency equipment?

1 (Costs more/too much)
2 (Wasn't available)
3 (Was not aware of options)
4 (Purchased used equipment)
5 (Wasn't recommended by contractor/vendor)
00 (Other, specify)
98 (Don't know)
99 (Refused)

[SKIP TO FIRMOGRAPHICS IF EP1=4,5]

PP7 On scale from 0 to 10, where 0 is "not at all" and 10 is "a great deal", to what extent has the current economic downturn adversely affected your investment decisions with respect to purchasing new equipment? [SCALE 0 to 10; 98=Don't know, 99=Refused]

[SKIP if PP7=0]

PP8 And to what extent has the current economic downturn adversely affected your investment decisions with respect to purchasing ENERGY EFFICIENT equipment? Please use the same scale from 0 to 10, where 0 is "not at all" and 10 is "a great deal." [SCALE 0 to 10; 98=Don't know, 99=Refused]

<u>Future Purchases</u>

FP1a Within the next 2 years, do you plan to install any new equipment at this facility?

1 Yes
2 No
3 Maybe
8 (Don't know)
9 (Refused)

[SKIP TO FIRMOGRAPHICS IF FP1a=2,8,9]

FP1b What type of equipment do you plan to install? (IF TOO MUCH DETAIL IS GIVEN, PROMPT FOR MAJOR END-USE CATEGORIES LISTED) [MULTIPLE RESPONSE; UP TO 5]

1 (Lighting)
2 (Heating/Cooling/HVAC)
3 (Motors)
4 (Variable Speed Drives/VSDs)
5 (Refrigeration equipment)
00 (Other, specify)
98 (Don't know)
99 (Refused)

FP2 How likely is it that the equipment you plan to install will be energy efficient? Would you say…

1 Very likely
2 Somewhat likely
3 Not very likely
4 Not at all likely
8 (Don't know)
9 (Refused)

[SKIP TO FIRMOGRAPHICS IF FP2=4,8,9 OR PA2=2,8,9 OR PA3=4,8,9]

FP3a How likely are you to participate in the Smart Ideas for Your Business Program when you install your energy efficient equipment? Would you say you are…

1 Very likely
2 Somewhat likely
3 Not very likely
4 Not at all likely
8 (Don't know)
9 (Refused)

[SKIP IF FP3a=1,2,8,9]

FP3b Why are you not likely to participate in the program? [MULTIPLE RESPONSE, UP TO 3]

1 (Don't have enough information about the program)
2 (Incentives not high enough/not worth the effort)
3 (Cost of energy efficiency equipment)
4 (Program is too complicated/confusing)
00 (Other, specify)
98 (Don't know)
99 (Refused)

FIRMOGRAPHICS

I only have a few general questions left.

F1 What is the business sector of this facility? (PROBE, IF NECESSARY)

1 (K-12 School)
2 (College)
3 (Grocery)
4 (Medical)
5 (Hotel/Motel)
6 (Light Industry)
7 (Heavy Industry)
8 (Office)
9 (Restaurant)
10 (Retail/Service)
11 (Warehouse)
00 (Other, specify)
98 (Don't know)
99 (Refused)

F2 Does your company own or rent this facility?

1 (Own)
2 (Rent)
00 (Other, specify)
98 (Don't know)
99 (Refused)

F4a How old is this facility? [NUMERIC OPEN END, 0 TO 150; 998=Don't know, 999=Refused]

F5a How many employees, full plus part-time, are employed at this facility? [NUMERIC OPEN END, 0 TO 2000; 9998=Don't know, 9999=Refused]

F6 Which of the following best describes your facility? This facility is…

1. my company's only location
2. one of several locations owned by my company
3. the headquarters location of a company with several locations

[SKIP F7 IF F2=2]

F7 In comparison to other companies in your industry, would you describe your company as…

1. A small company
2. A medium-sized company
3. A large company
4. (Not applicable)
8. (Don't know)
9. (Refused)

5.2 *Methodologies and Sampling*

5.2.1 Impact Evaluation Methods

Gross Program Savings

The objective of this element of the impact evaluation is to verify the veracity and accuracy of the PY3 ex ante gross savings estimates in the Prescriptive program tracking system. The savings reported in ComEd's online tracking system was evaluated using the following steps:

3. Engineering review at the measure-level for a sample of 90 project files, with the following subcomponents:
    a. Engineering review and analysis of measure savings based on project documentation, default assumptions, and tracking data.
    b. Review and application (if appropriate) of participant phone survey impact data (reported hours of use, reported baseline equipment, installation in non-air-conditioned space) to projects in the engineering review sample.
    c. On-site verification audits at 36 project sites selected randomly from the sample of 90 projects. Performance measurements included spot measurements and run-time hour data logging for selected measures. On-site data collection was concentrated in the June 1 through August 31 summer peak period.
    d. Calculation of a verified gross savings value (kWh and kW) for each project within the sample, based on measure-level engineering analysis.
4. Carry out a quality control review of the ex post impact estimates and the associated draft site reports and implement any necessary revisions.

A verified gross realization rate (which is the ratio of the ex post gross savings-to-reported tracking savings) was then estimated for the sample, by sampling stratum, and applied to the population of reported tracking savings, using sampling-based approaches that are described in greater detail in Sections 2 and 3 below. The result is an ex post estimate of gross savings for the Prescriptive program.

Engineering Review of Project Files

For each selected project, an in-depth application review is performed to assess the engineering methods, parameters and assumptions used to generate all ex ante impact estimates. For each measure in the sampled project, engineers estimated ex post gross savings based on their review of documentation, consideration of CATI interview response data, and engineering analysis.

To support this review, ComEd provided project documentation in electronic format for each sampled project. Documentation included some or all of scanned files of hardcopy application forms and supporting documentation from the applicant (invoices, measure specification sheets, and vendor proposals), pre-inspection reports and photos (when required), post inspection reports and photos (when conducted), calculation spreadsheets, a project summary report, and important email and memoranda. Where projects covered by the participant phone survey overlapped with the engineering review sample, relevant impact data from the phone survey (reported hours of use, reported baseline equipment, installation in a non-air-conditioned space) was applied to projects.

On-Site Data Collection

On-site surveys were completed for a subset of 36 of the 90 customer applications sampled. For most projects on-site sources include interviews that are completed at the time of the on-site, visual inspection of the systems and equipment, EMS data downloads, spot measurements, and short-term monitoring (e.g., less than four weeks).

An analysis plan is developed for each project selected for on-site data collection. Each plan explains the general gross impact approach used (including monitoring plans), provides an analysis of the current inputs (based on the application and other available sources at that time), and identifies sources that will be used to verify data or obtain newly identified inputs for the ex post gross impact approach.

The engineer assigned to each project first calls to set up an appointment with the customer. During the on-site audit, data identified in the analysis plan is collected, including monitoring records (such as instantaneous spot watt measurements for relevant equipment, measured temperatures, data from equipment logs and EMS/SCADA system downloads), equipment nameplate data, system operation sequences and operating schedules, and, of course, a careful description of site conditions that might contribute to baseline selection.

All engineers who conduct audits are trained and experienced in completing inspections for related types of projects. Each carries properly calibrated equipment required to conduct the planned activities. They check in with the site contact upon arrival at the building, and check out with that same site contact, or a designated alternate, on departure. The on-site audit consists of a combination of interviewing and taking measurements. During the interview, the engineer meets with a building representative who is knowledgeable about the facility's equipment and operation, and asks a series of questions regarding operating schedules, location of equipment, and equipment operating practices. Following this interview, the engineer makes a series of detailed observations and measurements of the building and equipment. All information is recorded and checked for completeness before leaving the site.

Conduct Site-Specific Impact Calculations and Prepare Site Reports

After all of the field data is collected, including any monitoring data, annual energy and demand impacts are developed based on the on-site data, monitoring data, application information, and, in some cases, billing or interval data. Each program engineering analysis is based on calibrated engineering models that make use of hard copy application review and on-site gathered information surrounding the equipment installed through the program (and the operation of those systems).

Energy and demand savings calculations are accomplished using methods that include short-term monitoring-based assessments, simulation modeling (e.g., DOE-2), bin models, application of ASHRAE methods and algorithms, analysis of pre- and post-installation billing and interval data, and other specialized algorithms and models.

For this study, peak hours are defined as non-holiday weekdays between 1:00 PM and 5:00 PM Central Prevailing Time (CPT) from June 1 to August 31. This is in accordance with the PJM manual 18, *Energy Efficiency and Verification*, of March 1, 2010.

Peak demand savings for both baseline and post retrofit conditions are the average demand kW savings for the 1 pm to 5 pm weekday time period. If this energy savings measure is determined to have weather dependency then the peak kW savings are based on the zonal weighted temperature humidity index (WTHI) standard posted by PJM. The zonal WTHI is the mean of the zonal WTHI values on the days in which PJM peak load occurred in the past ten years. This mean WTHI value is 80.4. Demand savings is the difference in kW between the baseline and post retrofit conditions.

After completion of the engineering analysis, a site-specific draft impact evaluation report is prepared that summarizes the M&V plan, the data collected at the site, and all of the calculations and parameters used to estimate savings. Each draft site report underwent senior engineer review and comment, providing feedback to each assigned engineer for revisions or other improvements. Each assigned engineer then revised the draft reports as necessary to produce the final site reports.

Net Program Savings

The primary objective of the net savings analysis for the Prescriptive program was to determine the program's net effect on customers' electricity usage. After gross program impacts have been assessed, net program impacts are derived by estimating a Net-to-Gross (NTG) ratio that quantifies the percentage of the gross program impacts that can be reliably attributed to the program.

For PY3, the net program impacts were quantified from the estimated level of free-ridership. Quantifying free-ridership requires estimating what would have happened in the absence of the

program. A customer self-report method, based on data gathered during participant phone interviews, was used to estimate the free-ridership for this evaluation. The existence of participant spillover was qualitatively examined by identifying spillover candidates through questions asked in the participant telephone interviews. If response data provides sufficient detail to quantify participant spillover, those impacts are estimated.

Once free-ridership and participant spillover has been estimated the Net-to-Gross (NTG) ratio is calculated as follows:

NTG Ratio = 1 – Free-ridership Rate + Participant Spillover

Basic Rigor Free-Ridership Assessment

Free ridership was assessed using a customer self-report approach following a framework that was developed for evaluating net savings of California's 2006-2008 nonresidential energy efficiency programs. This method calculates free-ridership using data collected during participant telephone interviews concerning the following three items:

- A **Timing and Selection** score that reflected the influence of the most important of various program and program-related elements in the customer's decision to select the specific program measure at this time.
- A **Program Influence** score that captured the perceived importance of the program (whether rebate, recommendation, or other program intervention) relative to non-program factors in the decision to implement the specific measure that was eventually adopted or installed. This score is cut in half if they learned about the program after they decided to implement the measures.
- A **No-Program** score that captures the likelihood of various actions the customer might have taken at this time and in the future if the program had not been available. This score accounts for deferred free ridership by incorporating the likelihood that the customer would have installed program-qualifying measures at a later date if the program had not been available.

Each of these scores represents the highest response or the average of several responses given to one or more questions about the decision to install a program measure. The rationale for using the maximum value is to capture the most important element in the participant's decision making. This approach and scoring algorithm is identical to that used by the Ameren Illinois evaluators with the exact same questions.

Standard Rigor Free-Ridership Assessment

For projects that receive greater program funding levels in excess of $50,000, an effort is made during the customer telephone interview to more completely examine project influence sources in order to allow for any analyst-determined adjustments to customer self-reported score calculations using the Basic approach outlined above. Additional survey batteries examine other project decision-making influences including the vendor, ComEd Account Manager, age, and condition of existing equipment, corporate policy for efficiency improvements and so on. Any adjustments made on this basis are carefully documented and the rationale for any adjustments is provided, to ensure their transparency to the reviewer.

In a Standard Rigor Free-Ridership Assessment, program influence through vendor or ComEd Account Manager recommendations is incorporated into the Timing and Selection score, if a follow-up interview has been triggered. The purpose of this additional component is to assess the influence of the program on vendors for programs that are vendor-driven, where the utility has specific outreach and assistance efforts targeting vendors. The Account Manager interview provides insight into multiple points of program influence exerted into large and often complex participating customer organizations. Account Manager interviews were triggered on projects that were managed accounts where the customer had not already assigned a maximum program influence score to one of the other program components.

Triggering of a vendor interview occurs when the interviewee responds as follows:

The respondent identifies that a contractor, engineer, architect, manufacturer, distributor, or supplier:

- was the most influential in identifying and recommending that the respondent install the project completed through the Smart Ideas Program, or
- informed the respondent about the availability of an incentive through ComEd Smart Ideas Program

AND, the respondent rates the importance with a score of 8 or higher for

- Recommendation from an equipment vendor or contractor that helped with the choice of the equipment
- A recommendation from a design or consulting engineer

When triggered, vendors and ComEd Account Managers were interviewed regarding their involvement in the project and the influence of the program in their recommendations to the participant. The NTG interview questions for vendors and Account Managers are provided in Appendix 5.1.2, and are the basis for estimating a Vendor Score and Account Manager Score.

The Vendor Score is the maximum (on a scale of 0 to 10) of the following factors:

1. [Score= response, on scale of 0 to 10] On a scale of 0 to 10 where 0 is NOT AT ALL IMPORTANT and 10 is EXTREMELY IMPORTANT, how important was the PROGRAM, including incentives as well as program services and information, in influencing your decision to recommend that <%CUSTOMER> install the energy efficiency MEASURE at this time?
2. [Score= 10 minus the response, on a scale from 0 to 10] And using a 0 to 10 likelihood scale where 0 is NOT AT ALL LIKELY and 10 is EXTREMELY LIKELY, if the PROGRAM, including incentives as well as program services and information, had not been available, what is the likelihood that you would have recommended this specific MEASURE to <%CUSTOMER>?

The algorithm above provides a score on a scale of 0 to 10, where 10 is associated is with no free-ridership due to program influence. The Account Manager score is assigned by the evaluator based on a qualitative assessment of the influence exerted by the Account Manager. The Vendor Score or Account Manager Score is then factored into the Timing and Selection Score.

The calculation of free-ridership for the Prescriptive program is a multi-step process. The survey covers a battery of questions used to assess net-to-gross ratio for a specific end-use and site.

Responses are used to calculate a Timing and Selection score, a Program Influence score and a No-Program score for each project covered through the survey. These three scores can take values of 0 to 10 where a lower score indicates a higher level of free-ridership. The calculation then averages those three scores to come up with a project-level free-ridership level. If the customer has additional projects at other sites covering the same end-use, the survey asks whether the responses also apply to the other projects. If that is the case, the additional projects are given the same score.

Spillover

For the PY3 Prescriptive program evaluation, a battery of questions was asked to qualitatively assess spillover. Below are paraphrased versions of the spillover questions that were asked:

1. Since your participation in the ComEd program, did you implement any ADDITIONAL energy efficiency measures at this facility that did NOT receive incentives through any utility or government program?
2. What specifically were the measures that you implemented?
3. Why are you not expecting an incentive for these measures?
4. Why did you not install this measure through the ComEd Program?
5. Please describe the SIZE, TYPE, and OTHER ATTRIBUTES of these measures.

6. Please describe the EFFICIENCY of these measures.
7. Please describe the QUANTITY installed of these measures.
8. Were these measures specifically recommended by a program related audit, report or program technical specialist?
9. How significant was your experience in the ComEd Program in your decision to implement this Measure, using a scale of 0 to 10, where 0 is not at all significant and 10 is extremely significant?
10. Why do you give the ComEd program this influence rating?
11. If you had not participated in the ComEd program, how likely is it that your organization would still have implemented this measure, using a 0 to 10, scale where 0 means you definitely WOULD NOT have implemented this measure and 10 means you definitely WOULD have implemented this measure?

Responses to these questions allow us to assess whether spillover may be occurring and the type of equipment involved, but typically do not offer enough detail to quantify the spillover.

NTG Scoring

The net-to-gross scoring approach is summarized in Table 5-1.

Table 5-1. Net-to-Gross Scoring Algorithm for the PY3 Prescriptive Program

Scoring Element	Calculation
Timing and Selection score. The maximum score (scale of 0 to 10 where 0 equals not at all influential and 10 equals very influential) among the self-reported influence level the program had for: A. Availability of the program incentive B. Recommendation from utility program staff person C. Information from utility or program marketing materials D. Endorsement or recommendation by utility account manager E. Other factors (recorded verbatim) F. Information provided through technical assistance received from utility or KEMA field staff G. Vendor Score (when triggered) H. Account Manager Score (when triggered)	Basic Rigor: Maximum of A, B, C, D, and E Standard Rigor: Maximum of A, B, C, D, E, F, G, and H
Program Influence score. "If you were given a TOTAL of 100 points that reflect the importance in your decision to implement the <ENDUSE>, and you had to divide those 100 points between: 1) the program and 2) other factors, how many points would you give to the importance of the PROGRAM?"	Points awarded to the program (divided by 10) Divide by 2 if the customer learned about the program AFTER deciding to implement the measure that was installed

Scoring Element	Calculation
No-Program score. "Using a likelihood scale from 0 to 10, where 0 is "Not at all likely" and 10 is "Extremely likely," if the utility program had not been available, what is the likelihood that you would have installed exactly the same equipment?" The NTG algorithm computes the Likelihood Score as 10 minus the respondent's answer (e.g., the likelihood score will be 0 if extremely likely to install exactly the same equipment if the program had not been available). Adjustments to "Likelihood score" are made for timing: "Without the program, when do you think you would have installed this equipment?" Free-ridership diminishes as the timing of the installation without the program moves further into the future.	Interpolate between Likelihood Score and 10 to obtain the No-Program score, where If "At the same time" or within 6 months then the No Program score equals the Likelihood Score, and if 48 months later then the No Program Score equals 10 (no free-ridership)
Project-level Free-ridership (ranges from 0.00 to 1.00)	1 – Sum of scores (Timing & Selection, Program Influence, No-Program)/30
"Our records show that <COMPANY> also received an incentive from <UTILITY> for a <different end use> project at <same ADDRESS>. Was the decision making process for the <different end use> project the same as for the <ENDUSE> project we have been talking about?"	If participant responds "same decision," assign free-ridership score to other end-uses of the same project
"Our records show that <COMPANY> also received an incentive from <UTILITY> for <number> other <ENDUSE> project(s). Was it a single decision to complete all of those <ENDUSE> projects for which you received an incentive from <UTILITY> or did each project go through its own decision process?"	If participant responds "single decision," assign free-ridership score to same end-use of the additional projects (projects with separate project ID's)
PY3 Project level Net-to-Gross Ratio (ranges from 0.00 to 1.00)	1 – Project level Free-ridership + Project-Level Participant Spillover

5.2.2 Impact Evaluation Sampling

For gross impact evaluation, sampling was conducted in two waves to allow an early start of the impact efforts. The first wave of sampling was conducted on projects with a status of paid in a March 22, 2011 database extract. The second and final wave of sample projects were drawn from the end of year population of projects paid after the March 22 extract. The Prescriptive telephone survey sample for Net-to-Gross estimation was drawn in one wave from a database extract representing the final population of projects.

Profile of Population

Program-level Prescriptive savings data were analyzed by measure type, end-use, business type, and project size to inform the sample design for this population. Table 5-2, Table 5-3, and Table 5-4, and show the population profile analyzed by business type, end-use, and measure. Some "end-uses" reported in the ComEd tracking system relate to programming requirements of the database, so ComEd's "end-uses" were consolidated into measure technology types that align with end uses. For example, ComEd's ice maker "end-use" was combined with refrigeration, while ComEd's "HVAC_VSD" end use was called "ALL VSDs", since Prescriptive incentives now allow for VSD applications that are not HVAC related.

Table 5-2. PY3 Prescriptive Program Participation by Business Type

Business Type	Project Count		Measure Count		Ex Ante kWh Impact Claimed		Ex Ante kW Impact Claimed	
Warehouse	292	8%	713	9%	56,019,530	22%	9,898	19%
Light Industry	404	11%	1,185	15%	46,374,552	18%	11,396	22%
Retail/Service	1,415	37%	2,248	29%	39,017,385	15%	7,832	15%
Office	599	16%	1,328	17%	26,315,976	10%	6,493	12%
Miscellaneous	468	12%	914	12%	26,076,783	10%	4,675	9%
Heavy Industry	156	4%	373	5%	24,774,149	10%	5,890	11%
Medical	103	3%	392	5%	20,740,511	8%	3,201	6%
Grocery	195	5%	286	4%	12,057,843	5%	1,730	3%
Hotel/Motel	33	1%	59	1%	3,397,208	1%	457	1%
College / University	38	1%	83	1%	2,189,815	1%	450	1%
Restaurant	61	2%	125	2%	735,230	0%	123	0%
K-12 School	30	1%	59	1%	686,900	0%	155	0%
TOTAL	**3,794**	**100%**	**7,765**	**100%**	**258,385,882**	**100%**	**52,300**	100%

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

Table 5-3. PY3 Prescriptive Program Participation by Consolidated End-Use Measure Type

Consolidated End-Use Measure Technology Type	Population Measure Count		Ex-Ante Claimed Savings			
			Gross kWh		Gross kW	
LIGHTING	6,320	81%	220,081,626	85%	45,023	86%
ALL VSDs	563	7%	27,586,756	11%	4,292	8%
REFRIGERATION	603	8%	7,132,166	3%	706	1%
HVAC EQUIPMENT	183	2%	3,121,799	1%	2,202	4%
PREMIUM MOTORS	84	1%	400,019	0%	66	0%
FOOD SERVICE	12	0%	63,516	0%	12	0%
Total	7,765	100%	258,385,882	100%	52,300	100%

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

Table 5-4. PY3 Prescriptive Program Participation by Measure Type

Consolidated Measure Type	Measure Count		Meas. With Bonus	Ex Ante kWh Impact Claimed		Ex Ante KW Impact Claimed	
New T5/T8 Fixture	1,095	14.1%	646	110,950,622	42.9%	23,304	44.6%
Delamp (2,3,4,8-foot) with or w/o reflector	1,009	13.0%	769	31,495,368	12.2%	6,946	13.3%
Red. Watt T8 (4′) & HP T8 (4′) Lamp & Bal.	1,301	16.8%	962	25,342,619	9.8%	5,407	10.3%
Daylighting & Occupancy Sensor Controls	813	10.5%	535	22,510,418	8.7%	4,453	8.5%
Red. Watt T8 (4-foot & 8-foot) Lamp Only	253	3.3%	-	8,188,353	3.2%	1,490	2.8%
LED or Induction	473	6.1%	-	7,355,827	2.8%	1,285	2.5%
Exit Signs	553	7.1%	-	5,390,273	2.1%	651	1.2%
Metal Halides (PS or Ceramic)	80	1.0%	-	2,503,189	1.0%	474	0.9%
Hardwired/Screw-in CFLs	83	1.1%	-	1,770,810	0.7%	326	0.6%
2′ & 3′ T8 Lamps & Ballast	336	4.3%	255	1,265,153	0.5%	230	0.4%
Time Clocks for Lighting	23	0.3%	-	1,105,585	0.4%	-	0.0%
Red. Watt T8 (8′) & Ballast	95	1.2%	65	665,424	0.3%	148	0.3%
Cold Cathode	17	0.2%	-	659,392	0.3%	128	0.2%
U-Tube T8 Lamps & Bal.	145	1.9%	94	583,743	0.2%	125	0.2%
Bi-Level Fixtures	7	0.1%	-	236,434	0.1%	48	0.1%
Retro T12 Fixt w/ T5 Lamps & Elec. Bal.	6	0.1%	3	27,275	0.0%	6	0.0%
LED Channel/Open Signs	3	0.0%	-	18,104	0.0%	0	0.0%
Photocells	24	0.3%	-	9,292	0.0%	-	0.0%
Remove 2-foot Lamp and Install Reflector	4	0.1%	-	3,746	0.0%	1	0.0%
Variable Speed Drive Control	563	7.3%	-	27,586,756	10.7%	4,292	8.2%
Heating & Cooling Equip.	176	2.3%	-	2,038,944	0.8%	2,057	3.9%
Hotel Guest Room EMS	7	0.1%	-	1,082,855	0.4%	145	0.3%
Premium Eff. Motors	84	1.1%	-	400,019	0.2%	66	0.1%
EC Motor	143	1.8%	-	2,668,120	1.0%	327	0.6%
Anti-sweat control system	69	0.9%	-	2,330,972	0.9%	41	0.1%
LED Refrig. Case Lighting	353	4.5%	-	1,966,875	0.8%	320	0.6%
Refrigeration Other	38	0.5%	-	166,199	0.1%	19	0.0%
Hot Food Holding Cabinet	12	0.2%	-	63,516	0.0%	12	0.0%
TOTALS	7,765	100%	3,329	258,385,882	100%	52,300	100%

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

Project size was examined using Prescriptive project-level records (based on project ID number). Projects with a status of "paid" were sorted largest to smallest and placed in three

strata using ex ante energy savings to create roughly equal contributions to total program savings. Table 5-5 presents the number of projects by strata, along with ex ante gross energy and peak demand savings claimed.

Table 5-5. PY3 Prescriptive Program Participation by Strata

Strata	Projects	Ex Ante kWh Impact Claimed	Ex Ante kW Impact Claimed
1	139	88,442,741	16,891
2	406	84,575,667	17,540
3	3,249	85,367,474	17,868
TOTAL	**3,794**	**258,385,882**	**52,300**

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

The average PY3 Prescriptive project size is 68,104 kWh and 13.8 kW. This is roughly half the size of the average Prescriptive project in PY2 which was 122,784 kWh and 26.2 kW. Lighting measures dominated PY3 activity on a relative basis, accounting for 85 percent of program reported energy savings, but variable speed drives (VSDs) accounted for 11 percent of the program reported energy savings and HVAC and refrigeration were also represented. Each of ComEd's twelve business types was represented in PY3. Although warehouses, light industry and heavy industry accounted for 50 percent of claimed energy savings, offices and retail/service accounted for a significant 25 percent of energy savings and 53 percent of projects.

Gross Impact M&V Sample

For the PY3 program year, a statistically significant sample based on 90/10 confidence/precision level for program-level savings was drawn for the gross savings verification. Following the approach used in PY1 and PY2, the specific customer projects receiving the impact verification were selected using a stratified ratio estimator technique to ensure that the projects with the largest contribution to program-level kWh were included in the sample. After the initial sample selection (stratified by size), we compared the sample against the program population to check that the sample reasonably represented the population end use distribution.

Sampling was performed in two phases during the PY3 program year. The sample for the first phase was drawn in April 2011 from a March 22, 2011 database extract, and then the sample for the second (final) phase was drawn once the program closed out PY3 application processing in June 2011. Final results were based upon wave 1 and 2 combined.

To improve the accuracy of the verified gross savings estimates, a large portion of the overall sample was selected for an on-site visit. Projects were randomly selected from the sample in each stratum so that a program-level realization rate could be calculated and the confidence and relative precision level could be estimated. The sample size for the on-site visits in PY3 supports

a confidence and relative precision for peak demand reduction in the range of 90/10, based on a one-tail test.

This sampling strategy is designed to provide a solid estimate of program level savings. It was not designed to provide statistically significant results by measure type, building type, or measure end-use category, nor will the field work identify changes to all assumptions feeding the program's engineering algorithms. Evidence from the engineering review and field work that addresses the appropriateness of the savings algorithms and the accuracy of the assumptions feeding those algorithms will be presented.

Some projects contain both Custom and Prescriptive measures (combined projects). The Custom and Prescriptive programs were sampled and evaluated through different approaches by necessity, so the evaluation team included all custom measures within the Custom evaluation, and all prescriptive measures within the Prescriptive evaluation. Site visits and phone surveys were coordinated by assigning combined projects to one evaluation or the other to avoid multiple contacts.

Using the March 22, 2011 extract, paid projects were stratified at tracking record level for projects using the ex ante energy impact claim. Records were sorted from largest to smallest Prescriptive energy claim, and placed into one of three strata such that each contains approximately one-third of the program total kWh claim. The project distribution changed between March 22, 2011 and the year end extract dated July 13, 2011, but the strata boundaries defined using the March 22 extract were preserved for all future gross impact, net impact, and process samples.

The Prescriptive evaluation plan called for a target sample of 90 projects in the ex post gross impact sample to engineering review. This sample was drawn such that an equal number of projects (30 per stratum) were randomly selected for each stratum. Each of the 90 records selected represents just one Prescriptive application which may have multiple measures. A set of 36 projects for the on-site M&V sample were randomly selected from the sample of 90 by strata.

Profile of the Gross Impact M&V Sample

Table 5-6 provides a profile of the gross impact verification sample for the Prescriptive program in comparison with the Prescriptive program population. Shown is the resulting sample that was drawn, consisting of 90 projects, responsible for 26.5 million kWh of ex ante impact claim and representing 10% of the ex ante impact claim for the program population. Also shown are the ex-ante based kWh sample weights for each of three strata.

Table 5-6. Profile of the Gross Impact Sample by Strata

Prescriptive Population Summary				Impact Sample		
Sampling Strata	Number of Projects (N)	Ex Ante kWh Impact Claimed	kWh Weights	n	Ex Ante kWh	Sampled % of Population
1	139	88,442,741	0.342	30	19,205,786	22%
2	406	84,575,667	0.327	30	6,460,074	8%
3	3,249	85,367,474	0.330	30	845,031	1%
TOTAL	**3,794**	**258,385,882**	**1.000**	**90**	**26,510,891**	**10%**

Table 5-7 provides a comparison of the population profile to the sample analyzed by measure technology types that align with end uses. The sample reflects the dominance of lighting, somewhat over-represents variable speed drives, and provides some field M&V for refrigeration, HVAC cooling equipment, and premium efficiency motor measures.

Table 5-7. PY3 Prescriptive Sample End-Use Measure Technology Type Comparison

Consolidated End-Use Measure Technology Type	Ex-Ante Claimed Savings			
	Gross kWh, Population		Gross kWh, Sample	
LIGHTING	220,081,626	85%	21,040,421	79%
ALL VSDs	27,586,756	11%	4,966,909	19%
REFRIGERATION	7,132,166	3%	230,030	1%
HVAC EQUIPMENT	3,121,799	1%	205,560	1%
PREMIUM MOTORS	400,019	0%	67,971	0%
FOOD SERVICE	63,516	0%	0	0%
Total	258,385,882	100%	26,510,891	100%

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

Table 5-8 provides a comparison of the population profile to the sample analyzed by business type. The sample reflects the dominance of warehouses, although they are somewhat over-represented as is medical. Industry is somewhat under-represented, however, the measures in industry and warehouses are commonly new T5/T8 fixtures and occupancy sensors, and both the population and sample have 50 percent of energy savings in these business types.

Table 5-8. PY3 Prescriptive Sample Business Type Comparison

Business Type	Ex-Ante Claimed Savings			
	Gross kWh, Population		Gross kWh, Sample	
Warehouse	56,019,530	22%	9,392,685	35%
Light Industry	46,374,552	18%	3,236,793	12%
Retail/Service	39,017,385	15%	3,871,977	15%
Office	26,315,976	10%	1,807,832	7%
Miscellaneous	26,076,783	10%	1,639,941	6%
Heavy Industry	24,774,149	10%	820,696	3%
Medical	20,740,511	8%	4,834,780	18%
Grocery	12,057,843	5%	534,865	2%
Hotel/Motel	3,397,208	1%	369,886	1%
College / University	2,189,815	1%	-	0%
Restaurant	735,230	0%	1,430	0%
K-12 School	686,900	0%	-	0%
Total	258,385,882	100%	26,510,891	100%

Source: Evaluation analysis of tracking savings from ComEd online tracking system, August 3, 2011.

Table 5-9 provides a profile of the 36 sites selected from the impact sample for on-site M&V.

Table 5-9. Profile of the Gross Impact M&V On-Site Sample by Strata

On-Site Sample				
Sampling Strata	Number of Sites	Business Types	Ex Ante kWh Impact Claimed	Sampled % of Population
1	12	Warehouse, Light Industry, Medical, Retail/Service	7,361,557	8%
2	10	Warehouse, Light Industry, Heavy Industry, Office, Grocery, Miscellaneous, Retail/Service	1,955,561	2%
3	14	Warehouse, Light Industry, Office, Restaurant, Miscellaneous, Retail/Service	535,805	<1%
TOTAL	36		9,852,923	4%

5.2.3 CATI Telephone Survey for Participating Customers

A quantitative telephone survey was implemented with a stratified random sample of Prescriptive Program participants, resulting in 109 completed interviews.

Sampling

To best support estimation of the net-to-gross ratio for the program, a stratified random sampling approach was employed for this survey. Projects were stratified by savings, using the ex ante kWh impacts reported in the tracking database. Records were sorted from largest to smallest kWh claimed, and placed into one of three strata, such that approximately one-third of ex ante savings fell into each stratum.[23]

The sampling unit for the CATI telephone survey was the unique program contact phone number. Overall, there were 1,853 unique phone numbers associated with 3,794 completed projects. Projects associated with duplicate phone numbers were removed from the sample (in cases where a single contact was involved in more than one project application). In general, projects with larger savings and those for which an engineering desk review was performed were retained in the sample. Participants who completed both prescriptive and custom projects were also removed from the sample for the prescriptive survey (given the smaller population of custom projects, the custom program was given priority for calling overlapping project contacts). The resulting sample frame included 1,783 unique phone numbers.

We completed net-to-gross interviews with 109 participants, resulting in a precision level of +/-5% (at a 90% confidence level).[24] We completed process interviews with 104 participants, resulting in a precision level of +/-8% for process questions (at a 90% confidence level).[25,26]

[23] Stratum 1: large savers (>349,580 kWh); Stratum 2: medium savers (between 133,284 and 349,580 kWh); Stratum 3: small savers (<=133,284).
[24] One of the 109 respondents did not answer enough of the net-to-gross questions to be scored.
[25] After reaching the target number of interviews (104), we conducted an additional five impact-only interviews with participants with non-lighting projects. These interviews were added to improve the precision levels for non-lighting net impact estimates.
[26] The difference in precision between net-to-gross questions and process questions is the result of net-to-gross findings being based on savings and process findings being based on respondents. Since larger projects were oversampled, precision levels are slightly higher for net-to-gross results.

Survey Disposition

Table 5-10 below shows the final disposition of the 1,783 contact phone numbers included in the sample frame for the participant survey.[27] Contact with 44% of the sample was attempted at least once, resulting in 109 completed interviews.

Overall the response rate for this survey was 15%, computed as the number of completed interviews divided by the number of eligible respondents.[28]

Table 5-10. Sample Disposition for the Participant Survey

Sample Disposition	Customers	%
Population of Unique Customer Contacts	1,783	
Completed Survey	109	6%
Not Dialed	995	56%
Unable to Reach	271	15%
Callback	263	15%
Refusal	104	6%
Phone Number Issue	36	2%
Knowledgeable Person No Longer There	2	<0.1%
Language Problems	3	<0.1%
Response Rate	*15%*	

Source: ODC CATI Center.

Profile of Survey Respondents

The highest number of survey respondents is from the light industry sector (19%), followed by the warehouse (17%) and office (16%) sectors. Both the warehouse and heavy industry sectors are somewhat overrepresented in the survey, compared to the population. This is not surprising given that the sampling strategy focused on projects with the highest savings, and projects in these sectors tend to be larger than projects in the other sectors.

On the other hand, the retail/service sector is underrepresented in the survey, and the restaurant sector is not represented at all. These two sectors have among the smallest per project savings and were therefore not as heavily targeted in the survey. Overall, however, the

[27] Some unique contacts had to be removed from our sample frame because they also completed projects in the Custom Program.

[28] Eligible respondents include the following dispositions: a) Completed Surveys, b) Unable to Reach, c) Callback, and d) Refusal.

distribution of survey respondents is largely similar to that of the population of PY3 Prescriptive Program participants.

Table 5-11 presents the comparison of business sectors for survey respondents and the overall population of participants.

Table 5-11. Business Sector of Participant Survey Respondents

Sector	Respondents (n=109)	Population* (N=1,783)
Light Industry	19%	19%
Warehouse	17%	13%
Office	16%	17%
Heavy Industry	14%	7%
Retail/Service	8%	19%
Grocery	3%	2%
Medical	2%	3%
Hotel/Motel	2%	1%
K-12 School	2%	1%
College / University	1%	1%
Restaurant	–	2%
Miscellaneous	17%	15%

**Note: The population is based on the sample frame and excludes contact phone numbers that were set aside for the Custom participant survey.*
Source: Program Tracking Database; results of CATI telephone survey.

Survey Weights

Table 5-12 provides a summary of the PY3 population and the completed interviews for the net impact analysis, and presents kWh weights, by stratum. The table shows that the 108 completed interviews represent 10% of ex ante gross program savings.

Table 5-12. Summary of Sampling Approach for Net-to-Gross Analysis

Program Population				Completed Interviews		
Sampling Strata	Number of Applications (N)	Ex Ante kWh Impact Claimed	kWh Weights by Segment	Number of Applications (n)	Ex Ante kWh	% of Population Impacts Surveyed
1	139	88,442,741	0.342	27	15,903,916	18%
2	406	84,575,667	0.327	40	8,143,106	10%
3	3,249	85,367,474	0.330	41	1,833,643	2%
TOTAL	**3,794**	**258,385,882**	**1.000**	**108**	**25,880,665**	**10%**

Source: Program tracking database; results of CATI telephone survey.

For the process analysis, survey weights were developed for the three strata. These weights reflect the fact that not all strata were surveyed in proportion to their representation in the population. The following weights were applied to respondents in the three strata:

Table 5-13. Process Weights

Stratum	Population*	Completes	Weight
1	117	26	0.26
2	308	40	0.45
3	1,365	38	2.09
TOTAL	**1,790**	**104**	

**Note: Survey weights are based on the population of unique contacts rather than unique phone numbers. As a result, the totals differ slightly from the population totals presented above.*

5.2.4 CATI Telephone Survey for Non-Participating Customers

A quantitative telephone survey was implemented with a random sample of business customers who have not participated in the Smart Ideas for Your Business Program in the first three program years. This survey resulted in 70 completed interviews.

Sampling

The sample of non-participants was based on the database of all business customers provided by ComEd. One of the objectives of the Smart Ideas for Your Business Program in PY3 was to generate more large projects. The non-participant survey therefore focused on delivery service classes for customers with medium and large energy demand (including rate classes C29, C30, C31, and C32). Excluded from the sample frame were customers with small energy demand (class C28, <100 kW).

Removing the small class customers resulted in 23,130 records in the sample frame. We also removed from the sample frame 11,272 records associated with customers who participated in the program, or submitted applications, in the first three program years (based on account number, telephone number, or company name). We then randomly selected 1,500 customers for the sample frame. After removing duplicate contacts, our final sample frame consisted of 1,439 unique contacts.

Table 5-14 compares the distribution of all ComEd business customers with the distribution of Smart Ideas for Your Business Program participants, by delivery service class. The table shows that more than 90% of ComEd customers are in the small class, compared with 53% of all participants.

Table 5-14. Summary of Participation in Smart Ideas for Your Business Program

Delivery Service Class	All Customers		Participants	
	Freq.	Percent	Freq.	Percent
C28-Small (0 - 100)	242,041	91%	2,795	53%
C29-Med (100 - 400)	17,478	7%	1,282	24%
C30-Large (400 - 1000)	4,121	2%	758	14%
C31-Very Large (1000 - 10,000)	1,517	1%	453	9%
C32-Extra Large (> 10 MW)	14	<1%	3	<1%
Total	**265,171**		**5,291***	**100%**

**Note: Participants were assigned a delivery service class by matching their account number to the ComEd customer database. Of the 5,902 unique participant account numbers, 611 did not match to the customer database.*
Source: Customer Database; Program tracking databases

Survey Disposition

Table 5-15 below shows the final disposition of the 1,439 unique contacts included in the sample frame for the non-participant survey. Contact with 100% of the sample was attempted at least once, resulting in 70 completed surveys.

Overall the response rate for this survey was 6% computed as the number of completed surveys divided by the number of eligible respondents.[29]

Table 5-15. Sample Disposition for Non-Participant Survey

Sample Disposition	Customers	%
Total Sample	1,439	
Completed Survey	70	5%
Not Dialed	-	-
Unable to Reach	274	19%
Callback	369	26%
Refusal	534	37%
Phone Number Issue	187	13%
Language Problems	5	3%
Response Rate	*6%*	

Source: ODC CATI Center.

[29] Eligible respondents include the following dispositions: a) Completed Surveys, b) Unable to Reach, c) Callback, and d) Refusal.

Profile of Non-Participant Survey Respondents

Surveyed non-participants come from a variety of business sectors. Sixteen percent classify their business as a government/public sector or non-profit entity, 11% as retail/service, and 10% as light industry. A majority of respondents (80%) own their facility. In addition, 44% of the businesses only operate at one location, 43% have several locations, and 10% are located at the headquarters of their company.

5.3 Other Appendices

5.3.1 PY3 Tracking System Default Values Check

The attached spreadsheet identifies measures values that *may* have tracking system entries for default values that differ from documented values.

MEASURE_TYPE	MSR_MODEL_ID	Description 1	Description 2	Description 3	BUS_TYPE_SUB	_SAVINGS_	AVINGS_CO	Match Workpaper?	Additoinal Detail
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	College / University	49.1	0.067	Y	
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	College / University	91.6	0.126	Y	
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	College / University	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	College / University	67.7	0.1	Y	... averaged: 58.3, .1
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	College / University	0	0	Doesn't meet efficiency requirements, therefore 0	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	College / University	67.7	0.1	Y	... averaged: 58.3, .1
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	College / University	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	College / University	50.5	0.079	Y	
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Grocery	87.8	0.068	Y	
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Grocery	163.9	0.128	Y	
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Grocery	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 1
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Grocery	120.5	0.102	N	off by a few, should be 117.2, .105
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Grocery	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Grocery	117.2	0.105	Y	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Grocery	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Grocery	89.7	0.08	Y	
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Heavy Industry	40.4	0.066	Y	
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Heavy Industry	75.5	0.124	Y	
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Heavy Industry	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Heavy Industry	59	0.098	Y	averaged
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Heavy Industry	65.4	0.11	Y?	uses 10 to 20 ton
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Heavy Industry	61.9	0.102	Y?	uses 20 to 60
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Heavy Industry	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Heavy Industry	47.3	0.078	Y	
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Hotel/Motel	87.3	0.07	Y	
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Hotel/Motel	162.9	0.203	Y	
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Hotel/Motel	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Hotel/Motel	118.1	0.104	Y	averaged
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Hotel/Motel	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Hotel/Motel	118.1	0.104	Y	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Hotel/Motel	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Hotel/Motel	86.9	0.083	Y	
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	K-12 School	20.7	0.066	N	should be 27, .085
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	K-12 School	38.6	0.122	Y	
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	K-12 School	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	K-12 School	29.2	0.097	N	should be 27, .085
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	K-12 School	31.3	0.109	N	should be 28.9, .101
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	K-12 School	29.2	0.097	N	should be 28.9, .101
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	K-12 School	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	K-12 School	22.1	0.077	Y	
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Light Industry	41.5	0.068	Y	

Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Light Industry	77.4	0.127	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Light Industry	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Light Industry	61.5	0.101	Y	averaged	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Light Industry	0	0	Doesn't meet efficiency requirements, therefore 0	Doesn't meet efficiency requirements, therefore 0	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Light Industry	61.5	0.101	N	Should be 63.9, .105	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Light Industry	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Light Industry	48.9	0.08	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Medical	96.7	0.068	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Medical	180.5	0.126	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Medical	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Medical	132.2	0.104	Y	averaged	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Medical	126	0.113	N	should be 116.2, .104 (20 to 60 tons)	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Medical	132.2	0.104	N	should be 116.2, .104 (20 to 60 tons)	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Medical	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Medical	88.9	0.08	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Miscellaneous	56.4	0.068	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Miscellaneous	105.2	0.134	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Miscellaneous	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Miscellaneous	78.5	0.101	Y	averaged	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Miscellaneous	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Miscellaneous	78.5	0.101	N	should be 76.8, .105	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Miscellaneous	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 1	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Miscellaneous	58.7	0.08	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Office	41.2	0.07	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Office	76.8	0.13	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Office	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Office	57.2	0.104	Y	averaged (5 to 10 and 10 to 20)	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Office	60.7	0.116	N	this is for 10 to 20 tons	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Office	57.2	0.104	N	should be 56.2, .107	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Office	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Office	42.4	0.082	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Restaurant	54.4	0.068	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Restaurant	101.5	0.126	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Restaurant	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Restaurant	76.9	0.1	Y	averaged (5 to 10 and 10 to 20)	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Restaurant	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Restaurant	76.9	0.1	N	should be 76.7, .104	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Restaurant	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Restaurant	58.7	0.079	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	Retail/Service	65	0.069	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	Retail/Service	121.4	0.128	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Retail/Service	0	0	Doesn't meet efficiency requirements, therefore 0		
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	Retail/Service	88.5	0.102	Y	averaged (5 to 10 and 10 to 20)	
Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Retail/Service	92.3	0.114	N	this is for 10 to 20 tons, should be 90.5, .105	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	Retail/Service	88.5	0.102	N	should be 90.5, .106	there's a trend of 20 to 60 using 10 to 20 and the second 20 to 60 e
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	Retail/Service	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	Retail/Service	69.3	0.081	Y		
Cooling	1	AC Units and Heat Pumps	14 SEER	< 65,000 Btuh (5.42 tons)	WareHouse	36	0.07	Y		
Cooling	2	AC Units and Heat Pumps	15 SEER	< 65,000 Btuh (5.42 tons)	WareHouse	67.1	0.131	Y		
Cooling	3	AC Units and Heat Pumps	11.5 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	WareHouse	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	4	AC Units and Heat Pumps	12 EER	>= 65,000 Btuh (5.42 tons) and < 240,000 Btuh (20 tons)	WareHouse	52.4	0.105	Y	averaged (5 to 10 and 10 to 20)	

Cooling	5	AC Units and Heat Pumps	10.5 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	WareHouse	58	0.117	Y	but using 10 to 20 for 20 to 60 (53.8, .108)	
Cooling	6	AC Units and Heat Pumps	10.8 EER	>= 240,000 Btuh (20 tons) and < 760,000 Btuh (63.33 tons)	WareHouse	52.4	0.105	N	should be 53.8, .108	
Cooling	7	AC Units and Heat Pumps	9.7 EER	>= 760,000 Btuh (63.33 tons)	WareHouse	0	0	Doesn't meet efficiency req	Doesn't meet efficiency requirements, therefore 0	
Cooling	8	AC Units and Heat Pumps	10.2 EER	>= 760,000 Btuh (63.33 tons)	WareHouse	41.1	0.083	Y		
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	College / University	42.3	0.046	N	should be 125.5 and .13	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	College / University	53.8	0.056	N	should be 122.9, .127	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	College / University	103	0.112	N	Should be 251, .26	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	College / University	94.5	0.103	N	Should be 245.8, .225	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Grocery	63	0.055	N	should be 153.6, .14	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Grocery	71.1	0.067	N	should be 150.4, .137	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Grocery	153.4	0.132	N	more inline with tier 1	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Grocery	140.8	0.122	N	should be 300.8, .273	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Heavy Industry	36.3	0.048	N	should be 103.9, .13	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Heavy Industry	44.2	0.06	N	should be 101.8, .127	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Heavy Industry	88.3	0.115	N	should be 207.9, .26	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Heavy Industry	81	0.106	N	should be 203.6, .255	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Hotel/Motel	60.9	0.054	N	should be 175.2, .141	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Hotel/Motel	77.5	0.06	N	should be 171.5, .138	reciprocating
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Hotel/Motel	148.3	0.132	N	should be 350.3, .281	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Hotel/Motel	136.1	0.121	N	should be 343, .275	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	K-12 School	22.4	0.047	N	should be 63.7, .125	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	K-12 School	27.5	0.058	N	should be 62.4, .122	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	K-12 School	54.4	0.113	N	should be 127.4, .25	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	K-12 School	50	0.104	N	should be 124.8, .244	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Light Industry	30	0.052	N	should be 77, .142	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Light Industry	33.4	0.062	N	should be 90.8, .143	reciprocating
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Light Industry	66	0.126	N	should be 153.9, .285	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Light Industry	67	0.116	N	should be 181.5, .285	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Medical	57.2	0.052	N	should be 508.5, .424	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Medical	72.1	0.061	N	should be 166, .138	reciprocating
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Medical	39.2	0.126	N	should be 169.5, .141	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Medical	127.8	0.116	N	should be 331.9, .277	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Miscellaneous	42.7	0.052	N	should be 76, .088	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Miscellaneous	52.8	0.064	N	should be 75.8, .087	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Miscellaneous	101.1	0.127	N	should be 152, .176	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Miscellaneous	93.5	0.121	N	should be 151.6, .174	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Office	31	0.052	N	should be 89, .15	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Office	38.1	0.072	N	should be 87.2, .147	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Office	75.2	0.127	N	should be 178, .3	scroll helical <75
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Office	69.1	0.117	N	should be 174.2, .294	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Restaurant	44.6	0.051	N	should be 127.9, .138	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Restaurant	54.3	0.064	N	should be 125.3, .135	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Restaurant	108.5	0.137	N	should be 255.9, .276	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Restaurant	99.6	0.114	N	should be 250.6, .27	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	Retail/Service	50.4	0.057	N	should be 118.9, .134	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	Retail/Service	66.9	0.082	N	should be 120.3, .132	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	Retail/Service	101.4	0.145	N	should be 237.7, .269	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	Retail/Service	93.9	0.133	N	should be 240.5, .263	
Cooling	11	Air-Cooled Chillers	Level 1	< 150 Tons	WareHouse	31.9	0.056	N	should be 87.3, .134	
Cooling	15	Air-Cooled Chillers	Level 1	>= 150 Tons	WareHouse	41.7	0.065	N	should be 89.6, .132	
Cooling	16	Air-Cooled Chillers	Level 2	< 150 Tons	WareHouse	73.8	0.126	N	should be 174.5, .267	
Cooling	17	Air-Cooled Chillers	Level 2	>= 150 Tons	WareHouse	69.4	0.174	N	should be 179.3, .263	
Refrigeration	2	Anti-sweat control system			College / University	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Community College	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Grocery	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Heavy Industry	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Hotel/Motel	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			K-12 School	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Light Industry	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Medical	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Miscellaneous	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Office	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Restaurant	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			Retail/Service	402	0.007	Y		
Refrigeration	2	Anti-sweat control system			WareHouse	402	0.007	Y		
Other	2	Combination Oven			Restaurant	18432	4.21	Y		
Refrigeration	12	Door Closer - Main Cooler			College / University	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			Community College	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			Grocery	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			Heavy Industry	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			Hotel/Motel	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			K-12 School	943	0.137	Y		
Refrigeration	12	Door Closer - Main Cooler			Light Industry	943	0.137	Y		

these are out of order by size and type of ac measure
see white text for examples

Refrigeration	12	Door Closer - Main Cooler			Medical	943	0.137	Y	
Refrigeration	12	Door Closer - Main Cooler			Miscellaneous	943	0.137	Y	
Refrigeration	12	Door Closer - Main Cooler			Office	943	0.137	Y	
Refrigeration	12	Door Closer - Main Cooler			Restaurant	943	0.137	Y	
Refrigeration	12	Door Closer - Main Cooler			Retail/Service	943	0.137	Y	
Refrigeration	12	Door Closer - Main Cooler			WareHouse	943	0.137	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			College / University	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Community College	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Grocery	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Heavy Industry	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Hotel/Motel	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			K-12 School	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Light Industry	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Medical	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Miscellaneous	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Office	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Restaurant	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			Retail/Service	2307	0.309	Y	
Refrigeration	6	Door Closer - Walk-in Freezer			WareHouse	2307	0.309	Y	
Refrigeration	4	EC motor Reach-In			College / University	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Community College	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Grocery	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Heavy Industry	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Hotel/Motel	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			K-12 School	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Light Industry	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Medical	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Miscellaneous	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Office	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Restaurant	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			Retail/Service	344	0.033	Y	
Refrigeration	4	EC motor Reach-In			WareHouse	344	0.033	Y	
Refrigeration	3	EC Motor Walkin			College / University	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Community College	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Grocery	392	0.051	Y	
Refrigeration	3	EC Motor Walkin			Heavy Industry	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Hotel/Motel	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			K-12 School	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Light Industry	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Medical	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Miscellaneous	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Office	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			Restaurant	411	0.033	Y	
Refrigeration	3	EC Motor Walkin			Retail/Service	401	0.042	Y	
Refrigeration	3	EC Motor Walkin			WareHouse	401	0.042	Y	
Refrigeration	8	ENERGY STAR Vending Machine			College / University	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Community College	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Grocery	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Heavy Industry	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Hotel/Motel	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			K-12 School	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Light Industry	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Medical	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Miscellaneous	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Office	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Restaurant	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			Retail/Service	1576	0	Y	
Refrigeration	8	ENERGY STAR Vending Machine			WareHouse	1576	0	Y	
Refrigeration	5	Evaporator Fan Control			College / University	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Community College	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Grocery	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Heavy Industry	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Hotel/Motel	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			K-12 School	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Light Industry	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Medical	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Miscellaneous	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Office	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Restaurant	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			Retail/Service	478	0.06	Y	
Refrigeration	5	Evaporator Fan Control			WareHouse	478	0.06	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			College / University	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Community College	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Grocery	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Heavy Industry	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Hotel/Motel	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			K-12 School	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Light Industry	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Medical	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Miscellaneous	0	0	Y	

Refrigeration	15	Freezer/Cooler Door Gaskets			Office	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Restaurant	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			Retail/Service	0	0	Y	
Refrigeration	15	Freezer/Cooler Door Gaskets			WareHouse	0	0	Y	
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			College / University	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Community College	5293	0.676	N	should be 3358, .383
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Grocery	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Heavy Industry	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Hotel/Motel	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			K-12 School	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Light Industry	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Medical	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Miscellaneous	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Office	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Restaurant	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			Retail/Service	3357	0.838	N	should be .383 KW
Refrigeration	14	Glass Door Freezer, ENERGY STARtm			WareHouse	3357	0.838	N	should be .383 KW
Other	3	Hot Food Holding Cabinet			Restaurant	5293	0.97	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			College / University	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Community College	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Grocery	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Heavy Industry	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Hotel/Motel	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			K-12 School	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Light Industry	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Medical	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Miscellaneous	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Office	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Restaurant	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			Retail/Service	1117	0.084	Y	
Cooling	8	Hotel Guest Room Energy Management System (Electric Heat/AC)			WareHouse	1117	0.084	Y	
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			College / University	334	0.084	Y	
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Community College	334	0.084	Y	
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Grocery	334	0.084	Y	

Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Heavy Industry	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Hotel/Motel	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			K-12 School	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Light Industry	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Medical	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Miscellaneous	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Office	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Restaurant	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			Retail/Service	334	0.084	Y								
Cooling	9	Hotel Guest Room Energy Management System (Non-Electric Heat/AC)			WareHouse	334	0.084	Y								
Refrigeration	10	LED Refrigerated Case Lighting			College / University	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Community College	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Grocery	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Heavy Industry	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Hotel/Motel	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			K-12 School	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Light Industry	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Medical	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Miscellaneous	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Office	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Restaurant	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			Retail/Service	375	0.061	Y								
Refrigeration	10	LED Refrigerated Case Lighting			WareHouse	375	0.061	Y								
Other	19	Network PC Management Software			College / University	200	0	Y								
Other	19	Network PC Management Software			K-12 School	200	0	Y								
Other	19	Network PC Management Software			Office	200	0	Y								
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	College / University	56.6	0.048	?		Centrifugal	≥ 600	College/University	1	0.048	56.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Grocery	89.6	0.058	?	they	Centrifugal	≥ 600	Grocery	1	0.058	89.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Heavy Industry	54.3	0.053	?	used	Centrifugal	≥ 600	Heavy Industry	1	0.053	54.3	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Hotel/Motel	81.6	0.063	?	chiller	Centrifugal	≥ 600	Hotel/Motel	1	0.063	81.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	K-12 School	30.1	0.5	?	measure	Centrifugal	≥ 600	School (K-12)	1	0.05	30.1	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Light Industry	45.8	0.054	?	savings...	Centrifugal	≥ 600	Light Industry	1	0.054	45.8	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Medical	71.3	0.053	?		Centrifugal	≥ 600	Medical	1	0.053	71.3	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Miscellaneous	57.5	0.054	?	see page 120 of report	Centrifugal	≥ 600	Miscellaneous	1	0.054	57.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Office	35.6	0.055	?		Centrifugal	≥ 600	Office	1	0.055	35.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Restaurant	69.9	0.053	?	Should be	Centrifugal	≥ 600	Restaurant	1	0.053	69.9	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	Retail/Service	57.6	0.05	?	PTAC #'s?	Centrifugal	≥ 600	Retail/Service	1	0.05	57.6	
Cooling	14	PTAC	13.08 - (0.2556 X Btuh/1000) EER	ALL	WareHouse	40.7	0.057	?		Centrifugal	≥ 600	Warehouse	1	0.057	40.7	
Refrigeration	11	Refrigeration Economizer			College / University	1135	0.385	?	Not in workbook?							
Refrigeration	11	Refrigeration Economizer			Grocery	1135	0.385	?	Not in workbook?							
Refrigeration	11	Refrigeration Economizer			Heavy Industry	1135	0.385	?	Not in workbook?							
Refrigeration	11	Refrigeration Economizer			Hotel/Motel	1135	0.385	?	Not in workbook?							
Refrigeration	11	Refrigeration Economizer			K-12 School	1135	0.385	?	Not in workbook?							
Refrigeration	11	Refrigeration Economizer			Light Industry	1135	0.385	?	Not in workbook?							

Refrigeration	11	Refrigeration Economizer			Medical	1135	0.385	?	Not in workbook?
Refrigeration	11	Refrigeration Economizer			Miscellaneous	1135	0.385	?	Not in workbook?
Refrigeration	11	Refrigeration Economizer			Office	1135	0.385	?	Not in workbook?
Refrigeration	11	Refrigeration Economizer			Restaurant	1135	0.385	?	Not in workbook?
Refrigeration	11	Refrigeration Economizer			Retail/Service	1135	0.385	?	Not in workbook?
Refrigeration	11	Refrigeration Economizer			WareHouse	1135	0.385	?	Not in workbook?
Cooling	12	Room A/C	Level 1	ALL	College / University	87.7	0.075	?	
Cooling	13	Room A/C	Level 2	ALL	College / University	67.1	0.057	?	
Cooling	12	Room A/C	Level 1	ALL	Grocery	138.8	0.087	?	They use values from
Cooling	13	Room A/C	Level 2	ALL	Grocery	106.2	0.068	?	the chiller set...
Cooling	12	Room A/C	Level 1	ALL	Heavy Industry	84	0.082	?	
Cooling	13	Room A/C	Level 2	ALL	Heavy Industry	64.3	0.063	?	
Cooling	12	Room A/C	Level 1	ALL	Hotel/Motel	126.4	0.098	?	
Cooling	13	Room A/C	Level 2	ALL	Hotel/Motel	96.7	0.075	?	
Cooling	12	Room A/C	Level 1	ALL	K-12 School	46.8	0.078	?	
Cooling	13	Room A/C	Level 2	ALL	K-12 School	35.7	0.06	?	
Cooling	12	Room A/C	Level 1	ALL	Light Industry	64.2	0.083	?	
Cooling	13	Room A/C	Level 2	ALL	Light Industry	54.3	0.064	?	
Cooling	12	Room A/C	Level 1	ALL	Medical	110.4	0.082	?	
Cooling	13	Room A/C	Level 2	ALL	Medical	84.5	0.063	?	
Cooling	12	Room A/C	Level 1	ALL	Miscellaneous	87.5	0.088	?	
Cooling	13	Room A/C	Level 2	ALL	Miscellaneous	68.2	0.064	?	
Cooling	12	Room A/C	Level 1	ALL	Office	55.3	0.085	?	
Cooling	13	Room A/C	Level 2	ALL	Office	42.2	0.065	?	
Cooling	12	Room A/C	Level 1	ALL	Restaurant	108.2	0.082	?	
Cooling	13	Room A/C	Level 2	ALL	Restaurant	82.9	0.063	?	
Cooling	12	Room A/C	Level 1	ALL	Retail/Service	82.5	0.078	?	
Cooling	13	Room A/C	Level 2	ALL	Retail/Service	68.2	0.06	?	
Cooling	12	Room A/C	Level 1	ALL	WareHouse	57.7	0.142	?	
Cooling	13	Room A/C	Level 2	ALL	WareHouse	48.2	0.067	?	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			College / University	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Community College	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Grocery	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Heavy Industry	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Hotel/Motel	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			K-12 School	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Light Industry	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Medical	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Miscellaneous	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Office	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Restaurant	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			Retail/Service	1486	0.17	Y	
Refrigeration	13	Solid Door Freezers - ENERGY STAR			WareHouse	1486	0.17	Y	
Other	1	Steam Cooker			Restaurant	4419	1	Y	
Refrigeration	1	Strip Curtains			College / University	139	0.01	Y	
Refrigeration	1	Strip Curtains			Community College	139	0.01	Y	
Refrigeration	1	Strip Curtains			Grocery	125	0.007	Y	
Refrigeration	1	Strip Curtains			Heavy Industry	139	0.01	Y	
Refrigeration	1	Strip Curtains			Hotel/Motel	139	0.01	Y	
Refrigeration	1	Strip Curtains			K-12 School	139	0.01	Y	
Refrigeration	1	Strip Curtains			Light Industry	139	0.01	Y	
Refrigeration	1	Strip Curtains			Medical	139	0.01	Y	
Refrigeration	1	Strip Curtains			Miscellaneous	139	0.01	Y	
Refrigeration	1	Strip Curtains			Office	139	0.01	Y	
Refrigeration	1	Strip Curtains			Restaurant	152	0.012	Y	
Refrigeration	1	Strip Curtains			Retail/Service	139	0.01	Y	
Refrigeration	1	Strip Curtains			WareHouse	139	0.01	Y	
Refrigeration	7	Vending Controllers Beverage			College / University	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Community College	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Grocery	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Heavy Industry	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Hotel/Motel	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			K-12 School	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Light Industry	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Medical	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Miscellaneous	1612	0	Y	
Refrigeration	7	Vending Controllers Beverage			Office	1612	0	Y	

Refrigeration	7	Vending Controllers Beverage			Restaurant	1612	0	Y		
Refrigeration	7	Vending Controllers Beverage			Retail/Service	1612	0	Y		
Refrigeration	7	Vending Controllers Beverage			WareHouse	1612	0	Y		
Refrigeration	9	Vending Controllers Snacks			College / University	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Community College	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Grocery	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Heavy Industry	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Hotel/Motel	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			K-12 School	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Light Industry	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Medical	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Miscellaneous	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Office	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Restaurant	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			Retail/Service	387	0	Y		
Refrigeration	9	Vending Controllers Snacks			WareHouse	387	0	Y		
Cooling	9	Water-Cooled Chillers	Level 1	ALL	College / University	53	0.057	?	This is the value for Scroll or helical rotary <75 tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	College / University	48.5	0.053	N?	This is the value for Scroll or helical rotary 150-299 tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Grocery	78.8	0.057	Y?	scroll or helical rotary, <75, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Grocery	72.2	0.063	Y?	150-299 scroll helical, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Heavy Industry	45.4	0.059	Y?	<75, scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Heavy Industry	41.6	0.054	N?	this is the value for 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Hotel/Motel	76.3	0.068	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Hotel/Motel	69.9	0.062	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	K-12 School	28	0.058	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	K-12 School	25.6	0.053	N?	scroll helical 150-299, tier 1	notice trend
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Light Industry	34	0.065	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Light Industry	34.4	0.06	N?	scroll helical 150-299, tier 1	why labeled "ALL"?
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Medical	71.6	0.065	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Medical	65.5	0.059	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Miscellaneous	52	0.065	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Miscellaneous	48	0.06	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Office	38.7	0.065	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Office	35.4	0.06	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Restaurant	55.8	0.077	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Restaurant	51.1	0.058	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	Retail/Service	52.1	0.063	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	Retail/Service	48.2	0.083	N?	scroll helical 150-299, tier 1	
Cooling	9	Water-Cooled Chillers	Level 1	ALL	WareHouse	38	0.065	Y?	<75 scroll, tier 1	
Cooling	10	Water-Cooled Chillers	Level 2	ALL	WareHouse	35.6	0.059	N?	scroll helical 150-299, tier 1	

5.4 *Midstream Incentive Pilot Program Evaluation*

5.4.1 Evaluation Objectives

The goal of this report is to present a summary of the findings and results from the evaluation of the Program Year 3 Midstream Incentive Pilot program[30]. The primary objectives of this evaluation are to quantify gross and net impacts and to determine key process-related program strengths and weaknesses and identify ways in which the program can be improved.

5.4.2 Program Overview

The pilot was designed to provide an expedited, simple solution to business customers interested in purchasing efficient lighting. Screw-based CFLs were offered to ComEd business customers at an instant discount at the point of sale. The program launched in October of 2010, but program staff noted that the bulk of activity did not begin until February of 2011.

The program targeted distributors that have a heavy end-use customer base as opposed to those mostly selling to contractors.[31] Manufacturers were paramount in helping program staff identify distributors with large commercial customer bases. By the end of PY3, 12 distributors had signed up as partners with the program. However, only four partners sold program bulbs invoiced in PY3.

5.4.3 Evaluation Methods

This section describes the analytic methods and data collection activities implemented as part of the PY3 process and impact evaluation of the Midstream Incentive Pilot program, including the data sources and sampling used as a base for the data collection activities.

Impact Evaluation Methods

The key impact evaluation activities were:

[30] The Program Year 3 (PY3) program year began June 1, 2010 and ended May 31, 2011. The Midstream Incentive Pilot Program did not become open to end-user purchases until January 2011.
[31] Towards the end of PY3, the program was opened to allow sales to contractors in addition to end-use customers.

- Reviewed program activity tracking data from the implementation contractor that identified distributor, type and quantity of products sold, purchase dates, business name and address of purchaser, and implementation contractor invoicing detail.[32]

- Reviewed the default impact values for hours of use and watts reduced by CFL wattage proposed by ComEd for use in developing an ex ante impacts, to be used in place of the implementation contractor estimate.[33]

- Analyzed CFL sales data.

- Generated ex ante and ex post estimates for gross and net impacts for all PY3 participant sales.

Process Evaluation Methods

Three research activities were planned in support of the process evaluation of the Midstream Incentive Lighting Pilot:

- **Interview with implementation staff:** The evaluation team conducted one call with staff at APT responsible for the Midstream pilot implementation. This call took place in August of 2011 and covered program design, participation, and key challenges.

- **Interviews with Participating Distributors:** We conducted two interviews with participating distributors involved in the Midstream incentive pilot. The interviews took place in September and October of 2011 and focused on program challenges and successes.

- **Interviews with End-User of Midstream-Incented CFLs:** The evaluation team planned to conduct interviews with end-users, covering topics such as awareness of the program and the incentive, promotion by distributors, and an assessment of free-ridership. However, program tracking data only included company name and address and did not include contact name and phone number. Despite efforts to compile contact information from public data sources, the evaluation team was unable to reach end-users to conduct these interviews.

Profile of Participation

Program-level participation data were analyzed for all purchases in PY3. In all, 121 transaction records were recorded in PY3, with each transaction representing a distributor sale to an end-

[32] Data provided by email communication from David Nichols, August 12, 2011.
[33] Data provided by email communication from David Nichols, August 12, 2011.

user. The first purchase date is January 3, 2011, and the final purchase date for PY3 is May 31, 2011. Sales of products are identified by CFL model number, and each is designated as Standard, Specialty, or High Wattage that are associated with different payment levels. The typical Specialty bulb was a dimmable CFL reflector, globe lamp, or PAR lamp. The high wattage bulbs in PY3 included only 42 watt CFLs that were included in the tracking data in the category of standard, but the program has tracking placeholders for CFL models up to 105 watts.

Table 5-16, Table 5-17, Table 5-18 and Table 5-19, show the population profile analyzed by distributor, transaction, and CFL type.

Table 5-16. PY3 Midstream Incentive Program Distributor Participation

Distributor	Transaction Count		CFL Sales	
Distributor A	68	56%	1,368	27%
Distributor B	29	24%	1,617	32%
Distributor C	18	15%	1,256	25%
Distributor D	6	5%	861	17%
Total	121	100%	5,102	100%

Source: Evaluation analysis of tracking data provided by ComEd, August 12, 2011.

Table 5-17. PY3 Midstream Incentive Transactions

Transaction Data	CFLs Purchased	Payment
Largest Transaction	650	$650.00
Smallest Transaction	1	$1.00
Average Transaction	42	$58.56
Total	5,102	$7,085.24

Source: Evaluation analysis of tracking data provided by ComEd, August 12, 2011.

Table 5-18. PY3 Midstream Incentive CFL Sales by CFL Wattage

CFL Wattage	CFL Sales	
5	61	1%
7	11	0%
10	292	6%
11	6	0%
14	360	7%
15	2,655	52%
16	129	3%
20	499	10%
23	384	8%
26	650	13%
42	55	1%
Total	5,102	100%

Source: Evaluation analysis of tracking data provided by ComEd, August 12, 2011.

Table 5-19. PY3 Midstream Incentive CFL Types

CFL Type	CFL Sales	
Specialty	929	18%
Standard	4,173	82%
Total	5,102	100%

Source: Evaluation analysis of tracking data provided by ComEd, August 12, 2011. Standard CFLs include 55 "high wattage" types.

5.4.4 Impact Evaluation Findings

Evaluation of impacts consisted of the following tasks:

- Reviewing tracking data to assess reasonableness
- Identify appropriate default values for gross impact evaluation
- Apply default values to tracking data to estimate ex post gross impacts
- Apply net-to-gross ratios to determine evaluation estimated net savings

Tracking Data Review

The tracking data provided by ComEd on August 12, 2011 was reviewed for reasonableness. Each of the 121 transaction records was reviewed and were found to contain reasonable quantities purchased, had purchase dates that were during PY3, and had participant addresses that were located within ComEd service territory. The company names of purchasers suggested a general mix of C&I business types, including small and large retail, hotel, university, industrial, and realty/property management firms.

ComEd and the implementation contractor informed the evaluation team that contact person names and telephone numbers were not available for purchasers. The evaluation team attempted to contact businesses via public data sources through a search by address and company name. Although contact was made with some businesses, we were unable to complete brief interviews. The tracking data, although reasonable, was not verified with end-users. The evaluation team was able to interview two distributors.

The tracking data provided manufacturer and model numbers for CFL sales. The evaluation team checked each model and concluded that claimed CFL installed wattages were consistent with CFL descriptions.

The evaluation team concluded that the Midstream Incentive Pilot program claim of 5,102 CFL units sold in PY3 to ComEd business customers, at the quantities and wattages noted in the tracking system, is reasonable.

Default Values Review and Ex Post Impact Parameters

ComEd provided default values that allowed the evaluation team to estimate ex ante energy impacts from tracking data.[34] These are provided in Table 5-20. ComEd did not provide a peak demand reduction estimate.

[34] Email communication from David Nichols, August 12, 2011.

Table 5-20. ComEd Default Impacts for PY3 Midstream Incentives

CFL Wattage	Incandescent Replacement Wattage	Delta Watts Reduced	Annual kWh Savings per CFL
5	25	20	86.14
7	25	18	77.53
10	40	30	129.21
11	40	29	124.9
14	60	46	198.12
15	60	45	193.82
16	60	44	189.51
20	75	55	236.89
23	100	77	331.64
26	100	74	318.72
42	150	108	465.16

Source: Data provided by ComEd, August 12, 2011.

ComEd indicated that the basis for their energy impacts was to use the Prescriptive program defaults for the average or "Miscellaneous" building type. We conclude that is reasonable, based on the business types suggested by the tracking data. The PY3 default for CFLs installed in Miscellaneous building types is 4,321 hours of operation, or about 11.8 hours per day, 365 days per year. ComEd does not include HVAC interaction factors for energy impacts or delta watts reduced. For estimating ex post gross impacts, the evaluation team uses the assumptions provided in ComEd's PY3 Business Prescriptive workpapers, summarized below.

Table 5-21. Ex Post Default Assumptions

Assumption	Value
Building Type	Miscellaneous
Measure Type	CFL
Annual Hours of Use	4,321
Energy Interactive Factor	1.12
Coincident-Diversity Factor	0.77
Demand Interactive Factor	1.19

Source: ComEd Workpapers 6-1-10.doc

The evaluation team concludes it is reasonable to use the PY3 assumptions for CFL lighting in the Miscellaneous building type to estimate ex post impacts for the Midstream CFLs, and to include HVAC interaction factors for energy and demand. For estimating delta watts reduced, we use a method consistent with the PY3 ComEd Residential Lighting program evaluation that bases watts reduced on lumen equivalency of an incandescent lamp for the specific CFL model identified in the tracking data. The lumen equivalency table is provided below.

Table 5-22. Lumen Output to Base Wattage Mapping

Lumen Range	Incandescent Base Wattage
0 - 313	25
314 - 648	40
649 - 1016	60
1017 - 1437	75
1438 - 2207	100
2208 - 3297	150
> = 3298	200

Source: Navigant Consulting Team Analysis

In calculating default values, ComEd makes the assumption that all CFLs purchased are installed within the program year. The PY3 evaluation has found, as shown in Table 3-1, that lighting equipment purchased for businesses is not placed in storage. It is possible however that some of the CFL units purchased through this Pilot were not installed by May 31, 2011, but we could not confirm this with end users. We conclude it is reasonable to use the Business

Prescriptive assumption of a 100% in-service rate for the Midstream Pilot program, but this assumption should be checked in future evaluations.

ComEd did not provide an estimate for a net-to-gross ratio of Midstream Incentive pilot CFL sales. The evaluation team attempted to gather free-ridership information from purchasing end-user interviews, however, we were not successful in reaching the end-users. For PY3, the evaluation will assume that the general NTG ratio for lighting measures in the PY3 Prescriptive program provides a reasonable estimate. The value for lighting measures is 0.74, as shown in Table 3-13 of this report.

Gross and Net Impacts and Conclusions

Based on the assumptions outlined above, the evaluation team provides the following estimate of gross and net impacts for the Midstream Incentive Pilot program.

Table 5-23. Gross and Net Impact Analysis

Wattage	Sales	Ex Ante Peak kW	Ex Ante kWh	Ex Post Peak kW	Ex Post kWh	Ex Post kWh %
5	61	NA	5,255	1	5,904	0%
7	11	NA	853	0	1,757	0%
10	292	NA	37,729	8	42,394	3%
11	6	NA	749	0	842	0%
14	360	NA	71,323	15	80,142	6%
15	2,655	NA	514,592	109	578,202	46%
16	129	NA	24,447	5	27,469	2%
20	499	NA	118,208	23	122,803	10%
23	384	NA	127,350	27	141,643	11%
26	650	NA	207,168	41	216,206	17%
42	55	NA	25,584	5	28,747	2%
Total Gross	**5,102**	NA	**1,133,258**	**236**	**1,246,109**	**100%**
			Gross Realization Rate	**NA**	**1.10**	
			NTG Ratio	**0.74**	**0.74**	
			Net Savings	**173**	**916,159**	

The gross impact realization rate for energy is 1.10, which is higher than ComEd due to the inclusion by the evaluation analysis of an energy interaction factor with the HVAC system. ComEd did not provide an ex ante estimate for peak demand, so we could not estimate a gross

impact realization rate on peak demand. The evaluation analysis method of calculating demand reduction for each CFL model resulted in a total connected load reduction of 257 kW for the Midstream program, compared with a value of 263 kW total connected load reduction from ComEd's delta watts assumptions, for a ratio of 0.98. This is due to minor differences in assumed incandescent wattage replaced, where the evaluation team used actual lumen values from product literature for specific CFL model numbers to select an incandescent base wattage.

The evaluation team recommends that ComEd include HVAC interaction factors for energy and peak demand when calculating impacts for CFLs installed through the Midstream program. If additional measures are added to the Midstream delivery approach, ComEd should consider including HVAC interaction factors, depending on the measure type.

5.4.5 Key Process Findings

Based on program materials, marketing tactics included point-of-purchase materials for distributors and sales tools and talking points for partner distributors. Both interviewed distributors received marketing collateral from ComEd and used it to promote the benefits of CFLs and the Midstream incentive to qualified customers.

Interviews with implementation staff show that the Midstream pilot faced several challenges in its original design. Staff noted that it was very difficult to recruit distributors to partner with the program for a variety of reasons. Many distributors were reluctant to participate in a markdown program because their sales representatives were worried about the negative effects on their sales margin of selling discounted bulbs. Additionally, implementation staff noted that the sales tracking systems of many distributors were not compatible with the program requirements:

> *"Of course, the reporting and sales tracking systems at the majority of MRO partners weren't compatible to allow instant rebates to select customers. Because it's just for non-governmental ComEd customers, it was challenging for them to set up their system to target just those select customers."*

One interviewed distributor, who was active in the program in PY3, did not encounter any major challenges in participating. One hurdle was *"the backroom paperwork."* However, the other interviewed distributor noted that they had to go back and forth with their manufacturer in order to work out a system that could overcome the pricing issues. Given the challenges facing several large distributors, program staff noted recruitment required extensive outreach efforts.

Both interviewed contractors indicated that the program was not as effective in increasing CFL sales as they had hoped. While one found that that the markdown motivated a few of his customers to change their orders from incandescent bulbs to CFLs, he felt that, in general, the discounts offered by ComEd were not sufficient to induce customers to purchase the CFLs. The other interviewed distributor found that since most of his customers have standard purchasing

contracts, many of the customers that took advantage of the markdown were already purchasing CFLs anyway. In his words: *"why lower the price or change the price if it's already on the contract?"*

Although both interviewed distributors were disappointed that the Midstream incentive pilot did not generate the sales they had hoped for, they both indicated that they are continuing to participate in PY4. One suggested that the program should increase eligible lighting measures to include pin-based fluorescents and LED lighting, noting that screw-based CFLs are a very small part of their total sales.