IMPACT AND PROCESS EVALUATION OF NORTHWESTERN ENERGY 2007-11 DEMAND SIDE MANAGEMENT PROGRAMS – SUPPLEMENTAL DOCUMENTATION

Submitted to

NORTHWESTERN ENERGY
BUTTE, MONTANA

Submitted by

SBW CONSULTING, INC.
Bellevue, Washington

In association with

RESEARCH INTO ACTION, INC.
Portland, Oregon

NEW HORIZON TECHNOLOGIES, INC.
Butte, Montana

RIDGE & ASSOCIATES
San Francisco, California

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sbw
ENERGY + WATER + EFFICIENCY

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1. TELEPHONE SURVEYS

1.1. Participant Surveys

1.1.1. Residential Participant Survey (Exclusive of Renewables)

1.1.1.1. Survey Context

The participant records will indicate the program participated in with a formal name ("long program name") and a shorter name ("short name") as shown in the next table. The survey does not use the long program name. It uses the short name to drive skip patterns.

CATI needs to create a new variable "sample type," as shown in the table. The survey uses sample type to drive skip patterns.

CATI needs to create a new variable "program name." These are noun phrases that are piped into the survey when the surveyor needs to refer to the program, such as in the introduction: "have you listed as receiving a/an [program name] [e.g., in-home audit]."

1.1.1.1.1. CATI Instructions to SRBI

- If customers should want a contact at NorthWestern Energy to verify the validity of the research effort, please have them call the NorthWestern Energy Customer Care Contact Center, 888-467-2669 preferably M-F between 7 a.m. and 6 p.m.
- When loading the sample frame, include these variables:
  - Long Program Name
  - Program Name (for SRBI pipe in)
  - Sample Type_SRBI
  - MeasureType

    Kitmeasures are listed in 9 columns with a "1" indicator if the measures was installed per each record

    LowFlow_Shower_Head

    Window_Shrink_Wrap

    Door_Weather_Stripping

    Door_Sweep

    Foam_CoverPlate_Gaskets

    Insulating_Spray_Foam

    Kitchen_Aerator

    BathroomAerator

Programable_Thermostat

- SRBI_ResDI_Installed is a text field in the dataset that lists the DI measures during audit) Limit 72 characters.
- Sample file includes a text field that lists direct-installed measures: "SRBI_Res_Installed1." This field can be used by SRBI to create an indicator field called "DI_ONSITE" then set DI_Onsite to 1. Pipe in "SRBI_RES_INSTALLED1" test and read by ITRVR]
- Non-Equipment Measures (binary, that is 0 or 1) – SBW created a new var based on (Sample Type = Rebate Existing AND Measure = Non-Equipment). For non-equipment measures then "Non-Equipment" = 1. E.g. insulation, tune-ups, etc.

  SRBI to assign random number to cases within Strata.

  Strata – 1 – 7, 8 do not call, 9 certainty sample, 10 & 11 are for the fuel program

  Strata Quota

  Data file also include a "Recruit" quota – this refers to volunteers for On-site visits

  Contact Name

  Contact Phone number (s)

- Also, note new variables to create based on responses to questions (highlighted in green)
- ASK ALL'S: All respondents are asked the following questions (although there are some conditionals within these series), while questions specific to each program are shown in the following table.

  Website and training, Questions 1- 12

  Questions 63, 64, 65, 67, 70, 86-88, 105-106, 108-111

  FR leakage, Spillover, Wrap-up, and Demographics, Questions 131-165

1.1.1.2. Introduction

Hi, my name is ___, I am calling regarding NorthWestern Energy's efficiency programs, and have you listed as receiving a/an _____ [measure type] _____. Your feedback will help us to evaluate their efficiency activities. Are you the right person to talk with about your household's experience with this program?

[If not] Could you refer me to someone who could answer a few questions about your household's experiences with [measure type]? [Collect appropriate contact information]

(IF ASKED) This interview takes about 15 minutes.

CP1. Before we begin, I would like to confirm that if we have reached you on a cell phone, you are in a safe place to speak, and not involved in any activity that needs your full attention, such as driving?

1. UNABLE TO SPEAK/CALL ME LATER (SCHEDULE CALLBACK)

2. UNABLE TO SPEAK/CALLBACK ON A LAND-LINE PHONE (RECORD NUMBER, schedule call back)
3. CELL PHONE USED FOR BUSINESS ONLY (THANK & TERMINATE – BUSINESS#)
4. HARD REFUSAL (THANK & TERMINATE)
5. SAFE TO SPEAK/NOT A CELL PHONE (Continue)

1.1.1.3. Knowledge and Awareness

For Questions 1 to 10, ASK ALL unless there is a separate conditional.

1. Have you ever visited NorthWestern's website?

   1. Yes
   2. No
   8. Don't Know
   9. Refused

1a. [IF Q1 = 2] Is that because you don't use the Internet much, or for some other reason?

   1. Don't have access
   2. Have access but connection is slow
   3. Don't like to use it much
   4. Other (Specify)
   8. Don't Know
   9. Refused

2. [If Q1 =1] Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with this statement:

   "The information I was looking for on NorthWestern's website was both easy to find and helpful."

   1 2 3 4 5 8 Don't Know 9 Refused

2a. [IF Q2 = 1 OR 2] Why do you say that? RECORD RESPONSE

   1. Gave Response
   8. Don't Know
   9. Refused

3. [If Q1 =1] Please tell if you used this website for any of the following reasons… [Multiple Response]

1. For information on available rebates or audits
2. For money saving ideas
3. For how-to-videos
4. For information on how to contact NorthWestern
5. Information on educational events
6. Any other reasons (Specify?)
7. To pay the utility bill
8. Don't Know
9. Refused

People hear about NorthWestern's rebate or other energy efficiency programs through a variety of ways. Through which of the following ways have you heard about the __ [Program Name from Sample] __, or any other program?

For Q4 to Q9: 1.Yes 2.No 8.Don't Know 9.Refused

4. Event or meeting attended by a NorthWestern representative
5. NorthWestern mailing, brochure, insert, or advertisement
6. Contacted NorthWestern
7. Equipment vendor, contractor, or other building professional
8. Friends, neighbors or colleagues
9. Are there any other ways you recall hearing about NorthWestern's programs?
10. [IF Q9 = 1)] How else did you hear about these programs? RECORD RESPONSE.

1.1.1.3.1. Training and Education

[ASK ALL QUESTIONS 11 AND 12]

[ALL]

11. Would you like to get more information from NorthWestern about any of the following: [MULTIPLE RESPONSE?]
    1. Energy efficiency programs?
    2. Energy savings opportunities?
    3. Workshops or events on energy efficiency?
    4. None of the above (if no to all 1, 2, and 3)
    8. Don't Know
    9. Refused

12. [IF Q11 = 1, 2, OR 3] Which of the following are good ways for you to get energy efficiency information from NorthWestern? [Read all. Multiple responses.]

    1. By phone
    2. By US mail
    3. By e-mail
    4. At a community event
    5. At a workshop, seminar, or classroom event
    6. At a webinar
    7. Any other way? Specify _____
    8. Don't Know
    9. Refused

1.1.1.3.2. Energy Audit Process

[ASK IF SAMPLE TYPE= RES AUDIT ON-SITE]

13. [IF Sample Type = Res Audit On-Site] Did your auditors offer you any assistance in implementing the recommendations, such as help in identifying equipment or installers, or applying for rebates?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

14. [IF Sample Type= Res Audit On-Site] Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with this statement: "The auditor helped us to understand both our opportunities to improve energy efficiency and how to pursue them."

    1. 2. 3. 4. 5. 8. Don't Know 9. Refused

14a. [IF Q14 = 1 OR 2] Why do you say that? RECORD

SRBI – create 2 new variables called DI_ONSITE and DI_Installed. If data file lists any of DI measures installed for RES AUDIT ON-SITE cases, then set DI_Onsite to 1. Fill DI_Installed with a sting that concatenates DI measures to be piped in and read by ITRVR]

15. .[IF Sample Type = Res Audit On-Site AND DI_ONSITE = 1] NorthWestern's records show that your auditor installed one or more of the following items: PIPE IN SRBI_Res_Installed1 [INTRV note: LIST WILL INCLUDE SOME COMBINATION OF Water

Heater Tank Wrap, Pipe Insulation, Low-flow Showerhead, Bathroom and/or Kitchen Faucet Aerators] Is this correct?

1. Implied Agreement – R didn't disagree
2. (Vol) I remember getting some of those items
3. (VOL) NA Info is wrong, no items were installed by auditor
4. Don't know anything about this
9. Refused

Q15a. [If Q15 = 1 or 2] Are the items still installed?

1. Yes
2. No
8. Don't Know

[If Q15a= 2] Why is that? [Broken, threw them out, dissatisfied with performance] RECORD.

1. Gave Response
8. Don't Know
9. Refused

1.1.1.3.3. Audit FR Qs

16. [IF Sample Type = Res Audit On-Site AND DI_ONSITE=1] If the NorthWestern auditor had not installed efficiency items while conducting your audit, would you have purchased and installed any of these same items on your own within one year of your audit?

1. Yes
2. No
8. Don't Know
9. Refused

17. [If Q16=1,] Which, if any, of these items would you have installed on your own? Would you have installed [MULTIPLE RESPONSE] [Pipe in DI_Installed for prompting as needed]

1. None of them
2. Water heater tank wrap
3. Pipe insulation
4. Low-flow showerhead
5. Faucet aerators (Bathroom or Kitchen)

8. Don't Know

9. Refused

Q17a. [If ANY DI_Installed = 1 What was keeping you from installing these items sooner, prior to receiving them from NorthWestern? [PROBE TO CODE]

1. Takes too much time

2. Haven't gotten around to it

3. Too difficult

4. Don't have the tools I need

5. Other (specify) _____

8. Don't Know

9. Refused

18. [IF Sample Type = Res Audit On-Site OR Res Audit Mail] Did your Audit report recommend you install any energy saving products or equipment? [INTVWR NOTE: For Example: add insulation, weather stripping, or replace your equipment with higher efficiency models.]

1. Yes

2. No

8. Don't Know

9. Refused

19. [If Q18 = 1)] Have you installed any of the equipment or upgrades recommended in your report?

1. Yes

2. No

8. Don't Know

9. Refused

20. [IF Q19 = 1] Did you install all of the recommendations, or just some of them?

1. All

2. Some

3. (VOL)None

8. Don't Know

9. Refused

21. [IF Q20 = 2 OR 3] Do you plan to implement any of the energy audit recommendations in the next year?

    1. Yes

    2. No

    8. Don't Know

    9. Refused

22. [If Q21 =2, 8, or 9] What might get in the way of you installing the recommended items? [DO NOT READ, MULTIPLE RECORD]

    1. Cost

    2. Time

    3. Not sure what to do

    4. Not sure who can do the work

    5. Other: (specify) _____

    8. Don't Know

    9. Refused

23. [ASK IF Sample Type = Res Audit On-Site OR Res Audit Mail] Did your audit report recommend any steps you could take that would cost little or nothing and still save you energy, such as turning down the thermostat, shutting things off when not in use, or other tips?

    1. Yes

    2. No

    8. Don't Know

    9. Refused

24. [If Q23 = 1) Has your household taken any of these steps?

    1. Yes

    2. No

    8. Don't Know

    9. Refused

Q24a. [IF Q24=1] What steps did you start taking? [Do not read, Multiple responses permitted]

    1. Turning down the thermostat

    2. Shutting TV and TV components off when not in use

3. Shutting lights off when not in the room
4. Shutting off computers and printers when not in use
5. Closing drapes or window coverings at night
6. Opening drapes or window coverings to let the sun in
7. Using fans in the summer instead of the AC
8. Opening windows at night during the summer
9. Making sure kids/others in house don't waste energy
10. Other, Specify_____
98. Don't Know
99. Refused

25. [IF Sample Type = Rebate Existing] When you purchased the energy efficient equipment that qualified for a rebate from NorthWestern, was the equipment readily available, or did you have a long wait?

1. Readily Available
2. Long Wait
3. Both
8. Don't Know
9. Refused

26. [Intentionally left blank]

1.1.1.3.4. Kit Installations

[Ask If Sample Type = Kit]

READ: During an event or an audit, records show that you received the following weatherization or water saving items from NorthWestern… READ [pipe in Kit_Measure(s)]

27. [Intentionally Left Blank]
28. Did you install all of the items, some, or none of them?

1. All [SKIP TO Q34]
2. Some
3. None
4. (VOL) Did not receive/do not recall receiving any items
8. Don't Know
9. Refused

IF Q28=4, 8, or 9, SKIP TO 1.3.5

29. [If Q28 = 2] What items did you install? (READ IN KIT MEASURES) INTERVIEWER NOTE: DO NOT READ UNLESS RESPONDENT CANNOT RECALL ITEMS. MULTIPLE RECORD)

1. Door Sweeps
2. Door Weather Strip
3. Insulating spray foam
4. Foam gaskets for Outlet Covers
5. Foam gaskets for Light Switch Covers
6. Swivel Kitchen Sink Aerator
7. Bathroom Sink Aerator
8. Low-flow Showerhead
9. Window insulating shrink-wrap
10. Programmable thermostat
98. Don't Know
99. Refused

30. [If Q28 = 2 OR 3] Do you plan to install the other kit items in the next few months?

1. Yes
2. No
8. Don't Know
9. Refused

31. [If Q28=2 OR 3] What's getting in the way of installing the items? [DO NOT READ. MULTIPLE RECORD]

1. Takes too much time
2. Haven't gotten around to it
3. Too difficult
4. Don't have the tools I need
5. Don't have the items any longer
6. Other (Specify) _____
8. Don't Know
9. Refused

32. [IF Q30 = 2, KIT LEAKAGE] You said you don't plan to install the other items provided. Do you still have them?

1. Yes
2. No
8. Don't Know
9. Refused

33. [IF Q32 = 2] In what city and state are they now located? RECORD.

1. Gave Response
2. (VOL) Threw away/discarded items
8. Don't Know
9. Refused

34. [IF Q28 = 1 OR If ANY YES TO Q29.1 to Q29.10] Using a scale of 1 to 5 where 1 means "not at all agree" and 5 means you "completely agree", please rate the statement "The energy saving items you installed helped you to save energy"?

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

34a. (IF Q34 = 1 or 2) Why do you say that? RECORD

1.1.1.3.5. Kit FR Qs

[Note: Rebate & DI/OI Prgs FR Qs Come Later]

35. [If Q28 = 1 or 2] If you had not received the free efficiency items, would you have purchased and installed any of these same items within one year of your audit?

1. Yes
2. No
8. Don't Know
9. Refused

36. [If Q35 = 1] What items would you have installed, if any? (READ-IN KIT MEASURES) INTERVIEWER NOTE: DO NOT READ UNLESS RESPONDENT CANNOT RECALL ITEMS. [MULTIPLE RECORD]

1. No Items
2. Door Sweeps
3. Door Weather Strip
4. Insulating spray foam
5. Foam gaskets for Outlet Covers
6. Foam gaskets for Light Switch Covers
7. Swivel kitchen sink Aerator(s)

8. Bathroom sink aerator(s)
9. Low-flow Showerhead(s)
10. Window insulating shrink-wrap
11. A Programmable thermostat
98. Don't Know
99. Refused

Q36a. [If ANY Q36 = 2 through 11] What was keeping you from installing these items sooner?

1. Takes too much time
2. Haven't gotten around to it
3. Too difficult
4. Don't have the tools I need
5. Other (Specify) _____
6. Items too expensive/cost
8. Don't Know
9. Refused

1.1.1.3.6. Program Participation – Motivations and Satisfaction

[See Conditionals for Each Questions 37 to 41a.]

Now I have a few questions about your [Measure Name to be piped in].

37. [If Sample Type = Rebate Existing] If you needed a contractor, did you use a contractor from the Preferred Contractor list? INTERVIEWER NOTE: If NO, CLARIFY: Did you not use the contractor list, or did you not need a contractor?

1. Yes
2. No
7. NA – contractor not needed
8. Don't Know
9. Refused

Q37A. [IF Q37=2] Why didn't you use a contractor from the list? [PROBE TO CODE]

1. Didn't know about the Preferred Contractor list
2. No Preferred Contractors work near here
3. My usual contractor isn't a Preferred Contractor
4. Other, Specify

8. Don't Know

9. Refused

38. [If Sample Type = Rebate Existing] Using a 1 to -5 scale where 1 means "not at all agree" and 5 means you "completely agree", [repeat instruction as needed], please rate your agreement that: "My contractor did a good job."

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

38a. (IF Q38 = 1 OR 2) Why do you say that? RECORD

1. Gave Response

8. Don't Know

9. Refused

39. [If Sample Type = Rebate Existing AND Non_Equipment = 0] Note: Non_Equipment is a dummy variable provided with call list] Using our 1 to 5 scale where 1 means "not at all agree" and 5 means you "completely agree", please rate your agreement that: "My installer told me what I needed to know about using the equipment."

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

39a. (IF Q39 = 1 OR 2) Why do you say that? RECORD

40. [If Sample Type = Rebate Existing] Did someone from NorthWestern's program come and inspect the product or items that you received a rebate for?

1. Yes

2. No

8. Don't Know

9. Refused

41. [If Q40 = 1] Using our 1 to 5 scale where 1 means "not at all agree" and 5 means you "completely agree", please rate with the statement that: "The inspector was courteous and efficient."

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

41a. .(IF Q41 = 1 OR 2) Why do you say that? RECORD RESPONSE.

1. Gave Response

8. Don't Know

9. Refused

[If Sample Type = Rebate Existing, ask Questions 42 to 48] I'm going to read a list of reasons why your household might have applied for a rebate for equipment or services through an energy-efficiency program. Please let me know with a "yes" or "no" whether each reason applies to you.

42. Because your contractor recommended it?

1. Yes
2. No
3. Don't have a contractor
8. Don't Know
9. Refused

43. Because it seemed easy to use the program?

1. Yes
2. No
8. Don't Know
9. Refused

44. Because you knew that any equipment and service NorthWestern would offer a rebate for must be reliable?

1. Yes
2. No
3. NA
8. Don't Know
9. Refused

45. To act on recommendations from an energy audit?

1.Yes
2. No
3. Haven't had an audit
8. Don't Know
9. Refused

46. Because you had a good experience with another NorthWestern efficiency program?

1. Yes
2. No
3. Haven't been a participant in other programs
8. Don't Know
9. Refused

For Q47 – 48a.: 1. Yes 2. No 8. Don't Know 9. Refused

47. To increase the comfort of your home?

48. To save money?

48a. To save energy?

[If Sample Type = Direct Install OR Res Audit On Site, Ask Questions 49 to 52] When a NorthWestern representative offered to install efficiency items in your home, did you agree to the installations:

49. Because you knew that any equipment NorthWestern would offer to install must be reliable?

1. Yes
2. No
8. Don't Know
9. Refused

50. Because the items were free?

1. Yes
2. No
3. NA
8. Don't Know
9. Refused

For Q51 – 51a.: 1. Yes 2. No 8. Don't Know 9. Refused

51. To save money?

51a. To save energy?

52. Because you had a good experience with another NorthWestern efficiency program?

1. Yes
2. No
3. Have not participated in other programs
8. Don't Know
9. Refused

[If Sample Type = Res Audit On-Site OR Res Audit Mail, ask Questions 53 to 56a. unless otherwise specified] People get energy audits for various reasons. Please let me know with a "yes" or "no" if any of the following reasons apply to you.

For Q53 – Q56: 1. Yes 2. No 8. Don't Know 9. Refused

53. To learn ways to reduce energy costs?

54. [If Sample Type = Res Audit On-Site] Because you were concerned about the performance, including safety, of specific equipment?

54a. [If Sample Type = Res Audit Mail] Because you were concerned about the performance of specific equipment?

55. To learns ways to increase the comfort of your home?

56. Because you were planning to renovate or remodel your home?

56a. Because you were looking to buy new appliances or electronics such as TVs or computers.

[If Sample Type = Rebate New, ask Questions 57 to 62b] I'm going to read several reasons why your household might have applied for a rebate for your new home. Please let me know with a "yes" or "no" whether each reason applies to you.

57. Because your contractor or builder recommended it?

1. Yes
2. No
3. Don't have a contractor
8. Don't Know
9. Refused

For Q58– 59: 1. Yes 2. No 8. Don't Know 9. Refused

58. Because the program seemed simple to do?

59. Because you knew that any equipment NorthWestern would offer a rebate for must be reliable?

60. Because you had a good experience with another NorthWestern efficiency program?

1. Yes
2. No
3. No experience with other programs
8. Don't Know
9. Refused

For Q61 – 62b.: 1. Yes 2. No 8. Don't Know 9. Refused

61. To increase the comfort of your home?

62. To increase the value of your home?

62a. To save money?

62b. To save energy?

1.1.1.3.7. Clarity of Information

[For Questions 63 to 70, the Respondents to be Asked are Shown at the Beginning of Each Question]

I have a few questions about the information you received from NorthWestern. For the following questions, please use a 5-point scale, where 1 means "the information was not at all clear," and 5 means "the information was very clear." If you didn't get information on a topic, please let me know.

[Rating: 1 2 3 4 5 6. Not applicable 8. Don't Know 9. Refused]

How clear was the information …

63. [ASK ALL] About what equipment and energy- saving items qualify for rebates?
64. [ASK ALL] About how to apply for rebates through NorthWestern?
65. [ASK ALL] About how to request an energy audit?
66. [If Sample Type = Res Audit On-Site OR Res Audit Mail] About what to expect from your audit?
67. [ASK ALL] On the energy savings you might expect from the energy efficient equipment or items?
68. [If Sample Type = Rebate Existing] About the fact that rebates are higher if you use a preferred contractor?
69. [If Sample Type = Rebate Existing] About the fact that someone from the program may inspect your energy upgrades prior to payment of the rebate?
70. [ASK ALL] About how to follow up with program staff if you had any questions or concerns?

1.1.1.3.8. Provision of Service

[For Questions, 71 to 88, the Conditionals are Shown at the Beginning of Each Question]

Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with the following statements:

[RATING: 1 2 3 4 5 6 (VOL) Not applicable 8 Don't Know 9 Refused]

71. [If Sample Type = Rebate Existing OR Rebate New] It was easy to apply for a rebate.
72. [If Sample Type = Audit] It was easy to request an audit.
73. [If Sample Type = Res Audit On-Site] The time between scheduling an audit and when it took place seemed reasonable.
74. [If Sample Type = Res Audit On-Site] The auditor looked over my entire home during the audit.

75. [If Sample Type = Audit OR Direct Install] The items and devices installed by my auditor have performed very well.

76. [If Sample Type = Res Audit On-Site OR Res Audit Mail] The audit report identified simple, low-cost things I could do to save energy.

77. [If Sample Type = Res Audit On-Site OR Res Audit Mail] I got my audit report in a reasonable amount of time.

78. [If Sample Type = Owner CFL] The bulbs and light fixtures available through NorthWestern's program fit my lighting needs.

79. [If Sample Type = Res Audit On-Site OR Res Audit Mail OR Rebate Existing] The variety of NorthWestern's rebated equipment meet my energy upgrade needs.

80. [If Sample Type = Rebate Existing] The time it took to receive the rebate was reasonable.

81. [If Sample Type = Owner CFL] My efficient lighting has performed very well.

82. [If Sample Type = Rebate Existing OR Res Audit On-Site] The comfort of my home was noticeably improved by the efficiency items.

83. [Intentionally Left Blank]

84. [If Sample Type = Rebate New] Having a more environmentally friendly home is important to me, even if it costs a bit more than a conventional home.

85. [Intentionally Left Blank]

86. [ASK ALL] Please indicate your agreement with the following statement using a scale of 1 to 5, where 1 means "not at all agree," and 5 means "completely agree" "When contacted, program representatives were both courteous and helpful." If you did not contact program representatives, please let me know.

    1. 2. 3. 4. 5. 6. Not applicable 8. Don't Know 9. Refused

87. [ASK ALL] When considering the program offer, was there anything that raised questions or concerns about participating?

    1. Yes

    2. No

    8. Don't Know

    9. Refused

88. [If Q87 = 1] What raised questions or concerns? (PROBE TO CODE; MULTIPLE RECORD)

    1. Time involved/ possible delays

    2. Incentives not enough

    3. Difficulty of participating

    4. Not sure it would be worth it

5. Confusing
6. Hard to do things a new way
7. Other, specify
8. Don't Know
9. Refused

1.1.1.4. Free Ridership and Leakage For Existing Rebate Programs

[ASK QUESTIONS 89 TO 99 IF SAMPLE TYPE = REBATE EXISTING] [ALSO FR QUESTIONS 89 – 95 IF SAMPLE TYPE – REBATE NEW]

1.1.1.4.1. Free Ridership - Rebate Existing and Rebate New

I'd like to ask a few questions about what you most likely would have done had you not received assistance from NorthWestern for the [Measure – piped in from data file].

89. Which of the following three alternatives is most likely: Would you have:
    1. Put off buying a new [MEASURE] for at least one year [Includes repairing old or buying a used one.]
    2. Bought a new [MEASURE] that was less expensive or less energy efficient.
    3. Bought the exact same [MEASURE] anyway, and paid the full cost yourself.
    4. Or done something else (specify) _____
    8. (VOL) Don't Know
    9. (VOL) Refused

90. [Intentionally Left Blank]

Now I would like to ask about the role that the program played in your decision to purchase the energy efficient __[Measure Type]__. I'm going to read a list of things that may have influenced your decision to buy the __[Measure Type]__. For each one, please indicate how much of a role it played in your decision, where '1' means it played "no role at all" and "5" means it played "a major role." Let me know if an item doesn't apply to you.

1. 2. 3. 4. 5. 6. Not applicable 8. Don't Know 9. Refused

91. The rebate you received
92. Information on NorthWestern's website
93. Advertising and other information from NorthWestern
94. A salesperson or contractor
95. A home energy audit

1.1.1.4.2. Leakage - Existing Rebate

[If Sample Type= Rebate New, Skip to Lead in for Q105]

96. Are you still using the [Measure – piped in from data file] that is, is it still in place and working?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

97. [If Q96 = 2] What is the problem or issue? (RECORD RESPONSE) _____

    1. Gave Response
    8. Don't Know
    9. Refused

98. [If Q96 = 2] Do you still have it?

    1. Yes
    2. No
    8. Don't Know

99. [If Q98= 2] In what city and state is it now located? RECORD.

    1. Gave Response
    2. (VOL) Threw away/discarded items
    8. Don't Know
    9. Refused

1.1.1.5. CFLs

[All]

I have just a few questions for you about compact fluorescent lights, also called CFLs. CFLs are fluorescent bulbs that fit in regular light bulb sockets that look different from standard incandescent bulbs. They are often in a twisty shape, but can be globe shaped, or flood light shaped.

1.1.1.5.1. Lighting Knowledge and Behavior

105. On as scale of 1 to 5, with 1 being "not at all easy" and 5 being "very easy," how easy is it to find CFLs at the stores where you commonly buy light bulbs?

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

106. How comfortable do you feel looking for and figuring out the information on CFL packages about which bulb to buy to get the light you need? Please answer using a five-point scale, where 1 is "not at all comfortable" and 5 is "very comfortable."

1. 2. 3. 4. 5. 8. Don't Know 9. Refused]

107. [Intentionally Left Blank]

For Q108 – 109: 1. Yes 2. No 8. Don't Know 9. Refused

108. People sometimes keep spare bulbs on hand to replace burned out bulbs. Do you keep a stock of spare bulbs?

109. [IF Q108 = 1] Does your stock of spare bulbs include CFL bulbs?

110. When a standard incandescent bulb burns out, have you typically replaced it with one like it, or have you taken that opportunity to switch to a CFL?

1. Use a standard incandescent bulb
2. Use a CFL
3. Depends
8. Don't Know
9. Refused

111. [If Q110 = 3)] What does it depend on? _____ [RECORD RESPONSE]

1. Gave Response
8. Don't Know
9. Refused

1.1.1.5.2. Free Ridership - CFL DI and OI

[Ask Questions 112 to 114 If Sample Type = Direct Install or Owner CFL]

[For Sample Type =Direct Install: READ] Program records show that your auditor installed __[# bulbs]__ CFLs…

[For Sample Type = Owner CFL: READ] Program records show that you received or purchased __[# bulbs]__ CFLs...

112. …how many of these CFL bulbs are you using now? Would you say…

1. All
2. Some
3. None

[CATI, if using all they got create "DI_CFL_use" = 1; if using none or some of what they got set 'DI_CFL_use = 0]

[CATI: if 'Res Owner CFL' using all they got create "OI_CFL_use" = 1; if using none or some of what they got set "OI_CFL_use" = 0]

113. Please think back to when you got the CFL(s) through NorthWestern's efficiency activities. Between that time and now, do you think you would have purchased any of those types of CFLs on your own at full price?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

114. [If Q113 = 1) Since the time you got the CFL's through NorthWestern, how many of those types of CFL's would you have bought if they were at the full price??

    Range 1 to 97, 97 = 97 or more, 98 = Dk 99 = Refused _____

115. [Intentionally Left Blank]

116. [Intentionally Left Blank]

117. [Intentionally Left Blank]

118. [Intentionally Left Blank]

119. [Intentionally Left Blank]

120. [Intentionally Left Blank]

121. [Intentionally Left Blank]

122. [Intentionally Left Blank]

123. [Intentionally Left Blank]

124. [Intentionally Left Blank]

125. [Intentionally Left Blank]

126. [Intentionally Left Blank]

127. [Intentionally Left Blank]

128. [Intentionally Left Blank]

129. [Intentionally Left Blank]

130. [Intentionally Left Blank]

1.1.1.6. BD; Leakage for BD, DI, and Owner CFL; Spillover

[Ask All]

Thank you for your patience, we're almost done at this point,

1.1.1.6.1. Finding Buy-Down Participants

131. NorthWestern promotes CFLs that are dimmable, 3-ways, floods, globes, candelabras, and higher wattage bulbs at reduced prices. In the past year, do you recall buying any of these types of CFLs without a coupon from NorthWestern?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

[Interviewer: If hesitation say- Promotions are at participating big box stores; a few hardware stores, Albertsons, and CVS drug stores.]

132. [If Q131 = 1, ASK, ELSE SKIP TO "Screening Instructions for General Spillover B-D section" prior to Question 146] About how many CFLs do you think you got at the special promotional prices in the past year?

    RANGE 1 to 97, 97 = 97 or more, 98 = Don't Know 99= Refused_____

133. [If Q131 = 1] How many of these bulbs are you using now?

    RANGE = 1 to 97, 97 = 97 or more, 98=Don't Know 99 = Refused ["Using" meaning currently installed in a light socket]

[CATI, if using all they got (Q133 = Q132, if both are 1 to 97) create "BD_CFL_use" = 1; if using none or some of what they got set "BD_CFL_use' to 0]

1.1.1.6.2. B-D Free Ridership

134. [IF Q131 = 1] Without NorthWestern CFL price promotions, would you have purchased any CFLs within the past year?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

[CATI, if N, go to Section 1.5.3 Leakage]

135. [IF Q134 = 1, Else skip to 136] Now please consider the full price of CFL bulbs compared to NorthWestern's low-priced promotional offers. Without promotions, about how many CFL bulbs do you suppose you would have bought at the full price (in the past year)?

RANGE 1 to 97, 97 = 97 or more, 98=Don't Know , 99 = Refused _____ IF BD_CFL_use=1, skip to 144

1.1.1.6.3. B-D, Direct Install, and Owner CFL Leakage

IF "DI_CFL_use" = 0 OR "OI_CFL_use" = 0 READ:] You said you are not using all of the bulbs you received through NorthWestern Energy…

[IF BD_CFL use = 0' You said you are not using all of the bulbs you bought during a NorthWestern sales promotion

136. Why not? (PROBE TO CODE; MULTIPLE RESPONSE; PROBE—"ANYTHING ELSE?")

1. It stopped working
2. Not bright enough
3. Too bright
4. Too long to start up/ warm up
5. Didn't like the color
6. Wanted to give it to someone else
7. Other: specify_____
10. Wanted to have extras stored/on-hand
8. Don't Know
9. Refused

137. What did you do with the CFL bulbs you are not using? (Meaning those not currently installed in a light socket. PROBE TO CODE; MULTIPLE RESPONSE; PROBE—"ANYTHING ELSE?")

1. Disposed of
2. Gave away
3. Storing for later use
4. Other: specify _____
8. Don't Know
9. Refused

138. [If Q137 = 2)] In what city and state did the bulbs end up? [RECORD]

1. Gave Response
2. (VOL) Threw away/discarded items
8. Don't Know
9. Refused

139. [Intentionally Left Blank]

140. [Intentionally Left Blank]

141. [Intentionally Left Blank]

142. [Intentionally Left Blank]

143. [Intentionally Left Blank]

CFL Spillover [ALL]

[Note: since we have excluded CFL purchases in any of the SO sections above, we now ask ALL respondents about full-price CFL purchases here]

[IF Q131=1 READ:] Since buying CFLs during a NorthWestern CFL promotion, have you bought any additional…

[If Q 131 = 2 or Don't Know or Refused], In the past year have you bought any… ?

144. [ALL]…CFLs at full price?

1. Yes
2. No
8. Don't Know
9. Refused

145. [IF Q144 = 1]How would you rate the influence of NorthWestern on your decision to buy CFLs at the full price? Please use a five point scale where 1 means "no influence" and 5 means "major influence"

No influence Major influence

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

General Spillover]ALL]

ALL – READ Now let's talk about efficiency items other than CFL.

[IF if Sample Type EQ Rebate Existing OR Rebate New READ:] Since receiving a rebate for your _____[pipe in measure name] from NorthWestern have you purchased and installed any additional…

[IF Sample Type = Direct Install OR Owner CFL READ:] Since receiving CFLs from NorthWestern have you purchased and installed any additional …,

[IF Sample Type = Audit READ:] Since your home audit through NorthWestern have you purchased and installed …,

[IF Sample Type = Kit READ:] Since receiving in the energy efficiency kit through NorthWestern have you purchased and installed …,

146. Any energy efficiency items without a rebate from the utility, EXCLUDING CFLs ?

1. Yes

2. No

8. Don't Know

9. Refused

147. [If Q146 = 1] What did you install without getting a rebate? Probe: asking anything else such as efficient lighting, EXCLUDING CFLs), high efficiency appliances, electronics, insulation or other efficiency items? [CATI instruction – humor may be interjected here when asking about quantity – most likely only would install one furnace, or insulate one attic – but verify quantity]

147_1a.Item 1 Specify:_____

147_1b.Item 1 Quantity [] And how many did you install ##

147_2a.Item 2 Specify:_____ 2. No other items (skip to 149)

147_2b.Item 2 Quantity How many did you install ##

147_3a.Item 3 Specify:_____ 2. No other items (skip to 149)

147_3b.Item 3 Quantity [] How many did you install ##

147_4a.Item 4 Specify:_____ 2. No other items (skip to 149)

147_4b.Item 4 Quantity [] How many did you install ##

148. [Intentionally left blank]

149. [If Q146 = 1] Why didn't you make this purchase (if 147_2a=1 read: these purchases) through the NorthWestern program? [PROBE TO CODE; DO NOT READ]

1. Didn't think it qualified for a rebate

2. A gas measure and they don't get gas from NorthWestern

3. An electricity measure and they don't get electricity from NorthWestern

4. (Responded to Q146 incorrectly) Did go through NorthWestern program after all

5. Other (Specify)_____

8 Don't Know

9. Refused

150. [If Q146 = 1 AND Sample Type = Res Audit On-Site OR Res Audit Mail] Were any of these energy efficiency items recommended in your energy appraisal report?

1. Yes

2. No

8. Don't Know

9. Refused

151. .[If Q146 = 1] How would you rate the influence of NorthWestern on your decision to install efficiency items on your own? Please use a five point scale where 1 means “no influence” and 5 means “major influence”

1. 2. 3. 4. 5. 8.Don’t Know 9.Refused

1.1.1.7. Wrap Up

[Ask All]

152. When presented with an opportunity in the future to participate in a NorthWestern efficiency program, how likely is it you would decide to do so? Please use a five-point scale, where 1 is “not at all likely” and 5 is “very likely.”

1. 2. 3. 4. 5. 8. Don’t Know 9.Refused

153. Do you have any comments you would like to offer, that might be useful to NorthWestern as it seeks to improve its program? RECORD RESPONSE

1. Gave Response

2. No comments

8. Don’t Know

9. Refused

[ALL] My final questions are about your home and household, and will only be used to compare your program experiences with other participants.

154. Do you own the home where you live?

1. Yes

2. No

8. Don’t Know

9. Refused

155. What type of home do you live in, you can stop me when I read the type that describes your home is it a…

1. Single-family detached home, not including manufactured or mobile homes

2. Manufactured home

3. 2 to 4 unit home (i.e. duplex, triplex, or fourplex)

4. Multi-family home (more than four units)

5. Mobile home (e.g., double or single wide trailers)

8. Don’t Know

9. Refused

156. How many people live in your home?

1. One
2. Two
3. Three
4. Four
5. Five or more
8. Don't Know
9. Refused

157. What is the approximate size in square feet of your home? (DO NOT READ, but prompt with ranges if unsure)

1. Less than 1,400 sq ft
2. 1,400 up to 2,500 sq ft
3. 2,500 up to 3,500 sq ft
4. 3,500 up to 5,000 sq ft
5. More than 5,000 sq ft
8. Don't Know
9. Refused

158. What is your age? (DO NOT READ, but prompt with ranges if unsure)

1. Under 25 years
2. 25 through 34 years
3. 35 through 44 years
4. 45 through 54 years
5. 55 through 59 years
6. 60 through 64 years
7. 65 years or older
9. Refused

159. What is the highest level of education you've completed? (READ LIST) Is it…

1. Less than a college degree
2. Associate's degree
3. Bachelor's degree
4. Graduate or professional degree

9. Refused

160. Which of the following categories best describes your household's annual income before taxes? Just stop me when I get to the right category. (READ LIST)

1. Less than $20,000
2. $20,000 up to $30,000
3. $30,000 up to $40,000
4. $40,000 up to $50,000
5. $50,000 up to $60,000
6. $60,000 up to $70,000
7. $70,000 up to $80,000
8. Over $80,000
98. Don't Know
99. Refused

[Note to interviewer – Even thought the survey has been long, please be as engaging and upbeat as you ask the following questions]

161. Thank you, this survey will help NorthWestern deliver cost-effective services to their customers. We're also offering an opportunity to have a field engineer visit your home to ensure the measures you installed are operating properly and providing you with maximum energy efficiency. The visit will take about 15 minutes and requires NO advanced preparation on your part. As thanks for your participation, you'll be entered into a drawing for one of sixty $100 VISA cash cards. Your chances of winning are about one in ten.

NorthWestern relies on these on-site visits to calculate how much energy is being saved and to measure the success of programs such as these. Your participation would be very much appreciated, so that NorthWestern can continue to offer money saving programs to customers such as yourself. May I have a field engineer call you to set up a time convenient to you? [IF NECESSARY REPEAT PURPOSE: TO INSPECT THE ITEMS INSTALLED]

1. Yes
2. No
8. Don't Know
9. Refused

161a. [IF Q161 = 2, 8, or 9] Oh, so sorry to hear that. Someone will be on site for only a short while. Are you sure you won't reconsider?

1. Yes, WILL participate in on-site visit (go to Q162)
2. No, will NOT participate in on-site visit

162. [If Q161 or Q161a= 1] What is the best number to reach you?

1. Gave Response
8. Don't Know
9. Refused

163. [If Q161 or Q161a=1] Is that a landline or a cell phone number?

1. Landline
2. Cell
9. Refused

164. [If Q161 or Q161a = 1] And what is the best time to call you?

1. Gave Response
8. Don't Know
9. Refused

165. [If Q161 or Q161a = 1] And your name?

1. Gave Response
8. Don't Know
9. Refused

[If Q161 or Q161a = 1] Thank you so much. That will be very helpful. Note, not everyone who volunteers will be called for a home visit. Volunteers who complete a home visit will be entered into the drawing for a $100 Visa cash cards. Home visits will be scheduled between May and July this summer. Winners will be notified after all visits have been completed.

That's it! Thank you for answering my questions, we really appreciate your help.

1.1.2. Nonresidential Participant Survey

1.1.2.1. Survey Context

The participant records will indicate program participation with a formal name ("long program name") and a shorter name ("program name") as shown in the next table. The survey does not use the long program name. We will not use program name for to drive skip patterns.

CATI needs to load "sampletype," from the call list as shown in the table. The survey uses sample type to drive skip patterns.

As of 5/2/12 SRBI's goal is to fill RECRUIT quota by strata if possible. In addition, update Research Into Action on progress and issues. Hand dialing will be used to reach "recruit" quota goal, increasing call attempts to 10 (5 auto dial, 5 hand dial as need per strata).

CATI needs to create a new variable "program name" as shown in the table, as well These are noun phrases that are piped into the survey when the surveyor needs to refer to the program, such as in the introduction: "have you listed as receiving a/an _[program name] [e.g., energy appraisal]."

1.1.2.1.1. CATI Instructions to SRBI

- If customers want a contact at NorthWestern Energy to verify the validity of the research effort, please have them call the NorthWestern Energy Customer Contact Center, 888-467-2669 preferably M-F between 7 a.m. and 6 p.m.
- When loading the sample frame, include these variables:

  Long Program Name

  Program Name

  Sampling

  Measure Type

  Project Description

  Stratum

  Survey Quota

  Recruit Quota

  Contact Name

  Contact Phone Number (s)

- There are a number of five-point agreement questions. Any time a customer responds with a "1" or a "2" (low agreement), please ask, "Why did you say that?"

1.1.2.2. Introduction

[If do not have contact name, go to Intro X]

[Intro A: If Sample Type = Building Blocks; Else go to Intro B]

Hi, my name is ___ and I'm calling regarding NorthWestern Energy's energy efficiency programs. Your facility received an in-depth study of ways to reduce energy use through the E+ Building Blocks program. I'd like to ask a few questions about your organization's experiences with the appraisal. Are you the right person to talk with?

[Intro B: If Sample Type = CI Audit Electric; Else go to Intro C]

Hi, my name is ___ and I'm calling regarding NorthWestern Energy's energy efficiency programs. We have you listed as having received an energy audit through the E+ Energy Appraisal program. I'd like to ask a few questions about your organization's experiences with the Appraisal. Are you the right person to talk with?

[Intro C: If Sample Type = Com DI CFL]

Hi, my name is ___ and I'm calling regarding NorthWestern Energy's energy efficiency programs. We have you listed as having received energy efficient light bulbs from NorthWestern Energy as part of your energy use appraisal. I'd like to ask a few questions about your organization's experiences with these light bulbs. Are you the right person to talk with?

[Intro E: If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom]

Hi, my name is _____ and I'm calling regarding NorthWestern Energy's energy efficiency programs. We have you listed as having received a rebate or financial incentive from NorthWestern for MeasureType. I'd like to ask a few questions about your organization's experiences. Are you the right person to talk with?

[Ask to All of the above contacts indicating they were not the right person to talk with]

Could you refer me to someone who could answer a few questions about your organization's program experiences?

[Intro X: If lack contact name]

Hi, my name is ___ and I'm calling on behalf of NorthWestern Energy. Your feedback will help us to evaluate their efficiency activities. I would like to speak with the person responsible for purchasing equipment such as lighting, motors, heating, cooling, refrigeration, and water heating equipment. Could you refer me to someone who could answer a few questions about your organization and the equipment you purchase?

This interview takes about ____ minutes. Is now a good time to talk, or can we make an appointment for a later time?

1.1.2.3. Knowledge and Awareness

[ASK ALL until next skip instructions]

1. Have you ever visited NorthWestern Energy's website?

   1. Yes

   2. No

   8. Don't Know

   9. Refused

1a. [IF Q1=2] Is that because you don't use the Internet much, or for some other reason?

   1. Don't have internet access

   2. Have internet access but connection is slow

   3. Don't like to use the internet

4. Other reason (specify)

8. Don't Know

9. Refused

2. [IF Q1=1] Please tell me if you used this website for any of the following reasons [MULTIPLE RESPONSE PERMITTED]…

1. For information on available rebates or audits

2. For money saving ideas

3. For how-to-videos

4. For information on how to contact NorthWestern Energy

5. Information on educational events

6. Any other reason? [Specify _____]

7. To pay the utility bill

8. Don't Know

9. Refused

3. [If Q1=1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "The information I was looking for on NorthWestern Energy's website was both easy to find and helpful."

1. Not at all agree 2. 3. 4. 5. Completely agree 8. Don't Know 9. Refused

3a. [If Q3=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

[READ] Businesses hear about NorthWestern Energy's rebate or other energy efficiency programs through a variety of ways. Through which of the following ways have you heard about the _____**[Program Name]**_____, or any other program?

For Q4-Q9: 1.Yes 2. No 8.Don't Know 9.Refused

4. Event or meeting attended by a NorthWestern Energy representative?

5. NorthWestern's mailings, brochures, inserts, or advertisements?

6. Contacted NorthWestern Energy?

7. Equipment vendor, contractor, or other building professional

8. Colleagues, such as professional organizations

9. Are there any other ways you recall hearing about NorthWestern's programs?

10. [If Q9=1] How else did you hear about these programs? [RECORD RESPONSE: _____]

    1. Gave Response

    8. Don't Know

    9. Refused

11. Would you like to get more information from NorthWestern about…[MULTIPLE RESPONSE PERMITTED]

    1. Energy efficiency programs

    2. Energy savings opportunities

    3. Workshops or events on energy efficiency

    4. None of the above (if no to 1, 2, 3)

    8. Don't Know

    9 Refused

12. [IF Q11=1, 2, or 3] Which of the following are good ways for you to get energy efficiency information from NorthWestern Energy? [Read all. Multiple responses.]

    a. By phone

    b. By US mail

    c. By e-mail

    d. At community event

    e. At a trainings, workshops, or seminars

    f. Webinars

    g. Any other ways? Specify _____

1.1.2.4. Rebate Program Participation

13. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] Regarding your organization's decision to participate in the rebate program, who initiated the discussion about the rebate opportunity? Would you say… [READ]

    1. Your organization initiated it

    2. Your vendor or contractor initiated it

    3. The idea arose in discussion between your organization and your vendor or contractor

    4. (VOL) Other; specify _____

8. Don't Know

9. Refused

14. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas] Who prepared the rebate application? Was it… [READ]

1. You
2. Someone else in your organization
3. Your vendor or contractor
4. Your firm assisted by your vendor or contractor
5. (VOL) Someone else (specify, not a person's name, rather an organization or type of organization)
8. Don't Know
9. Refused

15. [IF Sample Type = CI Custom OR Irr Custom] Who prepared the proposal?

1. You
2. Someone in your organization
3. Staff of NCAT/ National Center for Appropriate Technology
4. Your engineer/ contractor
5. You/someone in your firm assisted by staff of NCAT
6. You/someone in your firm assisted by an engineer/contractor
7. Someone else such as NorthWestern Energy, KEMA, McKinstry, PECI, Ecos? (Specify)
8. Don't Know
9. Refused

16. [IF Sample Type = CI Custom OR Irr Custom] Did you receive advice or technical support from program representatives during the implementation phase of the project?

1. Yes
2. No
8. Don't Know
9. Refused

17. [If Q16=1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "NorthWestern Energy's advisory services helped you to complete your project both on time and within budget."

1. Not at all agree 2. 3. 4. 5. Completely agree 8. Don't Know 9. Refused

17a. [If Q17=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

18. [If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] Did a program representative come and inspect the work done through the program?

1. Yes

2. No

8. Don't Know

9. Refused

19. [If Q18=1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "The inspector was courteous and efficient."

1. Not at all agree 2. 3. 4. 5. Completely agree 8. Don't Know 9. Refused

19a. [If Q19=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

1.1.2.5. Enery Appraisal (Audit) Process

[If Sample Type = Building Blocks or CI Audit Electric]

20. [IF Sample Type = Building Blocks OR CI Audit Electric] Did your auditor offer assistance to implement the audit recommendations? [If needed: such as help identifying equipment or installers, or help applying for NorthWestern Energy rebates?]

1. Yes

2. No

8. Don't Know

9. Refused

21. [IF Q20=1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "The auditor

helped you to understand both your opportunities to improve energy efficiency and how to pursue them."

1. Not at all agree 2. 3. 4. 5. Completely agree 8. Don't Know 9. Refused

21a. [If Q21=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

21b. [IF Sample Type = CI Audit Electric] Auditors install energy saving items during the audit, where applicable. Which, if any, of the following items did your auditors install during your audit? [READ ALL 1-4, MULTIPLE RESPONSE]

1. Low Flow Showerhead(s)

2. Low Flow Faucet Aerator(s)

3. Water Heater Blanket(s)

4. Pipe wrap [Note: first 10-feet leaving the heater may be wrapped by auditor]

5. Auditor did not install any mentioned items

8. Don't Know

9. Refused

1.1.2.5.1. Audit FR Qs

[Ask if Building Blocks or CI Audit Electric; Note Other Conditionals at Beginning of Each Q]

21c. [If ANY Q21b= 1-4] If NorthWestern Energy auditor had not installed efficiency items while conducting your audit, would you have purchased and installed any of these same items within one year of your audit?

1. Yes

2. No

8. Don't Know

9. Refused

22. [IF Q21c=1 ASK ONLY ABOUT ITEMS INSTALLED IN Q21B] What, if any, items would you have installed on your own? [READ, MULTIPLE RESPONSE PERMITTED]

1.[If Q21b = 1] Low Flow Showerhead(s)

2. [If Q21b = 2]Low Flow Faucet Aerator(s)

3. [If Q21b = 3] Water Heater Blanket(s)

4. .[If Q21b = 4] Pipe wrap [Note: first 10-feet leaving the heater may be wrapped by auditor]

Q22a.[If ANY Q22 = 1 through 4] What was keeping you from installing these items sooner? (Meaning before the auditor installed them.) [PROBE TO CODE]

1. Cost
2. Time
3. Not sure what to do
4. Not sure who can do the work
5. Other: specify _____
8. Don't Know
9. Refused

23. [IF Sample Type = Building Blocks OR CI Audit Electric] Has your organization implemented any of the equipment or upgrades recommended in your facility's energy audit report?

1. Yes
2. No
3. Not applicable (no recommendations given)
8. Don't Know
9. Refused

[CATI, a Y response needs to generate a skip pattern, called "recommendations installed"]

24. [IF Q23=1] Did you implement all or some of the recommendations,?

1. All
2. Some
3. VOL None (Allows R to change their mind)
8. Don't Know
9. Refused

25. [IF Q24=2 or 3] Do you plan to implement any of the recommendations in the next year?

1. Yes
2. No
8. Don't Know
9. Refused

26. What might get in the way of installing recommended equipment or upgrades? [DO NOT READ, MULTIPLE RECORD]

    1. Cost
    2. Time
    3. Not sure what to do
    4. Not sure who can do the work
    5. Other: specify _____
    8. Don't Know
    9. Refused

27. [IF Sample Type = Building Blocks OR CI Audit Electric] Did your audit report recommend any steps your organization could take that don't require an equipment upgrades to save energy, such as turning down the thermostat, shutting things off when not in use, or other tips?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

28. [If Q27=1] Has your organization taken any of those steps?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

[CATI, IF Q28 = 1 please add to the skip pattern indicator field called "recommendations installed" that was initiated after Q23]

29. [If Q28=1] What steps did you take? _____

    1. Gave Response
    8. Don't Know
    9. Refused

1.1.2.6. Reasons For Participation

[All with Exception of Conditionals at the Beginning of The Q]

I'm going to read a list of reasons why your organization might have applied for a rebate, gotten equipment, or had an facility audit through an energy-efficiency program. Please let me know with a "yes" or "no" whether each reason applies.

For Q30-Q43: 1.Yes 2. No 8. Don't Know 9. Refused

30. [ALL] Because your contractor or equipment supplier recommended the program

31. [ALL] Because it seemed easy to use the program

32. [If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] Because the rebate was needed for the cost to meet your payback (or return on investment) requirements

33. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] Because you knew that any equipment NorthWestern Energy would offer a rebate for must be reliable

34. [IF Sample Type = Com DI CFL OR Vending Miser DI] Because you knew that any equipment NorthWestern Energy would install would be reliable

35. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR CI Custom OR Irr Custom] To act on recommendations from an energy audit

IF Sample Type = Irr Custom and Q35 = 1 create Skip Pattern = Irrigation Audit

36. [IF Sample Type = Building Blocks OR CI Audit Electric OR skip pattern = Irrigation Audit] Because a NorthWestern Energy representative suggested you have an audit

37. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR CI Custom OR Irr Custom] To save energy and money

38. [ALL] Because you had a good experience with another NorthWestern Energy efficiency program

39. [IF Sample Type = Building Blocks OR CI Audit Electric OR Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom] To increase the comfort of your facility

40. [IF Sample Type = Building Blocks OR CI Audit Electric OR Skip Pattern = Irrigation Audit] To learn ways to reduce energy costs

41. [IF Sample Type NOT = Com DI CFL OR Vending Miser DI] Because you were concerned about the performance of specific equipment

42. [IF Sample Type = Building Blocks OR CI Audit Electric] Because you were considering making changes to the operation of your facility

43. [IF Sample Type = Irr Custom] Because you were considering making changes to the operation of your irrigation system

1.1.2.7. Clarity of Information

[All, Except Where Conditionals Are Notes]

I have a few questions about the information you received from NorthWestern Energy. For the following questions, please use a five-point scale, where 1 means "the information was not at all clear," and 5 means "the information was very clear." If you didn't get information on a topic, please let me know. How clear was the information…

For Q44-Q56: 1.Info not at all clear 2. 3. 4. 5. Info very clear 6. Not Applicable 8. Don't Know 9. Refused

44. [ALL] About what equipment and energy-saving items qualify for rebates
45. [ALL] About how to apply for rebates through NorthWestern Energy's programs
46. [ALL] About how to request an energy audit
47. [IF Sample Type = ((CI Custom OR Irr Custom) AND Q15=1 OR 2 OR 5 OR 6)] About how to prepare a project proposal
48. [IF Sample Type = CI Custom OR Irr Custom] About how to request assistance to develop a project
49. [IF Sample Type = CI Custom OR Irr Custom] About the project approval process
50. [IF Sample Type = CI Custom OR Irr Custom] About the amount of time required for your project to be approved
51. [IF Sample Type = Com Rebate Lighting] About how to complete the lighting rebate worksheet
52. [IF Sample Type = Building Blocks OR CI Audit Electric] About what to expect during an energy audit
53. [IF Sample Type = CI Custom OR Irr Custom] About the fact that pre-approval is required for your efficiency project
54. [If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] About the fact that your project might be inspected prior to the payment of the rebate
55. [If Sample Type = Vending Miser DI OR Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom OR Skip Pattern = Recommendations Installed] About the energy savings you might expect from the rebated efficiency items you installed
56. [ALL] About how to follow up with program staff if you had questions or concerns

1.1.2.8. Provision of Service

Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with the following statements:

For Q57-66: 1. Not at all agree 2. 3. 4. 5. Completely agree 8. Don't Know 9. Refused

57. [IF Sample Type = Building Blocks OR CI Audit Electric] The time between scheduling my audit and when it occurred was reasonable.

58. [IF Sample Type Building Blocks OR CI Audit Electric] The auditor looked over my entire facility during the audit

59. [IF Sample Type Building Blocks OR CI Audit Electric] We got our audit report in a reasonable amount of time.

60. [IF (Sample Type = Building Blocks OR CI Audit Electric OR Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas] NorthWestern Energy's rebate offerings met my energy upgrade needs.

61. [IF Sample Type = CI Custom OR Irr Custom] The amount of time to receive pre-approval for our project was reasonable.

62. [IF Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas] The rebate application process was easy to complete.

63. [IF Sample Type = CI Custom OR Irr Custom] The amount of time for acceptance of our proposal was both reasonable and expected.

64. [If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] The amount of time for payment of our rebate was reasonable.

65. [If Sample Type = Com DI CFL OR Vending Miser DI OR Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom] Our efficient equipment has performed very well.

66. [If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom OR Skip Pattern = Recommendations Installed] The energy savings from our project met or exceeded our expectations.

67. [Intentionally left blank]

68. [ASK ALL] Please indicate your agreement with the following statement using a scale of 1 to 5, where 1 means "not at all agree," and 5 means "completely agree" "When

contacted, program representatives were both courteous and helpful." If you did not contact program representatives, please let me know.

1. 2. 3. 4. 5. 6. Not applicable 8. Don't Know 9. Refused

68a. [If Q68=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

69. [ALL] When considering NorthWestern's efficiency programs, was there anything that raised questions or concerns about participating?

1. Yes

2. No

8. Don't Know

9. Refused

70. [IF Q69=1] What raised those questions or concerns? (DO NOT READ; MULTIPLE RESPONSE PERMITTED)

1. Time involved/ possible delays

2. Incentives not enough

3. Difficulty of participating

4. Hard time getting approvals or getting everyone on board

5. Not sure it would be worth it

6. Confusing

7. Hard to do things a new way

8. Other, specify

98. Don't Know

99. Refused

71. [ALL] About how many motors, if any, are used in your operation? _____

[RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused

71a. [If Q71>0] And how many, if any, of these motors are 20 horse power or larger?

[RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused

72. [IF Q71=1 to 997 or Sample Type = CI Rebate Motor] On average, how many motors does your organization purchase per year? ____

998. Don't Know

999. Refused

73. [IF Q71=1 to 997 or Sample Type = CI Rebate Motor] Do you keep any motors in stock to be used when a motor fails?

1. Yes

2. No

8. Don't Know

9. Refused

74. [Intentionally left blank]

75. [IF Q71a=1 to 997 or Sample Type = CI Rebate Motor] Large motors can be rewound to be more energy efficient. Before today, were you aware of this opportunity? [CATI NOTE: "some" are those motors with sufficient space to accommodate larger diameter copper wire]

1. Yes

2. No

8. Don't Know

9. Refused

76. [If Q75=1] Do you know a shop that conducts energy-efficient rewinds?

1. Yes

2. No

8. Don't Know

9. Refused

76a. [IF Q75=1] On average, how many motors does your organization rewind per year?

[RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused

77. [If Q71=1 to 997] Has your organization tried to purchase a NEMA Premium motor? (IF ASKED: NEMA stands for the National Electrical Manufacturers Association and even smaller motors, 1 HP or larger, may have this rating)

1. Yes

2. No

8. Don't Know

9. Refused

78. [IF Q77=1] Was the NEMA Premium motor readily available or did you have a long wait?

1. Readily Available
2. Took a long time to get
8. Don't Know
9. Refused

79. [IF Q71=1 to 997 or Sample Type = CI Rebate Motor] Does your organization have a policy to purchase only NEMA Premium efficient motors?

1. Yes
2. No
8. Don't Know
9. Refused

80. [IF Sample Type NOT = Com Rebate Lighting] Has your organization tried to purchase high-efficiency lighting equipment?

1. Yes
2. No
8. Don't Know
9. Refused

[Note to SRBI, a "Y" response to this question triggers a skip pattern, called "Tried to Purchase E-E Lighting"]

81. [IF Sample Type = Com Rebate Lighting OR Q80=1] Was the efficient lighting equipment readily available?

1. Yes
2. Yes, but took longer to get
3. No
8. Don't Know
9. Refused

1.1.2.9. Free Ridership and Leakage for COM Rebate Programs

[If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom]

1.1.2.9.1. Free Ridership Rebate

I'd like to ask a few questions about what you most likely would have done had you not received assistance from NorthWestern Energy for the **[Measure – piped in from data file]**.

82. Which of the following three alternatives is most likely: [CATI—READ ALL THREE, THEN SEEK RESPONSE]

You would have:

1. One, put off buying a new [MEASURE] for at least one year [Includes repairing old or buying used one.]
2. Two, bought a new [MEASURE] that was less expensive or less energy efficient.
3. Three, bought the exact same [MEASURE] anyway, and paid the full cost yourself.
4. (VOL) Or done something else (specify) _____ [Interviewer should try to appropriately fit response into one of the options (1-3) above; else collect detailed, verbatim response if no fit is possible]
8. (VOL) Don't Know
9. (VOL) Refused

Now I would like to ask about the role that the program played in your decision to purchase the energy efficient _____[Measure Type]_____. I'm going to read a list of things that may have influenced your decision to buy the _____[Measure Type]_____. For each one, please indicate how much of a role it played in your decision, where '1' means it played "no role at all," and "5" means it played "a major role." Let me know if an item doesn't apply to you.

For Q84 to Q88: 1.No role at all 2. 3. 4. 5.A major role 6.Not Applicable 8.Don't Know 9.Refused

84. The rebate you received

85. Information on NorthWestern Energy's website

86. Advertising and other information from NorthWestern Energy

87. A salesperson or contractor

87a. A NorthWestern program representative

88. An energy audit or appraisal

1.1.2.9.2. Leakage - Com Rebate

89. Are you still using the **[Measure – piped in from data file]**; that is, is it still in place and working?

1. Yes
2. No
8. Don't Know
9. Refused

90. [IF Q89=2] What is the problem or issue ? (RECORD RESPONSE)

1. Gave Response

8. Don't Know

9.Refused

91. [IF Q89=2] Do you still have it?

1. Yes

2. No

8. Don't Know

9. Refused

92. [IF Q89=2] In what city and state is it now located? [RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

1.1.2.10. Second Iteration of Free Ridership and Leakage Q

[Just for COM Rebate New Gas Program that have a Second Measure Listed in Call List]

[If Sample Type = Com Rebate New Gas and Measure2 Indicator = 1]

Fields labeled "Measure2 Indicator," "Measure2" and "Measure Type2" are located in COM call list sent to SRBI on 4/26/12

1.1.2.10.1. Free Ridership Rebate

I'd like to ask a few questions about what you most likely would have done had you not received assistance from NorthWestern Energy for a second item, your **[Measure2 – piped in from data file]**.

82b. Which of the following three alternatives is most likely: [CATI—READ ALL THREE, THEN SEEK RESPONSE]

You would have:

1. One, put off buying a new [MEASURE2] for at least one year [Includes repairing old or buying used one.]

2. Two, bought a new [MEASURE2] that was less expensive or less energy efficient.

3. Three, bought the exact same [MEASURE2] anyway, and paid the full cost yourself.

4. (VOL) Or done something else (specify) _____ [Interviewer should try to appropriately fit response into one of the options (1-3) above; else collect detailed, verbatim response if no fit is possible]

8. (VOL) Don't Know

9. (VOL) Refused

Now I would like to ask about the role that the program played in your decision to purchase the energy efficient _____[Measure Type2]_____. I'm going to read a list of things that may have influenced your decision to buy the _____[Measure Type2]_____. For each one, please indicate how much of a role it played in your decision, where '1' means it played "no role at all," and "5" means it played "a major role." Let me know if an item doesn't apply to you.

For Q84b to Q88b: 1.No role at all 2. 3. 4. 5.A major role 6.Not Applicable 8.Don't Know 9.Refused

84b. The rebate you received

85b. Information on NorthWestern Energy's website

86b. Advertising and other information from NorthWestern Energy

87b. A salesperson or contractor

87bb. A NorthWestern program representative

88b. An energy audit or appraisal

1.1.2.10.2. Leakage – for Second Measures

[Sample Type= COM Rebate New Gas Program that Have a Second Measure Listed in Call List]

89b. Are you still using the [Measure – piped in from data file]; that is, is it still in place and working?

1. Yes
2. No
8. Don't Know
9. Refused

90b. [IF Q89=2] What is the problem or issue? (RECORD RESPONSE)

1. Gave Response
8. Don't Know
9. Refused

91b. [IF Q89=2] Do you still have it?

1. Yes
2. No
8. Don't Know
9. Refused

92b. [IF Q89=2] In what city and state is it now located? [RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

****

1.1.2.10.3. Spillover - Com Rebate Programs

93. [Intentionally left blank]

94. [Intentionally left blank]

95. [Intentionally left blank]

96. [Intentionally left blank]

97. [Intentionally left blank]

1.1.2.10.4. Lighting

[All] I have just a few questions for you about compact fluorescent lights, also called CFLs. CFLs are fluorescent bulbs that fit in regular light bulb sockets that look different from standard incandescent bulbs. They are often in a twisty shape, but can be globe shaped, or thin tubes.

1.1.2.10.5. Lighting Knowledge and Behavior

[All]

103. On as scale of 1 to 5, with one being "not at all easy" and 5 being "very easy," how easy it to find CFLs at the stores where you commonly buy light bulbs?____

1.Not at all easy 2. 3. 4. 5.Very easy 8.Don't Know 9.Refused

104. Do you feel comfortable looking for and figuring out the information on CFL packages about which bulb to buy to get the light you need? Please answer using a five-point scale, where 1 is "not at all comfortable" and 5 is "very comfortable." 1 2 3 4 5 8 Don't Know 9 Refused]

Q104a.[If Q104=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

105. [IF Q104=1, 2, or 3] What type of store display, or other information, would you find helpful for picking out the right CFL to meet your needs?

1. Gave Response

8. Don't Know

9. Refused

106. People sometimes keep spare bulbs on hand to replace burned out bulbs. Do you keep a stock of spare bulbs

1. Yes

2. No

8. Don't Know

9. Refused

107. [IF Q106=1] Does your stock of spare bulbs include CFL bulbs?

1. Yes

2. No

8. Don't Know

9. Refused

108. When a standard incandescent bulb burns out, have you typically replaced it with one like it, or have you taken that opportunity to switch to a CFL?

1. Replace with incandescent

2. Replace with CFL

3. Depends

8. Don't Know

9. Refused

109. [IF Q108=3] What does it depend on? _____

1. Gave Response

8. Don't Know

9. Refused

1.1.2.10.6. Free Ridership – COM DI CFLand Vending Miser DI

[See sampling data for # of COM DI CFL bulbs installed, and # of Vending Miser DI Installed]

[IF Sample Type = Com DI CFL AND Number of DI bulbs >1: READ] Program records show that your auditor installed ___[# bulbs]__CFLs, how many of these bulbs …

[IF Sample Type = Vending Miser DI AND Number of Misers installed >1: READ] Program records show that NorthWestern program representatives install __[# misers]_vending machine misers, how many of the misers…

110. … are you using now? ____

[RANGE: 0-97, 97=97 or more, 98=Don't Know, 99=Refused]

[CATI: if using all they got, create "DI_CFL_Use" = 1, if using none or some of what they got set "DI_CFL_Use" = 0]

111. Please think back to when you got these items through NorthWestern's efficiency activities. Between that time and now, do you think you would have purchased any of those types of CFL's on your own at full price? [CATI, if N, go to Leakage CFL DI]

1. Yes
2. No
8. Don't Know
9. Refused

112. [IF Q111=1 AND Sample Type = Com DI CFL] Since the time you got the CFL's through NorthWestern, how many of those types of CFL's would you have bought if they were at the full price?

[RANGE: 0-97, 97=97 or more, 98=Don't Know, 99=Refused]

113. [Intentionally left blank]

114. [Intentionally left blank]

115. [Intentionally left blank]

116. [Intentionally left blank]

117. [Intentionally left blank]

118. [Intentionally left blank]

119. [Intentionally left blank]

120. [Intentionally left blank]

121. [Intentionally left blank]

122. [Intentionally left blank]

123. [Intentionally left blank]

124. [Intentionally left blank]

125. [Intentionally left blank]

126. [Intentionally left blank]

127. [Intentionally left blank]

128. [Intentionally left blank]

1.1.2.11. Free Ridership For Buy Down, Leakage For Buy Down and Direct Install CFLs, and Spillover For All Programs

[ASK ALL] Thank you for your patience, we're almost done at this point.

1.1.2.11.1. Finding Buy-Down Participants

New Screener Q's for All

S-1. We've mostly been talking about rebated equipment other than lighting. Before we turn to CFL bulb purchases made during 2011, I'd like to verify that you are responsible for selecting the light bulbs to be purchased for your firm?

1. Yes [Skip to Q129 and continue on]

2. No , someone else does that

S-2. [IF S-1=2] Whom should we call to talk about light bulb selection and purchases at your site in the past year? [Collect 1 or 2 names to call about light bulb decision-making, including selection and actual purchases made in 2011 THEN skip to (skip to Screening Instructions for General Spillover for All Programs, just prior to Q144)]

1. CFL Contact name_1
2. CFL Contact phone_1
3. CFL Contact name_2
4. CFL Contact phone_2

129. NorthWestern promotes CFLs that are dimmable, 3-ways, floods, globes, candelabras, and higher wattage CFLs at reduced prices. In the past year, do you recall buying any of these types of CFL bulbs?

[Interviewer: If hesitation say- Promotions are at participating big box stores; a few hardware stores, Albertsons, and CVS drug stores.]

1. Yes

2. No (skip to Screening Instructions for CFL Spillover Q142)

8. Don't Know (skip to Screening Instructions for CFL Spillover Q142B-D)

9. Refused (skip to Screening Instructions for CFL Spillover B-D Q142)

129a. [If 129=1] did you buy the specialty CFL bulb at any of the following stores? READ [Multiple Response Permitted]

1. From Platt Electric
2. From Costco, Sam's, or Wal-Mart,
3. From Lowes, Home Depot, Ace Hardware, or Kenyon Noble
4. From Albertsons or CVS

5. Bed, Bath and Beyond
6. None of the above [SKIP TO SPILLOVER CFL, see conditionals prior to Q142]
7. Don't Know
8. Refused

130. [IF Q129a=1,or 2 or 3 or 4]About how many CFLs do you think you got at the special promotional prices?

[RANGE: 1-97, 97=97 or more, 98=Don't Know, 99=Refused]

131. How many of these bulbs are you using now?

[RANGE: 0-97, 97=97 or more, 98=Don't Know, 99=Refused, Response must be less than or equal to Q130 response]

[CATI, if using all they got create "CFL_use" = 1; if using none or some of what they got set "BD_CFL_Use" to 0].

1.1.2.11.2. B-D Free Ridership

132. Without NorthWestern's CFL price promotions, would you have purchased any CFLs for your facility within the past year?

1. Yes
2. No
8. Don't Know
9. Refused

133. [IF Q132=1] Without promotions, about how many CFL bulbs do you suppose would you have bought at the full price (in the past year)?_____

[RANGE: 1-97, 97=97 or more, 98=Don't Know, 99=Refused]

1.1.2.11.3. B-D and Direct Install CFL Leakage

[IF DI_CFL_use = 0 OR BD_CFL_use=0 READ Appropriate lead-in; else skip to "B-D and All Others CFL Spillover" section below]

[READ IF DI_CFL use = 0:] You said you are not using all of the bulbs you received through NorthWestern Energy. …

[READ IF BD_CFL use = 0:]You said you are not using all of the bulbs you bought during a NorthWestern sales promotion. …

134. Why is that? (PROBE TO CODE; MULTIPLE RESPONSE PERMITTED; PROBE—"ANYTHING ELSE?")

1. It stopped working
2. Not bright enough
3. Too bright
4. Too long to start up/ warm up
5. Didn't like the color
6. Wanted to give it to someone else
7. Other: specify_____
10. Wanted to have extra's stored/on-hand
8. Don't Know
9. Refused

135. What did you do with the CFL bulbs you are not using? (PROBE TO CODE; MULTIPLE RESPONSE PERMITTED; PROBE—"ANYTHING ELSE?")
    1. Disposed of
    2. Gave away
    3. Storing for later use
    4. Other: specify _____
    8. Don't Know
    9. Refused

136. [IF Q135=2] In what city and state did the bulbs end up? [RECORD RESPONSE]
    1. Gave Response
    8. Don't Know
    9. Refused

137. [Intentionally left blank]

138. [Intentionally left blank]

139. [Intentionally left blank]

140. [Intentionally left blank]

141. [Intentionally left blank]

1.1.2.11.4. Spillover – CFL and General

BD and All Others CFL Spillover

[Note: Asking about CFL purchases outside of the NWE programs , see separate lead-ins for Buy-Down and all other respondents]

[Note to analyst – CFL spillover be split-out for sample-type – Direct Install]

[READ [IF Q129a=1,or 2 or 3 or 4] Since buying specialty CFLs during a NorthWestern Energy CFL promotion, have you bought …

[READ If (Q129 = 2 or Don't Know or Refused) OR Q129a=5] In the past year have you bought any…

142. CFLs at full price without a rebate from NorthWestern?

1. Yes
2. No
8. Don't Know
9. Refused

143. [IF Q142=1] How would you rate the influence of NorthWestern Energy on your decision to buy CFLs at the full price? Please use a five-point scale, where 1 means "no influence," and 5 means "major influence"

1. No influence 2. 3. 4. 5. a major influence 8. Don't Know 9. Refused

Q143a. [If Q143=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response
8. Don't Know
9. Refused

1.1.2.11.5. General Spillover for all Programs

[All]

INTRO: Now let's talk a minute about efficiency items other than CFLs… Also say we are almost finished…

[Lead-ins are based on Sample Type for Q144]

[READ If Sample Type = Com Rebate Lighting OR Com Rebate Electric OR Com Rebate Gas OR CI Rebate Motor OR Com Rebate New Electric OR Com Rebate New Gas OR CI Custom OR Irr Custom:] Since receiving a rebate for your __[pipe in measure name] from NorthWestern have you purchased and installed any additional…

[IF Sample Type = Com DI CFL] Since receiving CFLs from NorthWestern have you purchased and installed any additional …,

[IF Sample Type = READ:] Since your appraisal through NorthWestern have you purchased and installed …,

[IF Sample Type = Vending Miser DI READ:] Since the vending misers were installed by a NorthWestern program representative have you purchased and installed …,

[IF Sample Type = Building Blocks Pilot OR CI Audit Electric:] Since the NorthWestern program representative conducted your appraisal have you purchased and installed …,

144. any energy efficiency items without a rebate from NorthWestern Energy? [Prompt including other efficient lighting options like CFL fixtures, appliances, insulation, efficient windows motors, or any other efficiency items]

1. Yes

2. No

8. Don't Know

9. Refused

145. [IF Q144=1] What efficiency measurers did you install without a rebate? [RECORD RESONSES SEPARATELY AND FOLLOW WITH "HOW MANY" WHERE APPROPRIATE. PROBE TO THE NEGATIVE Anything else such as efficient lighting other than CFLs, high efficiency appliances, windows, or electronics, insulation or other efficiency items?]

[CATI instruction – humor may be interjected here when asking about quantity – most likely only would install one furnace, or insulate one attic – but verify quantity]

145_1a.Item 1 Specify:_____

145_1b.Item 1 Quantity And how many did you install ##

1445_2a.Item 2 Specify:_____ 2. No other items (skip to 147)

145_2b.Item 2 Quantity How many did you install ##

145_3a.Item 3 Specify:_____ 2. No other items (skip to 147)

145_3b.Item 3 Quantity How many did you install ##

145_4a.Item 4 Specify:_____ 2. No other items (skip to 147)

145_4b.Item 4 Quantity How many did you install ##

145_5a.Anything else, Specify_____ 2. No other items

146. [Intentionally left blank]

147. [If Q144 = 1] Why didn't you make this purchase through the NorthWestern Energy program? [PROBE TO CODE; DO NOT READ] 1. Didn't think it qualified for a rebate 2. A gas measure and they don't get gas from NorthWestern 3. An electricity measure and they don't get electricity from NorthWestern 4. Responded to Q100 incorrectly; did go through NEW program after all 5. Other, specify 8 Don't Know 9.

148. [If Q144 = 1 AND (Sample Type Building Blocks OR CI Audit Electric)] Were any of these energy efficiency items recommended in your energy audit report?

1. Yes

2. No

8. Don't Know

9. Refused

149. [If Q144 = Y] How would you rate the influence of NorthWestern Energy on your decision to install efficiency items on your own? Please use a five-point scale, where 1 means "no influence," and 5 means "major influence."

1. No influence 2. 3. 4. 5. A major influence 8. Don't Know 9. Refused

Q149a. [If Q149=1 or 2] Why do you say that? RECORD RESPONSE]

1. Gave Response

8. Don't Know

9. Refused

1.1.2.12. Wrap Up and Firmographics

[All]

149b. When presented with an opportunity in the future to participate in a NorthWestern Energy efficiency program, how likely is it you would decide to do so? Please use a five-point scale, where 1 is not at all likely and 5 is very likely.

1. 2. 3. 4. 5. 8.Don't Know 9.Refused

149c. Do you have any comments you would like to offer, that might be useful to NorthWestern Energy as it seeks to improve its program? RECORD RESPONSE_____

My final questions are about your organization and facility. Your answers will help me compare your responses about your program experiences with those of other participants.

150. Is this organization a for-profit business or a not-for-profit organization?

1. For-profit

2. Not-for-profit

8. Don't Know

9. Refused

151. What type of facility is this? Would you say the space is primarily an industrial facility or a commercial facility?

1. Industrial

2. Commercial

3. Mixed industrial and commercial

8. Don't Know

9. Refused

152. What is the primary business activity conducted at this facility? (DO NOT READ, PROBE IF NEEDED)

1. Office
2. Retail
3. Healthcare
4. Education
5. Warehouse
6. Grocery
7. Lodging
8. Restaurant
9. Industrial
10. Wastewater
11. Farming/Irrigation
12. Miscellaneous (specify)
98. Don't Know
99. Refused

153. How many buildings are at this facility?

[RANGE: 1-97, 97=97 or more, 98=Don't Know, 99=Refused]

153a. Do you occupy the entire facility on some portion of it?

1. Entire facility
2. Part of the facility

98 Don't Know

99. Refused

153b. [IF 153a = 2] What percentage of the facility do you occupy? [%%]

1. Gave Response
8. Don't Know
9. Refused

154. What's your best guess as to the size of this facility—the approximate square footage of the space that is cooled or heated. [IF Q153 >1:] Please tell me the total for all of the buildings. Is it…

1. Under 5,000 sq. ft.
2. 5,000 to just under 10,000 sq. ft.

3. 10,000 to just under 25,000 sq. ft
4. 25,000 to just under 75,000 sq. ft
5. 75,000 sq. ft. or more
8. Don't Know
9. Refused

Q154a. How long has this business occupied this location? ____ __

[RANGE: 0-97, 0=Less than 1 year, 97=97 or more, 98=Don't Know, 99=Refused]

Q155. What year was the building constructed? [If Q153 >1, "Please refer to the largest building" (if needed: Your best guess is fine)

_____ (year)

9998= Don't Know

9999=Refused

Could you quickly indicate, with just a yes or no, which of the following your firm has in place?

For Q156-Q160: 1.Yes 2.No 8.Don't Know 9.Refused

156. A designated energy manager or an energy management team?

157. A management directive to cut energy costs?

158. Energy use targets?

159. Contracts for equipment maintenance and servicing that require energy-efficiency?

160. Written procedures or policies that encourage energy efficiency? [for example, thinking about energy efficiency when you purchase equipment]

161. [Intentionally left blank]

Thank you, this survey will help NorthWestern deliver cost-effective services to their customers. We're also offering an opportunity to have a field engineer visit your home to ensure the measures you installed are operating properly and providing you with maximum energy efficiency. The visit will take about 15 minutes and requires NO advanced preparation on your part. As thanks for your participation, you'll be entered into a drawing for one of sixty $100 VISA cash cards. Your chances of winning are about one in ten.

NorthWestern relies on these on-site visits to calculate how much energy is being saved and to measure the success of programs such as these. Your participation would be very much appreciated, so that NorthWestern can continue to offer money saving programs to customers such as yourself. May I have a field engineer call you to set up a time convenient to you? [IF NECESSARY REPEAT PURPOSE: TO INSPECT THE ITEMS INSTALLED] 1. Yes 2. No 8. Don't Know 9. Refused

162. [IF Q161=1] What is the best number to call to schedule the appointment?

1. Gave Response

8. Don't Know

9. Refused

162a. And is that a cell or landline number?

1. Cell

2. Landline

163. And who should we ask to speak with to schedule the appointment?

1. Gave Response

8. Don't Know

9. Refused

164. When in the best time to call back?

1. Gave Response

8. Don't Know

9. Refused

[IF Q161=1 or 3] Thank you. Not everyone who volunteers will be called. If your facility is selected, you will be contacted within the next 30 days to schedule an appointment for the visit.

165. [IF Q161 = 2 and Strata = >=3 Can I let NorthWestern Energy program representatives know that you've declined?.

1. Yes [Verify contact info, name, and phone number]

2. No [Hard refusal for on-site]

That's it! Thank you for answering my questions.

1.1.3. Renewable Energy Survey

Measure Name includes 1 of 3 types of projects: Hydroelectric Generator, Photovoltaic, and Wind Turbine

Quota Cells:

In the Residential File, there are 134 cases to call

Strata 1 - 105 cases, completes goal is 27, onsite recruitment goal is 10

Strata 2 - 29 cases, completes goal is 19, onsite recruitment goal is 7

In the Nonresidential file, there are 40 cases to call

Strata 1 - 27 cases, completes goal is 16, onsite recruitment goal is 6

Strata 2 - 10 cases, completes goal is 8, onsite recruitment goal is 3

Strata 9 - 3 cases, completes goal is 3, onsite recruitment goal is 3

CATI Instructions to SRBI – Begin Programming with Introduction on Page 2.

- If customers should want a contact at NorthWestern Energy to verify the validity of the research effort, please have them call the NorthWestern Energy Customer Contact Center, 888-467-2669 preferably M-F between 7 a.m. and 6 p.m.
- When loading the sample frame, include these variables:
  - Long Program Name
  - Program Name
  - Short Name
  - Sample Type
  - Measure Name
  - Project Description
  - Quota
  - Customer Type Indicator fields:

    Residential = 1

    Commercial = 1
- There are a number of five-point agreement questions. Any time a customer responds with a "1" or a "2" (low agreement), please ask, "Why did you say that?"
- Please add "don't know" and "refused" response options to questions.
- RIA to identify appropriate questions for a "not applicable" response option.
- Where multiple responses are specified, please insert some part of the initial question text to each of the new variables to aid analysis.

1.1.3.1. Introduction

Hi, my name is ___ and I'm calling regarding NorthWestern Energy's energy efficiency programs. We have you listed as doing a ____[Project Name} with the E+ Renewable Energy Program project within the last two years. I'd like to ask a few questions about your experiences with the Program. Are you the right person to talk with?

[If not:] Could you refer me to someone who could answer a few questions about the renewable energy project?

(IF ASKED) This interview takes about ____ minutes. Is now a good time to talk, or can we make an appointment for a later time?

1.1.3.2. Knowledge and Awareness

[ALL] CATI PROGRAMMING INSTRUCTION: copy questions 1 to 12 from the 5593 CATI program

1. Have you ever visited NorthWestern's website?

   1. Yes
   2. No
   8. Don't Know
   9. Refused

1a. [IF Q1 = 2] Is that because you don't have access to the Internet, or for some other reason?

   1. Don't have access
   2. Have access, but connection is slow
   3. Don't like to use it much
   4. Other (Specify)
   8. Don't know
   9. Refused

2. [If Q1 =1] Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with this statement: "The information I was looking for on NorthWestern's website was both easy to find and helpful."

   1 2 3 4 5 8. Don't Know 9. Refused

2a. [IF Q2 = 1 OR 2] Why do you say that? RECORD RESPONSE

   1. Gave Response
   8. Don't Know
   9. Refused

3. [If Q1 =1] Please tell if you used this website for any of the following reasons… [Multiple Response]

   1. For information on available rebates or audits
   2, For money saving ideas
   3. For how-to-videos
   4. For information on how to contact NorthWestern
   5. information on educational events
   6. Any other reasons (Specify)
   7. To pay the utility bill

8. Don't Know
9. Refused

(NOTE: WORDING SLIGHTLY DIFFERENT FROM 5593) People hear about NorthWestern's renewable energy program, rebates, or other energy efficiency programs through a variety of ways. Through which of the following ways have you heard about the Renewable Energy __[Program Name from Sample]__, or any other program?

For Q4 to Q9: 1. Yes 2. No 8. Don't know 9. Refused

4. Event or meeting attended by a NorthWestern representative
5. NorthWestern mailing, brochure, insert, or advertisement
6. Contacted NorthWestern
7. Equipment vendor, contractor, or other building professional
8. Friends, neighbors or colleagues
9. Are there any other ways you recalling hearing about NorthWestern's programs?
10. [IF Q10 = 1)] Whatever ways did you hear about NorthWestern Energy's programs? RECORD RESPONSE.

1.1.3.2.1. Training and Education

[All]

11. Would you like to get more information from NorthWestern Energy about any of the following: [MULTIPLE RESPONSE]
    1. Energy programs?
    2. Educational opportunities?
    3. Workshops or events on energy efficiency?
    4. None of the above (if no to 1, 2, 3)
    8. Don't know
    9. Refused
12. [IF Q11 = 1, 2, OR 3] Which of the following are good ways for you to get energy efficiency information from NorthWestern Energy? [Read all. Multiple responses.]
    1. By phone
    2. By US mail
    3. By e-mail
    4. At a community event
    5. At a workshop, seminar, or classroom event

6. At a webinar
7. Anything other way? Specify _____
8. Don't know
9. Refused

Q13. [Intentionally Left Blank]

1.1.3.3. Program Participation

[Ask All]

13. Regarding your decision to do your [Project Description], who initiated the discussion about this renewable project? Would you say… [READ]
    1. You initiated it
    2. A vendor or contractor initiated it
    3. The idea arose in discussion between you and a vendor or contractor
    4. (VOL) Other; Specify _____
    8. Don't Know
    9. Refused

14. How did you find the contractor who installed your [PROJECT DESCRIPTION] project? [SINGLE RESPONSE)
    1. The contractor contacted me
    2. Through NorthWestern's qualified installers list?
    3. Someone recommend the contractor to me
    4. Other (specify. If website, specify which website) _____
    8. Don't know
    9. Refused

15. Thinking back to the proposal stage, who was mainly responsible for preparing your [PROJECT DESCRIPTION] project proposal? Was it…
    1. Your engineer/ contractor / installer
    2. You or someone in your home or organization
    3. A joint effort by someone in your home or organization and your engineer/contractor/installer
    4. Other (Specify) _____
    8. (Vol) Don't know

9. (Vol) Refused

[SRBI: Create a skip pattern named Involved: If Q15=1 or 3 Involved=1, else Involved =0]

16. [IF INVOLVED=1] Did you receive advisory services from NorthWestern Energy program representatives in advance of preparing your project?

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

17. [If Q16 = 1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "NorthWestern staff provided useful and helpful advice.."

1 2 3 4 5 8. Don't know 9. Refused

1.1.3.4. Additional Project Support

Now let's talk about various sources of support for renewable projects.

18. Beside the incentive offered by NorthWestern, did you apply for funding from any of the following sources of funding or tax credits? [READ AND MULTIPLE RECORD

1. State of Montana Alternative Energy Revolving Loan
2. State of Montana Tax Credit
3. Property tax exemption
4. Federal funding

18a. [IF Yes] Which type of Federal funding? _____

5. Anything else?

19. [SPECIFY] What else? _____ [IF Q18 = 1 Did you receive all, some, or none of the funding you applied for through the State of Montana Alternative Energy Revolving Loan?

1. All
2. Some
3. None
8. (VOL) Don't Know
9. (VOL) Refused

20. [IF Q18 = 2] Did you receive all, some, or none of the State of Montana Tax Credit?

1. All
2. Some
3. None
8. (VOL) Don't Know

9. (VOL) Refused

21. [IF Q18 = 3 Did you receive all, some, or none of the property tax exemption?

1. All
2. Some
3. None
8. (VOL) Don't Know
9. (VOL) Refused

22. [IF Q18 = 4] Did you receive all, some, or none of the Federal funds that you expected?

1. All
2. Some
3. None
8. (VOL) Don't Know
9. (VOL) Refused

23. [IF Q18 = 5 Did you receive all, some, or none of the [Other Specified] funding? [CATI PIPE IN OTHER SOURCE]

1. All
2. Some
3. None
8. (VOL) Don't Know
9. (VOL) Refused

24. Did a NorthWestern Energy representative come and inspect the work done through the program?

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

25. [If Q24 =1] Using a scale from 1 to 5, where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with this statement: "The inspector was on time and courteous."

1. 2. 3. 4. 5. 8. Don't Know 9. Refused

1.1.3.5. Motivations

[All]

People undertake renewable project for various reasons. I'm going to read five possible reasons for installing a renewable energy system Please rate each on a scale from 1 to 5, where 1 is the "not at all important" to you and "5" means it is "very important" to you.

As a reason for installing renewable energy systems, how would you rate….

26. To see how well the technology works?
27. To reduce electric energy costs?
28. To provide back-up power in case of a NorthWestern power outage?
29. To be independent of the utility, off the grid?
30. Environmental concerns? [IF NEEDED: including global warming]

I'm going to read a few reasons why you might have installed renewable energy equipment through NorthWestern's renewable energy program. Please let me know with a "yes" or "no" whether each reason applies.

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

31. Because your contractor recommended it
32. Because the decision to purchase the system depended on getting an incentive
33. Because you knew equipment NorthWestern would offer a incentive for must be reliable
34. Because you had a good experience with another NorthWestern program
35. To save money on your utility bill
36. To reduce your reliance on NorthWestern for electricity
37. To increase your property value

1.1.3.6. Clarity of Information

[All Unless Otherwise Specified]

I have a few questions about the information you received about renewable energy projects. For the following questions, please use a five-point scale, where 1 means "the information was not at all clear," and 5 means "the information was very clear." If you didn't get information on a topic, please let me know. How clear was the information…

1 2 3 4 5 6. Didn't receive information 8. Don't know 9. Refused

[CATI NOTE: Create questions 38a. to 42.a as follows: Any time a customer responds with a "1" or a "2" (low agreement), please ask, "Why did you say that?"]

How clear was the information you received on…

38. How to follow up with NorthWestern if you had questions or concerns
39. How to decide if a renewable project is appropriate for my home/business?
40. How to identify a qualified installer?
41. How the net metering process works?
42. The fact that NorthWestern Energy representatives may make on-site visits to verify projects prior to incentive payment

[ASK Q45 to Q49 ask only if INVOLVED = 1]

READ: Because you were involved during project development, I have a few questions about how clear you found NorthWestern's information related to that process to be:

1 2 3 4 5 6. Didn't Receive Information 8. Don't Know 9. Refused

43. How to conduct a site assessment
44. How to create a project proposal
45. How to obtain an equipment bid
46. How to investigate other issues such as zoning restrictions, lease agreements, insurance policy modifications, and engineering issues
47. How to submit a proposal

[ALL]

48. What, if any, other information would have been useful to you as you worked on your project?

1. Gave response
2. None
8. (VOL) Don't Know
9. (VOL)) Refused

1.1.3.7. Provision of Program Services

[Conditional Skips Apply in This Section]

Thinking about your project from beginning to end, Please use the same five-point scale from "not at all agree" to "completely agree" to rate your agreement with the following statements. If you don't have an opinion, let me know.

Rating: 1 2 3 4 5 8. NA 9. Don't Know

PLEASE RATE YOUR AGREEMENT WITH THE FOLLOWING

49. [IF INVOLVED =1] The site assessment conducted was informative and helped to design the system

50. [IF INVOLVED =1] The system design process was straightforward and went smoothly

51. [IF INVOLVED =1] The amount of time for acceptance of our proposal was both reasonable and expected.

52. [IF INVOLVED =1] Setbacks, like zoning restrictions, lease agreements, insurance policy modifications, and/or engineering issues, were readily solved

53. [ALL] The installer acted professionally and provided great customer service.

54. [ALL] The system installation work went smoothly with no big surprises.

55. [ALL] Net metering was easy to arrange.

56. [ALL] My installers were both courteous and helpful

57. [ALL] Please think about the energy output you expected from your system. How does the actual annual energy output of your system compare to the system's rating? Does it

    1. Meet your expectations
    2. Exceed expectations
    3. Fall short of expectations
    8. (VOL) Don't Know
    9. (VOL) Refused

58. Was there anything that raised questions or concerns about doing a renewable energy project?

    1. Yes 2. No 8. Don't Know 9. Refused

59. [IF Q58 = 1] What raised questions or concerns? [READ IF NECESSARY, MULTIPLE RECORD]

    1. Time involved/ possible delays
    2. Incentives not enough
    3. Difficulty of participating
    4. Not sure it would be worth it
    5. Confusing
    6. Hard to do things a new way
    7. Other (specify)
    8. Don't know
    9. Refused

1.1.3.8. Free Ridership, Leakage and Spillover for Renewable Incentive Program

[ALL]

I'd like to ask a few questions about what you most likely would have done had incentives not been received from NorthWestern Energy for the **[Measure Name – piped in from data file].**

60. Which of the following three alternatives is most likely: Would you have:
    1. One, put off installing your renewable energy system for at least one year
    2. Two, installed a smaller system with less output and paid the full cost yourself
    3. Three, installed the exact same system anyway, and paid the full cost yourself.
    4. Or done something else (specify) _____
    8. (VOL) Don't know
    9. (VOL) Refused

61. Now I would like to ask about the role that NorthWestern's program played in your decision to purchase the __[Measure Type]__. I'm going to read a list of things that may have influenced your decision to buy the __[Measure Type]__. For each one, please indicate how much of a role it played in your decision, where '1' means it played "no role at all" and "5" means it played "a major role." Let me know if an item doesn't apply to you.

    1 2 3 4 5 6. Not Applicable 8. Don't Know 9. Refused

62. The incentive you received
63. Information on NorthWestern Energy's website
64. Other information from NorthWestern Energy
65. A NorthWestern qualified installer
66. An engineer contractor or other installer
67. NorthWestern Energy representative
68. ANYTHING ELSE? (SPECIFY_____)

1.1.3.8.1. Leakage

69. Are you still using the **[MeasureType],** that is, is it still in place and working?

    1. Yes 2. No 8. Don't Know 9. Refused

70. [If Q69 = 2] What is the problem or issue? (RECORD RESPONSE) _____
    1. Gave Response
    8. Don't Know

9. Refused

71. [If Q69=2] Do you still have it?

1. Yes
2. No
8. Don't Know
9. Refused

72. [If Q71= 2 In what city and state is it now located? RECORD.

1. Gave Response
8. Don't Know
9. Refused

1.1.3.8.2. Renewable Energy Project Specific Spillover

73. Since installing your **[MeasureType]** have you bought and installed any additional renewable energy equipment for your location that didn't qualify for a NorthWestern incentive?

1. Yes
2. No
8. Don't Know
9. Refused

74. (IF Q73 = 1) How would you rate the influence of NorthWestern on your decision to buy this additional renewable energy equipment at the full price? Please use a five point scale where 1 means "no influence" and 5 means "major influence"

1 2 3 4 5 8. Don't Know 9. Refused

1.1.3.8.3. General Spillover

75. Now I'd like you to think about other efficient items such as lighting and fixtures; high efficiency appliances; electronics; insulation and the like. Since completing your renewable energy project, have you purchased and installed any energy efficient equipment or building weatherization materials?

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

[If Q75 = 1] What did you install without getting a rebate from NorthWestern?

75a. Item 1 Specify:_____

75aa. Item 1 Quantity: And how many did you install ##

75b. Item 2 Specify:_____

75bb. Item 2 Quantity: How many did you install ##

75c. Item 3 Specify:_____

75cc. Item 3 Quantity: How many did you install ##

75d. Item 4 Specify:_____

75dd. Item 4 Quantity: How many did you install ##

75e. Anything else, Specify_____

76. [If ANY YES TO 75a to 75e] Why didn't you make [this/these] purchase through the NorthWestern program? [PROBE TO CODE; DO NOT READ]

1. Didn't think it qualified for a rebate
2. A gas measure and they don't get gas from NorthWestern
3. An electricity measure and they don't get electricity from NorthWestern
4. (Responded to Q 75 incorrectly) Did go through NorthWestern program after all
5. Other, Specify _____
8. Don't Know
9. Refused

77. [If Q75 = 1 or Q76=4] How would you rate the influence of NorthWestern on your decision to install efficiency items on your own? Please use a five point scale where 1 means "no influence" and 5 means "major influence"

1 2 3 4 5 8. Don't Know 9. Refused

1.1.3.9. Future Participation

[All]

We are getting close to wrapping up. Again, thank you for helping us to evaluate the E+ Renewable Energy Program.

78. When presented with an opportunity in the future to participate in a NorthWestern's energy efficiency or renewable programs, how likely is it you would decide to do so? Please use a five-point scale, where 1 is not at all likely and 5 is very likely.

1 2 3 4 5 8. Don't Know 9. Refused

79. [Intentionally Left Blank]

1.1.3.10. Residential Demographics

ASK THIS SECTION IF SAMPLE TYPE IS 1 (Residential); ELSE SKIP TO FIRMOGRAPHICS

My final questions are about your home and household, and will only be used to compare your program experiences with other participants.

80. Do you own the home where the system was installed?

1. Yes
2. No
9. Refused

81. What type of home do you live in, is it a…

1. Single-family home, not including manufactured or mobile homes
2. 2-4 unit home (i.e. duplex, triplex, or fourplex)
3. Multi-family home with 5 or more units
4. Mobile home (doublewide or singlewide)
8. (VOL) Don't Know
9. (VOL) Refused

82. How many people live in your home?

1. One
2. Two
3. Three
4. Four
5. Five or more
8. Don't know
9. Refused

83. What is the approximate size in square feet of your home? (DO NOT READ, BUT PROMPT WITH RANGES IF UNSURE)

1. Less than 1,400 sq ft
2. From 1,400 to 2,500 sq ft
3. From 2,500 to 3,500 sq ft
4. From 3,500 to 5,000 sq ft
5. 5,000 sq ft or more
8. (VOL) Don't know

9. (VOL) Refused

84. What is your age? (READ ONLY IF NECESSARY)

1. Under 25 years
2. 25 through 34 years
3. 35 through 44 years
4. 45 through 54 years
5. 55 through 59 years
6. 60 through 64 years
7. 65 years or older
9. (VOL) Refused

85. What is the highest level of education you have completed? (READ LIST)

1. Less than a college degree
2. Associates degree
3. Bachelors degree
4. Graduate or professional degree
9. (VOL) Refused

86. What is your household's annual income? (READ LIST)

1. Less than $20,000
2. $20,000 up to $30,000
3. $30,000 up to $40,000
4. $40,000 up to $50,000
5. $50,000 up to $60,000
6. $60,000 up to $70,000
7. $70,000 up to $80,000
8. Over $80,000
98. (VOL) Don't know
99. (VOL) Refused

87. Deleted – asked as Question 101

1.1.3.11. Firmographics

ASK THIS SECTION IF SAMPLE TYPE IS (Commercial)

My final questions are about your facility, and will only be used to compare your program experiences with other participants.

88. Is this organization a for-profit business or a not-for-profit organization?

1. For-profit
2. Not-for-profit
8. Don't know
9. Refused

89. What type of facility is this? Would you say the space is primarily an industrial facility or a commercial facility?

1. Industrial
2. Commercial
3. Mixed industrial and commercial
8. Don't know
9. Refused

90. What is the primary business activity conducted at this facility? (DO NOT READ, SINGLE RESPONSE)

1. Office
2. Retail
3. Healthcare
4. Education
5. Warehouse
6. Grocery
7. Lodging
8. Restaurant
9. Industrial
10. Wastewater
11. Farming/Irrigation
12. Other, Specify _____
99. Refused

91. How many buildings are at this facility? ____ [RANGE 1-99, 98=98 OR MORE, 99=REFUSED]

92. What's your best guess as to the size of this facility — the approximate square footage of the space that is cooled or heated. (DISPLAY IF Q55>1: Please tell me the total of all the buildings.)

Is it…

1. Under 5,000 sq. ft.
2. 5,000 to just under 10,000 sq. ft.
3. 10,000 to just under 25,000 sq. ft
4. 25,000 to just under 75,000 sq. ft
5. 75,000 sq. ft. or more
8. (VOL) Don't know
9. (VOL) Refused

93. How long has this business occupied this location? ____ (IN YEARS)

RANGE 1-97 97. 97 or more 98. Don't Know 99. Refused

94. What year was the building constructed? (IF NEEDED: Your best guess is fine) _____

Range 1900 – 2012, where 1900 = 1900 or before, 2013 = Don't know, 2014 = Refused

[READ] We are about to wrap this up, would please tell me, if your organization has any of the following in place… 1. Yes 2. No 8. Don't Know 9. Refused

95. A designated energy manager or an energy management team?

96. A management directive to cut energy costs?

97. Energy use targets?

98. Contracts for equipment maintenance and servicing that require energy-efficiency?

99. Procedures or policies that encourage energy efficiency? [for example, thinking about energy efficiency when you purchase equipment]

100. [IF Q99 = 1] Are these written objectives or informal objectives?

1. Written
2. Informal
8. (VOL) Don't Know
9. (VOL) Refused

1.1.3.12. Wrap Up

[All]

101. Before I ask my last question, do you have any comments you would like to offer, that might be useful to NorthWestern Energy As It Seeks To Improve Its Program? (PROBE FOR CLARITY)

1. Gave Response
2. No
8. Don't Know
9. Refused

CATI PROGRAMMING NOTE: COPY QUESTIONS 161 TO END FROM THE PROGRAM FOR 5593

Note to interviewer – Even thought the survey has been long, please be as engaging and upbeat as you ask the following questions]

161. Thank you, this survey will help NorthWestern deliver cost-effective services to their customers. We're also offering an opportunity to have a field engineer visit your home to ensure the measures you installed are operating properly and providing you with maximum energy efficiency. The visit will take about 15 minutes and requires NO advanced preparation on your part. As thanks for your participation, you'll be entered into a drawing for one of sixty $100 VISA cash cards. Your chances of winning are about one in ten.

NorthWestern relies on these on-site visits to calculate how much energy is being saved and to measure the success of programs such as these. Your participation would be very much appreciated, so that NorthWestern can continue to offer money saving programs to customers such as yourself. May I have a field engineer call you to set up a time convenient to you? [IF NECESSARY REPEAT PURPOSE: TO INSPECT THE ITEMS INSTALLED]

1. Yes 2. No 8. Don't Know 9. Refused

161a. [IF Q161 = 2, 8, or 9] Oh, so sorry to hear that. Someone will be on site for only a short while. Are you sure you won't reconsider?

1. Yes, WILL participate in on-site visit (go to Q162)
2. No, will NOT participate in on-site visit

162. [If Q161 or Q161a= 1] What is the best number to reach you?

1. Gave Response
8. Don't Know
9. Refused

163. [If Q161 or Q161a=1] Is that a landline or a cell phone number?

1. Landline
2. Cell

9. Refused

164. [If Q161 or Q161a = 1] And what is the best time to call you?

1. Gave Response
8. Don't Know
9. Refused

165. [If Q161 or Q161a = 1] And your name?

1. Gave Response
8. Don't Know
9. Refused

[If Q161 or Q161a = 1] Thank you so much. That will be very helpful. Note, not everyone who volunteers will be called for a home visit. Volunteers who complete a home visit will be entered into the drawing for a $100 Visa cash cards. Home visits will be scheduled between May and July this summer. Winners will be notified after all visits have been completed.

That's it! Thank you for answering my questions, we really appreciate your help.

102. As part of this evaluation effort, the evaluation team will also make on-site visits to selected locations. On-sites are critically important to this evaluation because findings from both this phone survey and on-site inspections improve the quality of the programs NorthWestern offers. Would you be willing to have an on-site visit?

1. Yes
2. No
3. Maybe, I'll have to check (schedule call back)
8. Don't Know
9. Refused

103. [If Q104 = YES] What is the best number to reach you?

1. Gave Response
8. Don't Know
9. Refused

104. [If Q104 = YES] Is that a landline or a cell phone number?

1. Landline
2. Cell
9. Refused

105. [If Q104 = YES] And what is the best time to call you?

1. Gave Response
8. Don't Know
9. Refused

106. [If Q104 = YES] And your name?

1. Gave Response
9. Refused

[READ If Q104 = 1 or 3] Thank you so much. That will be very helpful. Not everyone who volunteers will be called. If your home or business is selected, you may be called within the next 30 days.

[READ IF Q104 = 2, 8, or 9] That's it! Thank you for answering my questions, we really appreciate your help.

107. [IF Q104 = 2 and Strata = Large] Can I let NorthWestern Energy program representatives know that you've declined?.

1. Yes [Verify contact info, name, and phone number]
2. No [Hard refusal for on-site]

1.2. Trade Ally Surveys

1.2.1. Omnibus Trade Ally Survey for Residential Preferred Contractors and Commercial Trade Allies

Survey	Trade Ally Type	SampleType_A	SampleType_B
Omnibus/SRBI	Irrigation Trade Allies	Irrigation	Irrigate2
Omnibus/SRBI	Commercial Motors		
	…Rewind	Rewind	Rewind2
	…Motors	Motors	Motors2
Omnibus/SRBI	Residential Insulation	Insulate	Insulate2
Omnibus/SRBI	Commercial Lighting	Lighting	Lighting2
Omnibus/SRBI	Heating & Cooling and Other	HVAC_Other	HVAC2
	…Residential		
	…Commercial		
Renewable TAs is separate instrument			

Respondents may fill more than one SampleType quota.

Commercial motors contacts include: motor dealers and green motor rewind shops.

Lighting contacts include: Lighting Distributors; Lighting Contractor; Lighting, Other (manufacturer's rep, consultant, general contractor, etc)

1.2.1.1. Sample Variables: Sample Type A

Contacts have been initially assigned to a SampleType_A based on information from the implementer (KEMA). However, we'd like SRBI to ask each Respondent within the pre-defined strata what product areas (contracting services) they offer. If the respondent provides only one service/product then (in addition to the "All" questions, the respondent will skip only the one set of "product/service" questions.

However, if the respondent works in more than one of the services/product areas (Q3), SRBI will create skip patterns to carry these respondents through all appropriate "product/service" question sub-sets related to their business.

Because some of our contacts are likely to sell or service multiple product areas, using this process may enable SRBI to fill the quota defined for each of the individual product/service areas (defined in Table above) with fewer completed surveys. Responses to Q3 should be used to assign each contact to multiple "sample types" as appropriate, for example, one contact who installs lights and insulation would be assigned to skip patterns 'Light2' and 'Insulate2' (See below for details)

Initial Service/Product Areas are defined in the call list using variable = "SampleType_A" (provided by implementer info). These designations initially define the 'sample' for each subgroup. We suggest loading the smallest sample groups into the CADI first.

a. "Insulation"
b. "Irrigator"
c. "Motors" (some with contact names, others not)
d. "Rewind" (some with contact names, others not)
e. "Lighting"
f. "HVAC_Other" - Includes HVAC and other equipment/service providers not flagged for groups above

1.2.1.1.1. General SRBI instruction

There are a number of five-point agreement questions. Any time a customer responds with a "1" or a "2" (low agreement), please ask, "Why did you say that?"

Please add "don't know" and "refused" response options to questions.

1.2.1.1.2. Introduction

Hi, my name is ___ and I'm calling on behalf of NorthWestern Energy's energy efficiency programs. Your company is listed as a trade ally that provides products or services that qualify for customer rebates through NorthWestern's E+ or other energy efficiency programs. NorthWestern is evaluating their efficiency efforts. Feedback from you will help us to improve these programs.

If not the right person, find out (enter info) who would be the best person to call back.

When would be the best time to call back?

[IF ASKED: THIS INTERVIEW TAKES ABOUT 15 MINUTES.]

1.2.1.1.3. Verify Program Participation [All]

1. First, I'd like to verify that within the past two years you have you been involved with sales or services that qualify for rebates or incentives from NorthWestern Energy's efficiency programs?
    1. Yes → Skip Q2 and continue with the survey per conditionals
    2. No → Go to Q2
    3. (VOL) Don't Know → Skip Q2 and continue with the survey per conditionals
    4. (VOL) Refused → Skip Q2 and continue with the survey per conditionals
2. [IF Q1=2 THE R IS A NOT ACTIVE Why is that you haven't been involved with any sales that qualify for NorthWestern's efficiency programs?

1. Product lines we carry (or services we offer) don't quality for rebates
2. Didn't know about rebates on offer
3. Our customers aren't interested in energy efficiency
4. Other, Specify _____

[IF Q1=2] SAY: Thank you, these are all the question I have. Have a nice day….

1.2.1.1.4. Business Products and Services

[All, from Here On "All" Refers to "All Who Self-Identified as a Program Participant"]

3. [PIPE IN "COMPANY" FOR INTERVIEWER TO USE WHILE ASKING THIS QUESTION, SOME PRODUCT AREAS OR SERVICES WILL BE OBVIOUS FROM THE NAME, AND THE INTERVIEWER CAN VERIFY THOSE PRODUCT AREAS, BUT THEN ASK FOR A COMPLETE LISTING OF OTHER POSSIBLE PRODUCTS AREA] Which of the following product areas does your business offer? [READ, Multiple Response Allowed]

1. Lighting [IF CHECKED, CREATE "LIGHT2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
2. Heating, air conditioning, and/or ventilation [IF CHECKED, CREATE "HVAC2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
3. Boilers / hot water heating [IF CHECKED, CREATE "HVAC2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
4. Insulation [IF CHECKED, CREATE "INSULATE2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
5. Irrigation [IF CHECKED, CREATE "IRRIGATE2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
6. Motors [IF CHECKED, CREATE "MOTORS2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]
7. Offers no product

3b. [IF Q3=6 (MOTORS)] is selected, ask follow-up] Do you also provide motor rewind services? [IF CHECKED, CREATE "REWIND2" AND SET TO "1," NEW VAR TO DRIVE SKIPS AND CALC QUOTAS]

ASK IF GROUP = LIGHT2, HVAC2, MOTORS2, REWIND2, IRRIGATE2

3a. Do you sell controls?

1. Yes
2. No
8. Don't Know
9. Refused

4. [All = Light2 OR HVAC2 OR Insulate2 OR Irrigate2 OR Motors2 OR Rewind2]
    1. Do you provide architectural, engineering, and/or mechanical contracting services?
    2. Do not provide any of these services
    3. Architectural
    4. Engineering
    5. Mechanical
    6. Other (Specify)_____
    8. Don't Know
    9. Refused

5. Do you serve residential, commercial or both types of customers?
    1. Residential only [Create Skip Pattern "Res_TA," if selected set equal to '1']
    2. Commercial only
    3. Both residential and commercial [Add to "Res_TA," if selected set equal to '1']
    8. Don't Know (PROBE TO AVOID ACCEPTING THE Don't Know RESPONSE: Do you serve households, or businesses, or both?) ASSIGN TO RES HVAC IF Don't Know, AFTER THE PROBE
    9. Refused [ASSIGN TO RES HVAC IF REF AFTER THE PROBE]

Note: Q5 is used to skip respondents into a RES TA process questions (RES TA have to register to be on a "preferred" contractor list, COM TA's don't)

6. In how many locations throughout Montana does your company provide customer services? Your best guess is fine. (READ IF NECESSARY, PROMPT: Would you say…) [Interviewer note – A company that has 2 customer facing business in one town would count at 2 locations, etc.]
    1. 1 location
    2. 2 to 5 locations
    3. 6 to 10 locations
    4. 11 to 20 locations
    5. 21 to 50 locations
    6. Over 50 locations
    8. Don't Know
    9. Refused

7. And thinking about the customer area you cover from your location, what is the furthest round trip distance you typically travel to serve a customer?

[Range: 1-997 Miles, 997=997 or more, 998=Don't Know, 999=Refused]

1.2.1.1.5. Program Awareness

[Ask All, Unless There is a Separate Conditional]

[READ] People hear about NorthWestern's rebate or other energy efficiency programs through a variety of ways. Through which of the following ways have you heard about their program?

[FOR Q8 to Q15]: 1. Yes 2. No 8. Don't know 9. Refused

8. Event or meeting attended by a NorthWestern representative
9. NorthWestern Energy's website
10. NorthWestern mailing, brochure, insert, or advertisement
11. Contacted NorthWestern
12. Equipment vendor, contractor, or other building professional
13. Friends, neighbors or colleagues
14. Are there any other ways you recall hearing about NorthWestern's programs?
15. [IF Q14 = 1)] How else did you hear about these programs? RECORD RESPONSE.

1.2.1.1.6. Training and Education

[All]

16. How did you learn about NorthWestern's specific requirements for their E+ or other efficiency programs? [Multiple responses allowed, probe to code]
    1. Event or meeting sponsored by NorthWestern
    2. NorthWestern Energy's website
    3. NorthWestern mailing, brochure, insert, or advertisement
    4. Direct contacted with NorthWestern
    5. Equipment vendor, contractor, or other building professional
    6. Other [IF OTHER, Specify _____]
    8. Don't Know
    9. Refused
17. Would you like to get more information from NorthWestern about any of the following: [MULTIPLE RESPONSE]
    1. Energy efficiency programs?
    2. Energy savings opportunities?
    3. Workshops or events on energy efficiency?

4. None of the above [IF NO TO ALL 1, 2 AND 3]
8. Don't know
9. Refused

18. [IF Q16 = 1, 2, OR 3] Which of the following are good ways for you to get energy efficiency information from NorthWestern? [READ ALL. Multiple Responses.]
    1. By phone
    2. By US mail
    3. By email
    4. At a community event
    5. At a workshop, seminar, or classroom event
    6. At a webinar
    7. Anything other way? Specify _____
    8. Don't know
    9. Refused

[IF SAMPLE TYPE =Motors2 OR Rewind2]

[READ] I'm going to ask several questions about energy-efficient equipment that qualified for a rebate through two NorthWestern Energy programs: Motor Rebates and Business Partners. The E+ Motor Rebate Program that ended last year offered rebates for NEMA Premium motors ranging from 1 hp to 200 hp. The E+ Business Partners Program offers rebates on larger motors and energy-efficient drives.

For Q19 and Q20: 1. Not at all agree 2 3 4 5. Completely Agree 8. Don't Know 9. Refused

[IF GROUP = MOTORS2]

19. Using a 1 to 5 scale where, 1 means "not at all agree" and 5 means you "completely agree," please rate the following statement: "When rebates for efficient motor are offered, my customers are much more likely to purchase a high-efficiency motor."

[IF GROUP = REWIND2]

20. Using a 1 to 5 scale, where 1 means "not at all agree," and 5 means you "completely agree," please rate the following statement: "When rebates for efficient motor are offered, my customers are much more likely to consider energy efficient motor rewind options."

1.2.1.1.7. Knowledge and Awareness

[IF GROUP= Light2 OR HVAC2 OR Insulate2 OR Motors2 OR Irrigate2 OR Rewind2]

21. Does the staff in your firm receive any training about how to talk to customers about the advantages of energy efficiency?

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

22. When you're talking with potential customers, who typically brings up the topic of utility rebates? (DON'T READ, Probe for 'Other' response if options don't apply.)

    1. Almost always Respondent (trade ally) initiated
    2. Almost always Customer initiated
    3. Mostly Respondent (trade ally) initiated
    4. Mostly Customer initiated
    5. About half Respondent and half Customer
    6. (VOL) Other (Specify)_____
    8. Don't Know
    9. Refused

23. Do you contact your customers on a regular basis to tell them about current rebate or other NorthWestern's program opportunities?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

24. [IF Q23=1] How often do you let them know about NorthWestern's rebates?

    1. Once a month
    2. Once a quarter
    3. 2 times a year
    4. Once a year
    5. Other (Specify) _____

25. Have you ever visited NorthWestern Energy's website?

    1. Yes
    2. No

8. Don't Know
9. Refused

26. [IF Q25=YES] Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with this statement:

"The information I was looking for on NorthWestern's website was both easy to find and helpful."

1. Not at all agree 2 3 4 5. Completely agree 8. Don't Know 9. Refused

27. [IF Q26=1 OR 2] Why do you say that? [RECORD RESPONSE]

1. Gave Response
8. Don't Know
9. Refused

28. [IF Q25=1]Please tell if you used this website for any of the following business-related reasons… [Multiple Response]

1. For information on available rebates or audits
2. For money saving ideas
3. For how-to-videos
4. For information on how to contact NorthWestern
5. Information on educational events
6. To print out rebate forms
7. Any other reasons (SPECIFY?)
8. Don't know
9. Refused

1.2.1.1.8. Equipment Stocks

[Ask If Group = Light2, or HVAC2, or Motors2, or Irrigate2]

[For Group = Insulate2 GOTO Q40] [For Group =Rewind2 we are already going to Q50 per the skip above Q21]]

Now let's talk about the equipment you stock and sell…

30. Which of the following best describes the equipment you have in stock? [SELECT ONLY ONE]

1. Stock typically includes high-efficiency or EnergyStar rated equipment that qualifies for NorthWestern's rebates
2. Stock typically includes standard or unrated equipment, when needed for rebates we order in the high-efficiency equipment
8. Don't Know
9. Refused

31. Do you typically sell a range of equipment that gives customers a GOOD, BETTER or BEST option to buy?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

32. [IF Q31=1] Would you agree that BETTER and BEST equipment options are **typically** more energy efficient than the "GOOD" option?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

33. [IF Q31=1]When selling equipment, what do you suggest **first** to customers, the GOOD, BETTER or BEST option?
    1. Good
    2. Better
    3. Best
    8. Don't Know
    9. Refused

34. [IF Q30= 1] What percentage of the equipment you sold in the past two years would you categorize as "high-efficiency" or "EnergyStar qualified" equipment? [Interviewer note: try to get a single number, record a range only if they just can't come up with a single figure]
    [Range=1-100]
    1. Gave Response
    8. Don't Know
    9. Refused

35. [IF Q30 = 1 or 2] What percentage of the equipment you routinely stock would you categorize as "high-efficiency" or "EnergyStar qualified" equipment? [Interviewer note: try to get a single number, record a range only if they just can't come up with a single figure]
[Range=1-100]

    1. Gave Response
    8. Don't Know
    9. Refused

36. In the past two years, do you recall ever discouraging a customer from ordering the high-efficiency equipment option?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

37. [IF Q36=Yes] Why is that? [DO NOT READ, MULTIPLE RESPONSES ALLOWED, PROBE TO THE NEGATIVE]

    1. Long wait: too long for delivery
    2. Too Complex: installations are too difficult
    3. Not Reliable: Less reliable than most standard efficiency equipment
    4. Not Reliable: Customers complain about equipment
    5. Lack of Knowledge: don't have enough information for customer
    6. Lack of Knowledge: don't know enough about codes
    7. Other, Specify.
    8. Don't Know
    9. Refused

1.2.1.1.9. Do Customers Apply for Rebates

[Follow Conditional 'If' Statements]

[IF GROUP = LIGHT2, HVAC2, MOTORS2, OR IRRIGATE2]

38. In the past two years have you installed high-efficiency equipment that qualifies for a rebate from NorthWestern, yet the rebate was not applied for?

    1. Yes
    2. No

8. Don't Know
9. Refused

39. [IF Q38=1] Under what circumstances might this happen?
[DO NOT READ, PROBE: Any other reasons? Multiple responses allowed]
    1. Not aware of the rebate at the time: TA didn't know about the rebate or program
    2. Customer isn't eligible: Very large customers, wrong fuel type
    3. Applying takes too long: Application process too time consuming
    4. Too difficult: Application process too difficult
    5. Rebate is small: Not worth the bother – too little money
    6. Long wait: Long wait for rebate
    7. Other (Specify)_____
    8. Don't Know
    9. Refused

[IF GROUP] = INSULATE2

40. As far as you know, do your customers install levels of insulation that qualify for a NorthWestern Energy rebate, yet the customer doesn't apply for a rebate?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

[ASK IF GROUP =[INSULATE2]

41. When a customer is considering insulating, do you typically suggest they install insulation at locations and in the quantities that meet NorthWestern Energy's requirements for rebates, or do you wait for the customer to show interest in qualifying for the rebate?
    1. Typically suggest to customer
    2. Wait for the customer to show interest.
    8. Don't Know
    9. Refused

[ASK IF GROUP = INSULATE2]

42. When discussing insulation with your customers, what benefits do you typically mention?
[READ ALL, MULTIPLE RESPONSE, PROBE: Anything else?]

1. Lower energy bills over time
2. Comfort
3. NorthWestern's rebate
4. High-quality of the product
5. Other (Specify)_____
8. Don't Know
9. Refused

[ASK IF GROUP = LIGHT2, HVAC2, MOTORS2, OR IRRIGATE2]

43. When a customer is considering an equipment purchase, do you typically suggest high-efficiency equipment options that qualify for a NorthWestern rebate, or do you wait for the customer to show interest in qualifying for a rebate?

1. Typically suggest to customer
2. Wait for the customer to show interest.
8. Don't Know
9. Refused

[ASK IF GROUP = LIGHT2, HVAC2, MOTORS2 OR IRRIGATE2]

44. When discussing high-efficiency equipment with customers, what benefits do you typically mention?
[READ ALL, MULTIPLE RESPONSE, PROBE: Anything else?]

1. Lower operation costs over time
2. Lower maintenance costs
3. NorthWestern's rebate
4. High-quality of equipment
5. Other (Specify) _____
8. Don't Know
9. Refused

1.2.1.1.10. Program Participation

[All]

45. When it comes to your customers participating in NorthWestern's rebate programs, is there anything that raises questions or concerns for you about their participating?

1. Yes
2. No

8. Don't Know
9. Refused

46. [If Q45= 1] What are your concerns? [PROBE FOR CLARITY] _____

47. When you sell products that qualify for a NorthWestern rebate, who typically prepares the rebate application is it you, your customer, or does the application process typically involve both of you?

1. Typically respondent prepares all or most of the application
2. Typically the customer prepares all or most of the application
3. Typically both respondent and customer – pretty half and half effort
4. Depends on the rebate: Specify: How is that? _____
8. Don't Know
9. Refused

48. [IF Q47 = 1 OR 3] Using a 1 to 5 scale, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with the following statement: "The rebate application process is simple to follow."

1. Not at all agree 2 3 4 5. Completely agree 8. Don't Know 9. Refused

49. [IF Q48=1 OR 2] Why do you say that? [RECORD RESPONSE]

1. Gave Response
8. Don't Know
9. Refused

[ALL]

Please think about the information you've seen about NorthWestern's efficiency programs. For the following questions, please use a five-point scale, where 1 means "the information was not at all clear," and 5 means "the information was very clear." If you didn't get information on a topic, please let me know. How clear was the information…. ?

[RANDOMIZE Q50-Q53, FOR Q50-Q53]
1. Info not at all clear 2 3 4 5. Info very clear 6. Didn't receive information/Not Applicable 8. Don't Know 9. Refused

50. …to read and understand

51. …about the equipment and measures that qualify for rebates

52. …about how to apply for rebates

53. …about how to contact program representatives if needed

[ALL]

54. Have you contacted NorthWestern Energy or its program representatives for any of the following reasons? Just let me know with a "yes" or "no" whether each reason applies. [READ ALL, Multiple responses permitted]

    1. To learn about how the rebate program works
    2. To learn about the status of an application
    3. To learn about the status of a rebate payment
    4. To resolve a problem
    5. Have you contacted them for any other reason?

54a. [IF Q54=5] And why was that? _____

[If any Q54 1 to 5 = Yes] Please indicate your agreement with the following statements, using a scale of 1 to 5, where 1 means "not at all agree," and 5 means "completely agree"

1 2 3 4 5 6. Not applicable 8. Don't Know 9. Refused

55. The program representatives addressed my questions in a timely manner.

56. When contacted, program representatives were both courteous and helpful.

1.2.1.1.11. Preferred Contractor Status

[Follow Conditionals]

[IF RES_TA=1]

Because you service residential customers, I'd like to ask you about NorthWestern's Preferred Contractor process.

57. Is your business on NorthWestern's Preferred Contractor list?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

[IF Q57=1] Using a 1 to 5 scale, where 1 means "not at all agree" and 5 means you "completely agree," please rate the following statements. If the question does not apply to you please let me know.

1. Not at all agree 2 3 4 5. Completely agree 6. Didn't receive information/Not Applicable 8. Don't Know 9. Refused

58. The process for becoming a Preferred Contractor was easy to do.

59. Being a Preferred Contractor has helped us to grow our business.

60. The program experience as a preferred contractor has been positive.

We are getting close to the end, as we begin to wrap up, NorthWestern would like to know how program changes affects you and your customers…

1.2.1.1.12. Impact of Program Changes on Business

[ASK ALL]

The list of equipment or other measures that qualify for rebates changes periodically. Using a 1 to 5 scale where 1 means "not at all agree" and 5 means "completely agree," please rate your agreement with the following statements. If the questions don't seem to apply to you, just let me know.

[RANDOMIZE Q61-Q67, FOR Q61-Q67] 1. Not at all agree 2 3 4 5. Completely agree 6. Not Applicable 8. Don't Know 9. Refused

61. NorthWestern provides updates to the qualifying equipment list in a timely manner
62. Keeping up with program changes doesn't takes much staff time
63. My staff DO NOT get confused by the changes to the qualifying equipment list
64. My customers DO NOT get confused by the changes to the qualifying equipment list
65. My customers benefit from additions to the qualifying equipment list
66. NorthWestern revises the qualifying equipment list too frequently
67. [IF GROUP = LIGHT2] And please rate your level of agreement with this statement: "When NorthWestern redefined some custom lighting measures as prescriptive measures in Fall 2011 it was easy for us to adapt our marketing efforts."

1.2.1.1.13. Specific Irrigation Questions

[READ IF GROUP = IRRIGATE2]

We've talked about several topics so far, and we appreciate your time. Since the E+ Irrigator program targets a unique market, I'd like to ask you about that market.

[ASK Q68 THROUGH Q72] IF GROUP=IRRIGATE2

68. Do your irrigator customers ever ask you about installing a variable speed drive for "soft starts" as an add-on to an existing constant speed drive?
    1. Yes
    2. No
    8. Don't Know
    9. Refused
69. [IF Q68=1] For these customers, what do you typically recommend they do? [SPECIFY]_____

70. About what proportion of customers using VSD [variable speed drives] in irrigation systems are using them for "soft starts?" with an existing constant speed drive?

    [Range: 1-100, 101= (VOL) Resp does not deal with VSD's Don't Know=998, Refused=999]

71. What challenges, if any, are you having promoting irrigation equipment that qualifies for NorthWestern's rebates? [SPECIFY]_____

72. [If Q71 is answered] What changes in the program might help to address these issues [PROBE – are rebate levels appropriate to overall cost of equipment, payback, etc]? [SPECIFY]_____

1.2.1.1.14. Wrap up

[Ask If Group = Light2 or HVAC2 or Motors2 or Irrigate2 or Insulate2]

[For Rewind2 skip 73-76 and GO TO Q77]

73. What, if any, high efficiency equipment or measures would you like to see added to NorthWestern's list of rebated equipment? [PROBE FOR CLARITY] _____

    1. Gave Response
    2. No comments/None
    8. Don't Know
    9. Refused

74. [IF Q73 = 1] Why is that? [PROBES: Are rebates needed to move these items into the market?] [SPECIFY]_____

75. What, if any, equipment or measures would you like to see removed from the current list? [PROBE FOR CLARITY] _____

    1. Gave Response
    2. (VOL) No equipment/measure removal necessary

76. [IF Q75 = 1] Why is that? [PROBE: Are rebates no longer needed to move these items into the market?] [SPECIFY]_____

77. That is all of the questions I have. Before we sign off, is there anything else that you would like NorthWestern to know about its programs? [SPECIFY]_____

    1. Gave Response
    2. No comments
    8. Don't Know
    9. Refused

Thank you for your time. Your comments have been very helpful.

1.2.2. Trade Ally Survey – E+ Home Lighting Coupon and Buy-Down Retailers

1.2.2.1. Trade Ally Survey—

Table 1: E+ Home Lighting Coupon and Buy-Down Retailers

Survey	Trade Ally Type	Sub-Samples
CFL_Retailer/SRBI	CFL Coupon Retailers	Coupon
CFL-Retailer/SRBI	CFL Buy-Down Retailers	Buydown

If "BuyDown" = 1 skip pattern indicates "BUY-DOWN," contacts are stores that participated in a regional buy-down promotion.

If Coupon =1, skip pattern indicates "COUPON," contacts are retailers that participated in a coupon-redemption promotion.

If 'Both" = 1 ask both the Buy-Down and Coupon questions.

SRBI: The call list includes 2 indicator fields (if EQ to '1') for BuyDown and Coupon participants as well as a 'Both" field that flags a few retailers who participated in both types of lighting program promotions Contact names are provided for many of the retailers, but not all.

If customers should want a contact at NorthWestern Energy to verify the validity of the research effort, please have them call the NorthWestern Energy Customer Care Contact Center, 888-467-2669, preferably M-F between 7 a.m. and 6 p.m.

{Instructions to SRBI: Per sample dataset, request identified contact; in absence of an identified contact or as an alternative to the contact listed, request "store manager."}

Hi, my name is ___ and I'm calling regarding NorthWestern Energy's efficiency programs. I understand that you're ….

IF BUYDOWN=1

… a retailer that worked with Fluid Market Strategies, KEMA [say "kee-ma"] and/or NorthWestern Energy during their CFL light bulb promotions during 2010 or 2011 NorthWestern would like to learn about your store's experiences with these CFL promotions. Are you the right person to talk to about this? IF NO, collect appropriate contact's name (and location and phone number if at a different location).

IF COUPON=1

.. a retailer that participated in NorthWestern's in-store coupon promotion of CFL bulbs during 2010 or 2011. NorthWestern would like to learn about your store's experiences with these CFL promotions. Are you the right person to talk to about this?

IF NO, collect appropriate contact's name (and location and phone number if at a different location).

IF Both=1

….. a retailer that participated in NorthWestern's price buy-down and in-store coupon promotions of CFL bulbs during 2010 or 2011. NorthWestern would like to learn about your store's experiences with these CFL promotions. Are you the right person to talk to about this?

IF NO, collect appropriate contact's name (and location and phone number if at a different location).

[IF ASKED] This interview takes about 5 minutes. Is now a good time to talk, or may I make an appointment for a later time?

FOR THE FOLLOWING SET OF QUESTIONS, ASK ALL

I'm going to read a few possible reasons why retailers might participate in a CFL promotion. Using a one-to-five scale, where 1 means you "strongly disagree" and 5 means you "strongly agree," please rate each as a reason for your store's participation in NorthWestern's CFL promotions.

My store participated in the promotion: 1 2 3 4 5 8. Don't Know 9. Refused

1. To increase the sales of CFLs?
2. To increase store traffic?
3. To increase overall store sales?
4. To take advantage of free advertising?
5. To help customers receive the benefits of compact fluorescent lighting?

During your participation in the CFL promotion, which of the following did your store do?

1. Yes 2. No 8. Don't Know 9. Refused

6. Moved the CFLs to a prominent location?
7. Mentioned the CFLs in your advertising?
8. Mentioned the promotion name in store advertising?
9. Trained employees about promotion procedures?
10. Helped customers buy the compact fluorescent lights that were right for them?
11. Encouraged customers to buy ENERGY STAR lights in the future?
12. Did participating in the promotion seem to increase store traffic?
    1. Yes
    2. No
    8. Don't Know
    9. Refused
13. Did participating in the promotion increase your store's sales of CFLs?

1. Yes
2. No
8. Don't Know
9. Refused

IF Q13 = YES THEN ASK Q14 and Q15

14. [IF Q13 = 1] By about what percent did sales increase? _____

[Range = 0 to 100 101 = Don't know 102 = Refused]

15. [IF Q13 = 1] Would you say your answers about CFL sales are based on a general impression of sales activity during the promotion, or on a comparison of sales data, or something else?

1. Impressions
2. Sales data
3. (VOL) Both
4. Something else, specify _____
8. Don't know
9. Refused

[ALL]

Please think back on your interactions with the people who brought the CFL promotion opportunity to you in 2010 or 2011 – we'll call them the promotion administrators.

Using the same one-to-five scale, where 1 means "strongly disagree" and 5 means "strongly agree," please rate the following statements:

1 2 3 4 5 6. No information/not applicable 8. Don't Know 9. Refused

16. Information provided clearly outlined the requirements and procedures you were to follow related to the CFL promotion.

17. [IF BuyDown = 1]It was easy for your staff to provide the sales data requested by the Fluid Market Strategies.

18. [IF Coupon = 1]It was easy for your staff to provide coupon-use information to NorthWestern Energy.

19. Your store's participation in the promotion was worth the effort.

20. Your store received clear instructions on how to fill out the participation agreement.

21. Your store knew how to contact the promotion administrators if needed.

22. The promotion administrators addressed any questions you had.

23. [IF BuyDown = 1]It was easy for your staff to provide the sales data requested by the Fluid Market Strategies had in a timely manner?

IF COUPON = 1 ASK Q24 to Q26

Now thinking specifically about handling the in-store coupons for CFLs, please use the same scale to rate your agreement with three short statements. Please use a five-point scale where 1 means you "strongly disagree" and 5 means you "strongly agree."

1 2 3 4 5 8. Don't Know 9. Refused

24. You received clear information about how store staff were to process the coupons.

25. It was easy to return completed coupons to the promotion administrators.

26. You received your payment for the coupons in a timely manner.

[ALL]

How satisfied were you with the following aspects of the promotion? Please use a five-point scale, where 1 is "not at all satisfied" and 5 is "very satisfied."

1 2 3 4 5 8. Don't Know 9. Refused

27. Contact with promotion administrators

28. Promotion requirements and procedures

29. Completing the participation agreement

30. Obtaining an adequate supply of ENERGY STAR CFLs

31. The point-of-purchase materials

32. The newspaper ads

33. The promotion overall

34. [ALL] Would your store be willing to participate in the promotion in the future?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

35. [IF Q34 = NO AND (BUYDOWN = 1 OR COUPON = 1)] Why aren't you likely to participate again? [Do not read. Multiple response]

    1. Lack of availability of qualifying bulbs to meet customer demand
    2. I had inadequate contact with the promotion administrators.
    3. I didn't receive enough information about promotional details.
    4. I did not receive enough in-store promotional materials.

5. Multiple promotions caused confusion.
6. The bulbs were of poor quality.
7. Our customers were dissatisfied with the promoted bulbs.
8. Other, Specify _____
9. Don't know
10. Refused

36. [ALL] What, if any, changes would you like to see in the marketing of the promotion? [Do NOT READ. Multiple response]

1. No changes
2. More in-store signage, banners, and displays
3. More point-of-sale signage
4. Flyers to hand to customers as they enter the store
5. More radio, television, or newspaper advertising done by the NorthWestern of this program
6. Co-branding of your store's logo with NorthWestern Energy
7. Other – Specify _____
8. Don't Know
9. Refused

37. [ALL] What, if any, changes would you like to see in how the promotion is coordinated? [Do Not Read. Multiple response.]

1. No changes
2. Provide more lead time from first contact to program roll-out
3. Ensure we can get the bulbs when we need them.
4. Improve communication with promotion administrators
5. Have someone able to answer questions on the weekends (when more customers are likely to be shopping.
6. Reduce paperwork
7. Reimburse us for the coupons more quickly
8. Other, Specify _____
9. Don't Know
10. Refused

38. [ALL] What aspects of the promotion do you think worked really well at your store? [Do Not Read. Multiple response. Probe to get detailed response.]

    1. The bulbs were attractively priced.
    2. The promotions attracted customers to our store.
    3. The promotions enabled our store to sell more bulbs.
    4. The promotion administrators provided the support we needed, when we needed it.
    5. The promotional materials effectively marketed the program to our customers.
    6. The rebate amount was large enough to get customers to buy the promoted bulbs.
    7. Other, Specify _____
    8. Don't Know
    9. Refused

39. [IF BUYDOWN=1] For purposes of estimating energy savings, NorthWestern Energy and its regulators would like to know what percentage of all CFL bulbs you sold during 2010 and 2011 were bought by business customers and what proportion were bought by residential customers. What is your best estimate?

    a. Commercial percent_____ Range = 0 to 100, 101 = Don't know 102 = Refused
    b. Residential percent_____ Range = 0 to 100, 101 = Don't know 102 = Refused

40. IF BUYDOWN=1] And for estimating energy savings for the CFL buy-down promotions, NorthWestern Energy and its regulators would like to know what proportion of the **buy-down CFL** bulbs (those offered at reduced prices) were bought by your business customers and what proportion were bought by residential customers. What is your best estimate?

    a. Commercial percent_____ Range = 0 to 100, 101 = Don't know 102 = Refused
    b. Residential percent_____ Range = 0 to 100, 101 = Don't know 102 = Refused

41. [ALL] Do you have zip code information for customers who bought CFLs from your store?

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

42. [ALL] Do you have the telephone numbers for customers who bought CFLs from your store?

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

If your store were to share any customer information with NorthWestern Energy, NorthWestern Energy would treat it confidentially and use it only to address questions raised by its regulators.

43. [IF Q41=1] Would your store be willing to provide to NorthWestern Energy the zip codes for customers who purchased promotional CFLs?
    1. Yes
    2. No
    8. Not sure (would have to check)
    9. Refused

44. [IF Q42=1] Would your store be willing to provide to NorthWestern Energy the telephone numbers of customers who purchased promotional CFLs?
    1. Yes
    2. No
    8. Not sure (would have to check)
    9. Refused

[ASK ALL]

45. Would your store be willing to provide NorthWestern Energy with market demographic information about your customers as a whole? Again, NorthWestern Energy would treat such information confidentially and use it only to address questions raised by its regulators.
    1. Yes
    2. No
    8. Not sure (would have to check)
    9. Refused

IF Q43=1OR 8, OR Q44=1 OR 8, OR Q45=1 OR 8

46. Would you be willing to have someone on NorthWestern Energy's research team call you or someone else to discuss who is buying the CFLs?

1. Yes, someone can call me back. Name _____

Best number to reach you:_____

2. Yes, but call someone else. ⍰ Collect name and phone number of best person to call back.

a. Name:

b. Best number to call: _____

3. No

Those are all of my questions. Your responses will help NorthWestern Energy evaluate and improve its CFL promotions. Thank you for your time!

1.2.3. NorthWestern Energy Renewable Energy Installer Survey

Firm Name _____

Contact Name _____

Date Interviewed _____

Interviewer _____

1.2.3.1. Introduction

Hi, my name is _____ and I'm calling regarding NorthWestern Energy's renewable energy programs. We have you listed as an installer of renewable energy projects, such as PV or wind. Is that correct?

This interview will take about 10-15 minutes. Is now a good time to talk or can we make an appointment for a later time?

1. Which of the following types of renewable energy systems does your firm work with?

a. Solar _____

b. Hydro_____

c. Geothermal_____

d. Other _____

2. Which of the following services does your firm offer? Do you…

a. Specify equipment_____

b. Sell equipment _____

c. Install equipment _____

d. Maintain equipment _____

3. Do your customers include both residential and commercial facilities?

a. Residential _____

b. Commercial _____

c. Both_____

4. Have you installed both grid-inter-tied (net-metered) systems and stand-alone systems?

1. Grid-inter-tied (net-metered) systems only _____
2. Combination (grid-inter-tied and stand-alone) systems? _____
3. Other (specify) _____

About how many times in the past two years (2010-2011) have you installed renewable energy systems for customers of NorthWestern Energy? Your best guess is fine. _____

5. How did you find out NorthWestern Energy offers partial funding for renewable energy systems?

(DO NOT READ; Check all that apply)

01. Event or meeting attended by a NorthWestern Energy representative _____
02. NorthWestern Energy mailing, brochure, or bill insert _____
03. NorthWestern Energy advertisement in the newspaper or on the radio _____
04. NorthWestern Energy website _____
05. Made phone call to NorthWestern Energy _____
05. Equipment vendor or installer, or other professional _____
06. Attended Renewable Energy evening seminar sponsored by NorthWestern Energy _____
77. Other, (Specify)_____
88. Don't know/Don't remember _____

6. When you're talking with potential customers, who typically brings up the topic of utility rebates? (DON'T READ, Probe for 'Other' response if options don't apply.)

1 Almost always Respondent (trade ally) initiated _____
2 Almost always Customer initiated _____
3 Mostly Respondent (trade ally) initiated _____
4 Mostly Customer initiated _____
5 About half Respondent and half Customer _____
6. (VOL) Other (Specify)_____
8. Don't Know _____
9. Refused _____

7. Was it ever necessary to change the type of equipment from what the customer first had in mind in order to qualify for program incentives?

   Yes _____ No _____ Don't Know _____

   i. [IF YES] Can you give me some examples of the changes that have occurred?_____
   _____

8. NorthWestern Energy would like to know how well it accomplished its goal of getting clear program information into the hands of people like you. For the following questions, please use a five-point scale, where "1" is not at all clear and "5" is very clear.

   How clear was the information you received …

   a. That NorthWestern Energy offers funding for renewable energy installations _____
   b. That funding varies based on the system output _____
   c. About how to apply for funding _____
   d. About how to follow up if you had questions or concerns _____

9. Please rate the extent to which you agree or disagree with the following statements. Please use a one to five scale where 1 is "strongly disagree" and 5 is "strongly agree."

   a. The NorthWestern Energy funding increases the chances of installing renewable energy equipment _____
   b. The cost of renewable energy installations is too high even with partial funding _____
   c. The NorthWestern Energy's funding application process is relatively straightforward _____
   d. Renewable energy equipment is often high quality equipment _____
   e. Most renewable energy equipment is not readily available and takes too long to ship _____
   f. Most customers are concerned they won't be able to maintain or operate renewable energy equipment properly _____
   g. Most customers are worried renewable energy equipment won't save enough to warrant the extra cost _____

10. Now I'd like to read five possible reasons customers might have for installing a renewable energy system. I'd like you to rank them from 1 to 5, where 1 is the most common reason customers install systems and 5 is the least common reason.

    a. Concern about the environment (including global warming) _____
    b. Curiosity about the technology and how well it works _____
    c. Interest in reducing electric energy costs _____

d. As a back-up power supply in case utility provided power is lost _____

e. To be independent of the utility company _____

11. Was there anything that raised questions or concerns for you about any of your customers installing renewable energy equipment using NorthWestern Energy's program?

Y_____ N_____ Don't Know_____

a. If Yes] What? _____

12. Was there anything that raised questions or concerns for your customers about installing renewable energy equipment using NorthWestern Energy's program?

Y_____ N_____ Don't Know_____

a. If Yes] What? _____

13. Who prepared the funding application—you or your customer or both of you?

a. Installer prepared _____

b. Customer prepared _____

c. Both installer and customer _____

14. Did you ever try to contact NorthWestern Energy or its program representatives for any of the following reasons? Just let me know with a "yes" or "no" whether each reason applies.

a. To find out more about how the program works __Y __N __Don't Know

b. To find out the status of a funding application __Y __N __Don't Know

c. To find out the status of a payment __Y __N __Don't Know

d. To resolve a problem __Y __N __Don't Know

16. On a five-point scale, where 1 is not at all satisfied and 5 is very satisfied, how satisfied were you with the following aspects of the program? [NOTE TO INTERVIEWER: RECORD ANY COMMENTS, BUT DON'T EXPLICITLY REQUEST THEM.]

a. The ease of finding the right program representative to speak with when you had questions or concerns _____

b. The outcome of your contact with program representatives _____

c. The speed with which the rebate was received _____

d. Comments _____

17. How likely is it you will encourage your customers to install renewable energy equipment and participate in NorthWestern Energy's programs? Please use a five-point scale, where 1 is not at all likely and 5 is very likely.

1 2 3 4 5 9 (Don't Know)

FIRMOGRAPHICS

18. Are any other employees in your firm aware of NorthWestern Energy's renewable energy program? __Y __N __Don't Know

    a. [IF YES] And have any of them assisted customers in installing renewable energy equipment or applying for NorthWestern Energy funding? __Y __N __Don't Know

19. How many locations does your company operate? [Read only if necessary to prompt response: "Would you say…]

    a. one facility __

    b. two through five facilities __

    c. six through 10 facilities __

    d. more than 10 facilities __

20. And my last question: What can NorthWestern Energy do to attract more businesses like yours to encourage their customers to take advantage of NorthWestern Energy's renewable energy program? _____

Thanks you for your feedback.

1.3. Training Program Surveys

1.3.1. Building Operator Certification (BOC) Training Program Survey For Participants

Sample = 69 trainees, Survey Goal N = 34

1.3.1.1. Introduction

Hello, may I speak to _____

Hi, my name is _____, and I'm calling on behalf of NorthWestern Energy and its Building Operator Certification training. NorthWestern would like to get your feedback on your experience with the BOC [CATI: pronounced B-O-C] training order that it might continue to improve this service. Do you have a few minutes to tell me about your training experience? (ARRANGE CALLBACK, IF NECESSARY)

[IF ASKED: This interview takes under 10 minutes.]

1.3.1.2. Verify Program Participation

[All]

1. First, I'd like to verify that you took a BOC course in 2010/2011?

1. Yes
2. No (THANK AND TERMINATE)
3. Don't Know (THANK AND TERMINATE)
9. Refused (THANK AND TERMINATE)

2. Do you conduct or direct operations and maintenance activities at your facility?
   1. Yes
   2. No (THANK & TERMINATE)
   3. Don't Know (THANK & TERMINATE)

3. What level of training course did you take, Level I or Level II? (ONE ANSWER ONLY)
   1. Level 1
   2. Level II (SKIP TO Q5)
   3. Both Level 1 and Level II (SKIP TO Q5)
   8. Don't Know (SKIP TO Q5)
   9. Refused (SKIP TO Q5)

4. Are you planning to take the Level II BOC course series?
   1. Yes
   2. No
   9. Don't Know

1.3.1.3. Awareness

5. How did you hear about the BOC training courses?
   1. NorthWestern Energy
   2. Supervisor
   3. Co-worker or colleague
   4. Brochure
   5. Word of mouth
   6. Internet
   7. Other (Specify) _____
   9. Don't Know

6. During the course, several topics were covered. Were there any topic areas that you think could be improved upon?

1. Yes
2. No (SKIP TO Q10)
9. Don't Know (SKIP TO Q10)

7. How could they be improved? (DO NOT READ CHOICES; PROBE WELL; CHECK ALL THAT APPLY)

1. More knowledgeable instructors
2. Better communicator/ teaching style
3. Speed up the pace, presentations too slow; too low a level
4. Slow down the pace, too much information; too detailed; delivery too fast; too high a level
5. Information on specific topic desired (Specify) _____
6. Better handouts
7. More real day-to-day applications for the work
8. More hands-on training
9. Want facility site visits
10. Update materials (textbooks / handouts / slides / PowerPoints)
11. Reduced duplication of information
12. Review assignments
13. Review tests
14. Develop online course
15. Provide a searchable CD of course material
16. Other (SPECIFY) _____
99. Don't Know

8. Let me remind you of the topics covered by the training. Please tell me which ones you thought could be improved upon. (CHECK ALL THAT APPLY) [Process as binary] (IF Q3=1 LEVEL 1, OR Q3=3 LEVEL 1 AND LEVEL 2, READ AND RECORD RESPONSE TO LIST A. IF Q3=2 LEVEL 2, READ AND RECORD RESPONSE TO LIST B.)

List A

1. Introduction and Heating and Cooling
2. HVAC Systems
3. Controls
4. Lighting

5. Energy Management and Techniques
9. Don't know/Don't remember

List B

6. Introduction and Heating and Cooling
7. Energy Management
9. Don't know/ Don't remember

9. (Q 9 incorporated into Q8 list)

10. On a scale of 1-5, where 1 is "not at all satisfied" and "5 is very satisfied," how satisfied are you with …

		Not at all Satisfied				Very Satisfied	Don't Know
A.	… the training location?	1	2	3	4	5	9
B.	…the overall course schedule: the class length, the classes on consecutive days and so forth?	1	2	3	4	5	9

[IF 10A OR 10B = 1 OR 2, ASK Q11; OTHERWISE SKIP TO Q12]

11. You expressed some dissatisfaction with (insert Q10A and/or Q10B). What improvements would you suggest? (DO NOT READ (Process as binary)
    1. Offer the course at locations around the state
    2. Spread the course out more / a less compressed training schedule
    3. Other (Specify) _____

12. Would you recommend BOC training to your colleagues?
    1. Yes
    2. No
    9. Don't Know

1.3.1.4. Knowledge and Skills Applied

13. In addition to any activities you may have done as part of the coursework, have you used or applied at your facility any of the concepts or methods taught in the series?
    1. Yes (SKIP TO Q15)
    2. No
    9. Don't Know (SKIP TO Q15)

14. Why is that?

1. No specific reason
2. Money
3. Time
4. Lack of support from management
5. No appropriate situations
6. Course not applicable
7. Other (Specify) _____
8. Don't Know
9. Refused

15. At your facility, what typically gets in the way of your implementing energy efficiency upgrades?

1. Nothing, no specific reason
2. Money
3. Time
4. Lack of support from management
5. No appropriate situations
6. Other (Specify) _____
8. Don't know
9. Refused

16. Have you shared any of the concepts or methods you learned in the course with any of your coworkers?

1. Yes
2. No
9. Don't Know

17. Since your training, has your facility begun or completed any projects or initiatives aimed at increasing energy efficiency, such as installing energy efficient equipment, performing energy audits, or installing monitoring equipment?

1. Yes
2. No (SKIP TO Q22)
9. Don't Know (SKIP TO Q22)

18. What equipment, projects, or initiatives? (DON'T READ ITEMS; PROBE WELL; CHECK ALL THAT APPLY)

1. Lighting
2. Air Conditioning
3. Motors (including fans)
4. Controls
5. Chillers
6. Boilers
7. Energy Audit
8. Benchmarking
9. Monitoring (including installation of monitoring equipment)
10. Other (Specify) _____
99. Don't Know

19. (IF ONE ANSWER IN Q18, SAY:) Is the project or initiative complete?
(IF MORE THAN ONE ANSWER IN Q18, SAY:) Are the projects or initiatives complete?

1. Yes
2. No
3. Some are completed and some aren't completed (ONLY IF MULTS IN Q18)
9. Don't Know

20. Please rate the extent to which your BOC training had an influence on the project(s)—such as the decision to go ahead at this time or the type of equipment or size of the project. Please use a scale of 1 to 5, where 1 is no influence at all and 5 is very influential.

No influence at all			**Very influential**		**Don't Know**
1	2	3	4	5	9

If 3, 4, 5 or 9 (SKIP TO Q22)

21. Why did you say that? (PROBE WELL)

_____

22. How much would you say your BOC training has increased the likelihood that you'll encourage your organization to pursue efficiency actions in the future?

Hasn't increased Likelihood at all			**Has greatly increased Likelihood**		**Don't Know**
1	2	3	4	5	9

If 3, 4, 5 or 9 (SKIP TO Q24)

23. Why did you say that? (PROBE WELL) _____

24. In the last year, have you experienced any job advancement in terms of responsibility, title, or pay? (DON'T READ CHOICES; CHECK ALL THAT APPLY)

    1. Yes, responsibility increased
    2. Yes, title increased
    3. Yes, increase in pay
    4. No, none of those (SKIP TO Q26)
    9. Don't Know/Refused (SKIP TO Q26)

25. How likely do you think it is that the BOC training contributed to the advancement? Please use a 1 to 5 scale where 1 means not at all likely and 5 means very likely.

Not at all likely				**Very likely**	**Don't Know**
1	2	3	4	5	9

26. In the past two years, have any of the facility upgrade projects you've worked on qualified for rebates or incentives from NorthWestern Energy?

    1. Yes (SKIP TO Q28)
    2. No
    9. Don't Know

27. Are you aware that NorthWestern Energy offers rebates and incentives for qualified projects?

    1. Yes
    2. No
    9. Don't Know

1.3.1.5. Operator Activities and Facility Characterization

My remaining questions concern your job responsibilities and activities.

28. How many years have you been in building operations and maintenance? _____

29. How many buildings do you have responsibilities for? _____ buildings

30. What is the approximate square footage of the total conditioned space for which you have responsibilities? (PLEASE RECORD ANSWER AND THEN REPEAT FOR VERIFICATION)

    _____ (enter 98 if don't know)

31. How many O&M staff work in your facility?

1. 1 (SKIP TO Q33)
2. 2
3. 3 to 5
4. 6 to 10
5. 11 to 20
6. More than 20

32. Do you supervise any O&M staff?
    1. Yes
    2. No
    9. Don't Know

33. Do you have or share responsibility for…(READ ITEMS; CHECK ALL THAT APPLY)
    1. Monitoring energy use at your facility
    2. Controlling or reducing energy use at your facility
    3. Paying or approving payments of energy bills

34. How would you characterize the principal business or activity performed at the buildings for which you have responsibility? (DON'T READ CHOICES; SELECT ONE PROBE WELL)
    1. Grocery store
    2. Government/community services (churches/courthouses/museums)
    3. Hospitality
    4. Medical
    5. Office building (including government offices)
    6. Residential (apts/condos)
    7. Restaurant
    8. Retail
    9. Schools/colleges/universities
    10. Chemicals/petroleum/plastics/rubber
    11. Electronics and equipment
    12. Food processing
    13. Heavy industry/fabrication
    14. High technology (facilities with clean rooms)
    15. Warehouse

16. Other (Specify) _____

99. Don't Know/Refused

Those are all of my questions. You've really been a great help. Thanks so much for your time and participation.

1.3.2. Motor Training Program Survey for Participants

(n=47)

1.3.2.1. Introduction

Hi, my name is _____ and I'm calling on behalf of NorthWestern Energy and its Green Motor Practices training. NorthWestern would like to get your feedback on your experience with the Motor Training in order to continue to improve its services. Do you have a few minutes to tell me about your training experience? (ARRANGE CALLBACK IF NECESSARY)

[IF ASKED:] This interview takes under 10 minutes.

1.3.2.2. Verify Program Participation

[All]

1. First, I'd like to verify that you took the Green Motor Practices training sponsored by NorthWestern in (2010/2011 from sample).
    1. Yes
    2. No (THANK AND TERMINATE)
    8. Don't Know (THANK AND TERMINATE)
    9. Refused (THANK AND TERMINATE)
2. Which of the following best describes your work? (READ CHOICES; ONE ANSWER ONLY)
    1. I have responsibility for my firm's motors
    2. I have responsibility for my clients' and customers' motors
    3. (Or something else – DO NOT READ)

1.3.2.3. Awareness

3. How did you hear about the Green Motor Practices course? (probe well; check all that apply) (process as binary)
    A. NorthWestern Energy materials
    B. Internet
    C. Supervisor

D. Co-worker or colleague

E. Other, specify _____

4. Are you aware that NorthWestern Energy offers … (READ ITEMS; ROTATE)

A. rebates for NEMA premium motors?

1. Yes
2. No
9. Don't Know

B. rebates for motor rewinds that meet Green Motor Practices?

1. Yes
2. No
9. Don't Know

1.3.2.4. Course Content

5. Now I would like to know what you thought of the course material. Please indicate how adequately the following course materials covered topics important to your needs by using a 1 to 5 scale where 1 means "the content did not address any of your needs," and 5 means "the content fully addressed your current needs." (ROTATE ITEMS)

		Didn't address your needs				**Content addressed your needs**	**DK**
To begin, how adequately did the content address your needs regarding…							
A.	calculations for motor driven systems' operations operations costs	1	2	3	4	5	9
B.	effective motor system management practices, including "continuous process improvement"	1	2	3	4	5	9
C.	identifying and reading motor name plates	1	2	3	4	5	9
D.	relevant energy efficiency standards, codes and regulations	1	2	3	4	5	9
E.	motor and electricity economics	1	2	3	4	5	9
F.	decision making concerning motor repair and rewind	1	2	3	4	5	9
G.	how to get utility incentives to help with the costs of improving motor efficiency	1	2	3	4	5	9

6. [IF ANY 5A–5G = 1 OR 2 OR 3] In that last list of items, you expressed some dissatisfaction with the course materials. What improvements could be made? (PROBE WELL; CHECK ALL THAT APPLY) [Process as Binary]

1. Too simplistic; too slow; too low a level
2. Too much information; too detailed; too fast; too high a level
3. Specific topic desired but not covered (SPECIFY WHAT TOPIC):
4. More knowledgeable instructors
5. Better communicator/ teaching style
6. Can't remember
7. Other (SPECIFY) _____

99. Don't Know

1.3.2.5. Course Delivery

7. Please rate how well the following items supported your ability to learn the course material using a 1 to 5 scale where 1 means "significantly detracted from learning the course material," and 5 means "strongly supported learning the material." (REPEAT QUESTION & SCALE AS OFTEN AS NECESSARY:) How well did support learning the materials on our 1 to 5 scale (where 1 means significantly detracted from learning the course material and 5 means strongly supported learning the material)?

		Significantly detracted				**Strongly supported**	**DK**
A.	To begin with, how well did the pace of course delivery support learning the materials?	1	2	3	4	5	9
B.	handouts and materials	1	2	3	4	5	9
C.	the instructors	1	2	3	4	5	9
D.	the training facility	1	2	3	4	5	9

8. Using the same scale, how important were the Continuing Education Units – or CEUs – in your decision to attend the course?

Not at all Important				**Very Important**	**NA Not offered/ Didn't know about offer**	**DK**
1	2	3	4	5	8	9

9. Would you recommend the Green Motor Practices course to others?

1. Yes
2. No
9. Don't Know

10. Do you know of a shop that does energy-efficient motor rewinds?
    1. Yes
    2. No
    9. Don't Know

1.3.2.6. Knowledge and Skills Applied

Q. Since taking the course have you or others in your company used information gained in the training to: (READ ITEMS; ROTATE) [process as binary]

		Yes	No	DK
11.	perform calculations of operations costs for motor driven systems	1	2	9
12.	perform continuous improvement activities with motors	1	2	9
13.	review the information on motor name plates	1	2	9
14.	develop motor purchasing plan using projected motor and electricity costs	1	2	9
15.	consider current and pending motor codes and standards to inform motor purchasing	1	2	9

16. Has the course influenced your use of, or plans for, any motors?
    1. Yes (ASK Q17, 18, 19, 20)
    2. No (ASK Q21)
    9. Don't Know (SKIP TO Q21)

17. Has the course influenced you to retire motors earlier than planned?
    1. Yes
    2. No
    9. Don't Know

18. Has the course influenced you to replace with premium efficiency motors?
    1. Yes
    2. No
    9. Don't Know

19. Has the course influenced you to conduct green rewind?

1. Yes
2. No
9. Don't Know

20. Has the course influenced you to do something else I didn't mention?
    1. Yes (SPECIFY)_____
    2. No
    9. Don't Know

(If all of Q17-20 = N or Don't Know, ask Q21. Otherwise, skip to Q22)

21. Why do you suppose the course didn't influence your motor practices?

    (SPECIFY)_____

1.3.2.7. Operator Activities and Facility Characterization

22. My remaining questions concern your job responsibilities and activities. How many years have you been responsible for your facility's motors? _____

23. How many motors are you responsible for? _____ OPEN-ENDED; IF NONE, EXPLAIN)

24. About what is the horsepower size of your largest motor? _____ hp

24A. Do you supervise or advise any staff that work on motors?
    1. Yes
    2. No
    3. Refused

25. [Intentionally left blank]

26. Do you have or share responsibility for…

	Yes	No
a. monitoring energy use at any facilities	1	2
b. controlling or reducing energy use at any facilities	1	2
c. paying or approving payments of energy bills	1	2

27. What is the principal business or activity performed by your company? (DON'T READ; PROBE TO CODE – SELECT ONE ONLY)
    1. grocery store
    2. government/community services (churches/courthouses/museums)
    3. hospitality
    4. medical

5. office building (including government offices)
6. residential (apts/condos)
7. restaurant
8. retail
9. schools/colleges/universities
10. chemicals/petroleum/plastics/rubber
11. electronics and equipment
12. food processing
13. heavy industry/fabrication
14. high technology (facilities with clean rooms)
15. warehouse
16. electrical services company/electrical contractor/electrician
17. Other (Specify) _____

That's all of my questions.

Thank you very much for participating in our survey! You've been a great help.

1.4. Nonparticipant Surveys

1.4.1. Residential and Non-Residential Nonparticipant End-User Survey

Call list variable to be used:

SampleType – as seen in Table below

FinalCategory

Fuel

Contact name (from call list)

Phone number

SBW provided a non-duplicated (by phone number) call list with non-participants in the the following strata. SRBI will need as many as 30 times the completion goal for calling.

SBW had records of all customers who received one or more free CFL's. These cases will be eliminated from the nonparticipant sample frame.

Strata	Final Category (per call list)	SampleType (per survey skips)
1	Residential	NP RES
Three Non-residential Strata:		
2	Irrigation	NP NonRes
3	Small	NP NonRes
4	Large	NP NonRes

Questions for SRBI: can you use a combination of Non-Participant Type and Sample Type for tracking quota for completes by Strata (only relevant for NonRes sample)

Note that these records have a contact name. Start asking for the contact, yet even so the introduction includes survey questions to reach the appropriate respondents.

For "Residential" calls try to talk with someone with responsibility for selecting and/or purchasing household appliances, light fixtures, and equipment. For NONRES call (commercial customers) try to talk with some responsible for selecting and/or purchasing facility equipment – lighting, HVAC or other equipment, motors and the like.

Once we get the best person on the phone, we can ask them about awareness of NorthWestern programs and access to NWE information sources.

To SRBI: There are a number of five-point satisfaction questions. Any time a customer responds with a "1" or a "2" (low satisfaction), please ask "Why did you say that?"

To SRBI: If customers should want a contact at NorthWestern Energy to verify the validity of the research effort, please have them call the NorthWestern Energy Customer Care Contact Center, 888-467-2669, preferably M-F between 7 a.m. and 6

Note: There are no on-sites being conducted for nonparticipants.

1.4.1.1. Introduction

Hi, my name is _____ and I'm calling on behalf of NorthWestern Energy. I am not selling anything; I'm calling on behalf of NorthWestern Energy, which is evaluating their efficiency activities to better serve its customers. Most of my questions will relate to your awareness of, and access to, information about NorthWestern's efficiency programs. Are you the right person in your household to talk with?

[If not:] Could you refer me to someone who could answer a few questions about your household's awareness of NorthWestern's energy efficiency efforts?

[IF ASKED: THIS SURVEY WILL TAKE ABOUT 10 MINUTES]

First, I have a few questions to help us evaluate how well Montanans are hearing about NorthWestern's efficiency activities…

1.4.1.2. NorthWestern Energy Awareness

For Questions 1 to 10, ASK ALL unless there is a separate conditional (IF statements).

1. Have you ever visited NorthWestern's website?
   1. Yes
   2. No
   8. Don't Know
   9. Refused

1.a. [IF Q1 = 2] Is that because you don't use the Internet much or for some other reason?
   1. Don't have access
   2. Have access, but connection is slow
   3. Don't like to use it much
   4. Other (Specify)_____
   8. Don't Know
   9. Refused

2. [If Q1 =1] Using a scale from 1 to 5, where 1 means "not at all agree," and 5 means "completely agree," please rate your agreement with this statement:

   "The information I was looking for on NorthWestern's website was both easy to find and helpful."

   1 2 3 4 5 8. Don't Know 9. Refused

2a. [IF Q2 = 1 OR 2] Why do you say that? RECORD RESPONSE
   1. Gave Response
   8. Don't Know
   9. Refused

3. [If Q1 =1] Please tell me if you used this website for any of the following reasons… [Multiple Response]
   1. For information on available rebates or audits
   2. For money-saving ideas
   3. For how-to videos
   4. For information on how to contact NorthWestern
   5. For information on educational events
   6. Any other reasons (SPECIFY?)

7. To pay the utility bill
8. Don't Know
9. Refused

Have you heard about NorthWestern's….

4. … rebates for energy-efficient equipment purchases, such as insulation, some types of heating or cooling equipment, or other efficient equipment?
   1. Yes
   2. No
   8. Don't Know
   9. Refused

5. … incentives for qualifying renewable energy projects, such as solar electric or wind energy projects?
   1. Yes
   2. No
   8. Don't Know
   9. Refused

6. [IF TYPE = NP_RES]… offers for an on-line energy use calculator or in-home energy audits?
   1. Yes
   2. No
   8. Don't Know
   9. Refused

7. [IF SAMPLETYPE = NP_NONRES and FUEL= Electric OR DUAL] Customer]… on-site energy audits for qualifying small businesses?
   1. Yes
   2. No
   8. Don't Know
   9. Refused

   [IF ANY Q 4-7 = 1] You might hear about NorthWestern's rebate or other energy efficiency programs through a variety of ways. Through which of the following ways have you heard about NorthWestern's energy efficiency activities?

For Q8 to Q13 1. Yes 2. No 8. Don't Know 9. Refused

8. At an Event or meeting attended by a NorthWestern representative
9. NorthWestern mailing, brochure, bill insert, or advertisement
10. You contacted NorthWestern
11. An equipment vendor, contractor, or other building professional
12. Friends, neighbors, or colleagues
13. Are there any other ways you recalling hearing about NorthWestern's energy efficiency activities?
14. [IF Q13 = 1)] How else did you hear about these programs? RECORD RESPONSE
15. IF (Q4 or Q5 or Q6 or Q7 = 1) else skip to Q18] Have you ever considered participating in any of NorthWestern Energy's efficiency programs to reduce your energy use?
    1. Yes
    2. No
    8. Don't Know
    9. Refused
16. [If Q15=1] Is there anything that raises questions or concerns about participating in NorthWestern's efficiency programs?
    1. Yes
    2. No
    8. Don't Know
    9. Refused
17. [If Q16=1:] What raised concerns? (PROBE TO CODE; MULTIPLE RESPONSE PERMITTED)
    1. Time involved/ possible delays
    2. Incentives not enough
    3. Difficulty of participating
    4. Hard time getting approvals or getting everyone on board
    5. Not sure it would be worth it
    6. Confusing
    7. Hard to do things a new way
    8. [intentionally left blank]
    9. Other, Specify: _____

18. Have you heard of the ENERGY STAR logo, which is used to designate high-efficiency appliances and equipment?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

19. Have you heard of the following options for heating and cooling systems:
    1. Yes 2. No 8. Don't Know 9. Refused

    A. [IF NP_RES] High efficiency or Condensing furnace or boiler?
    B. [IF NP_RES] High efficiency room or central air conditioning
    C. [IF NP_NONRES] High efficiency boiler or chiller or HVAC equipment
    D. [IF NP_NONRES] Variable Frequency Drives also called VFD?
    E. [IF NP_NONRES] Have you heard about building automation controls for heating and cooling system?

20. And what about the benefits of adding insulation to your building? Have you been hearing about….
    1. Yes 2. No 8. Don't Know 9. Refused

    A. [IF RES] the benefits of adding insulation to your home?
    B. [IF NON RES] the benefits of adding insulation your facility?

21. And last, have you heard of small scale renewable energy systems for homes and businesses, such as…
    1. Yes 2. No 8. Don't Know 9. Refused

    A. Generating electricity with a PV or photovoltaic system?
    B. Small wind turbines for generating electricy for home or business

22. Are you aware of the rebates that NorthWestern offers for high efficiency equipment and insulation?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

1.4.1.2.1. Lighting Knowledge and Behavior

[SampleType = NP_Res Except for Conditionals]

Now let's move on to light bulbs… I have just a few questions for you about compact fluorescent lights, also called CFLs. CFLs are fluorescent bulbs that fit in regular light bulb sockets that look different than standard incandescent bulbs. They are often in a twisty shape, but can be globe-shaped, or flood-light-shaped.

Have you heard of ….

23. CFL bulbs?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

24. And what about CFL light fixtures -- fixtures that hold only compact fluorescent light bulbs?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

25. [IF Q23 = 1] On a scale of 1 to 5, with 1 being "not at all easy" and 5 being "very easy," how easy is it to find the CFLs you want at the stores where you commonly buy light bulbs?

    1 2 3 4 5 6. NA (don't want CFLs) 8. Don't Know 9. REFUSE

26. [IF Q23 = 1] How comfortable do you feel looking for and figuring out the information on CFL packages about which bulb to buy to get the light you need? Please answer using a five-point scale, where 1 is "not at all comfortable" and 5 is "very comfortable".

    1 2 3 4 5 8. Don't Know 9. Refused

27. [ALL] People sometimes keep spare bulbs on hand to replace burned-out bulbs. Do you keep a stock of spare bulbs?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

28. [IF Q27 = 1] Does your stock of spare bulbs include CFL bulbs?

    1. Yes
    2. No

8. Don't Know
9. Refused

29. When a standard incandescent bulb burns out, have you typically replaced it with one like it, or have you taken that opportunity to switch to a CFL?
    1. Use a standard incandescent bulb
    2. Use a CFL
    3. Depends
    2. No
    8. Don't Know
    9. Refused

30. [If Q29 = 3)] What does it depend on? _____ [RECORD RESPONSE]
    1. Gave Response
    8. Don't Know
    9. Refused

1.4.1.2.2. General Aware of Rebate Opportunities

[Follow Conditionals]

Please tell me if you are aware of rebates on offer by NorthWestern for any of the following equipment, starting with rebates for:

31. [IF NP_RES OR NP_NONRES] Electronics like computers, TV and servers?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

32. [IF NP_RES OR NP_NONRES] High efficiency refrigerators?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

33. [IF NP_RES] Rebates for programmable thermostats?
    1. Yes
    2. No

8. Don't Know
9. Refused

34. [IF NP_RES] And what about equipment for new home rebates?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

35. [IF NP_NONRES] Rebates for heating and cooling controls?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

36. [IF NP_NONRES] Refrigeration equipment like refrigerator cases, walk-ins, compressors, etc?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

37. [IF NP_NONRES] And what about "custom project rebates" – have you heard about rebates for specialty efficiency projects that don't qualify for a pre-set rebate?
    1. Yes
    2. No
    8. Don't Know
    9. Refused

1.4.1.2.3. Motor Use and Motor Efficiency Awareness

[If Sample Type = NP_Nonres]

I have a few questions about motors, if they are used at your facility …

38. About how many electric motors, if any, are used in your business operations? Excluding motors in appliances, hand driers and the like. ##_____

    [RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused]

39. [If Q38=1 to 997] And how many, if any, of these motors are 15 horsepower or larger?

[RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused]

[Note to SRBI, a response greater than zero to this question triggers a skip pattern, called "Motor End Use"]

40. [IF Q39=1 to 997] On average, how many of these larger motors does your organization purchase per year? ____ [Response should not be > Q39] response]

998. Don't Know

999. Refused

41. [IF Skip Pattern= Motor End Use] Do you keep any 15 horsepower or larger motors in stock, to be used when a motor fails?

1. Yes
2. No
8. Don't Know
9. Refused

Q41a [IF Q39=1 to 997] Large motors can be rewound to be more energy-efficient. Before today, were you aware of this opportunity?

1. Yes
2. No
8. Don't Know
9. Refused

42. [If Q39=1 to 997] Do you know a shop that conducts energy-efficient motor rewinds?

1. Yes
2. No
8. Don't Know
9. Refused

43. [IF Q42=1] On average, how many motors does your organization rewind per year?

[RANGE: 0-997, 997=997 or more, 998=Don't Know, 999=Refused]

44. [If Q38=1 to 997] Has your organization tried to purchase a NEMA Premium motor? (IF ASKED: NEMA stands for the National Electrical Manufacturers Association. Even smaller motors, 1 HP or larger, may have this rating.)

1. Yes
2. No
8. Don't Know

9. Refused

45. [IF Q44=1] Was the NEMA Premium motor readily available, or did you have to wait a long time to get it?

1. Readily available
2. Took a long time to get
8. Don't Know
9. Refused

46. [IF Q40=1 to 997] Does your organization have a policy to buy only NEMA Premium efficient motors?

1. Yes
2. No
8. Don't Know
9. Refused

47. Are you aware that NorthWestern offers rebates for some high efficiency lighting, fixtures and controls?

1. Yes
2. No
8. Don't Know
9. Refused

48. [IF SAMPLETYPE = NP_NONRES] Has your organization tried to buy high-efficiency lighting equipment?

1. Yes
2. No
8. Don't Know
9. Refused

49. [IF Q48=1] Was the efficient lighting equipment readily available?

1. Yes
2. Yes, but took longer to get
3. No
8. Don't Know
9. Refused

50. What types of high efficiency bulbs or fixtures have you bought in the past two years? [PROBE: ANYTHING ELSE, READ AS NEEDED TO ASSIST RECALL]

1. T-8 linear lamps (any length)
2. LED Face Exit signs
3. *Fully Electronic* lamp ballasts
4. Compact Fluorescent lamps -CFL bulbs
5. Occupancy sensors
6. 'Daylighting' controls (dimming)
7. Other – Specify _____
8. T-5
9. T-5 HO

98. (VOL) Don't Know

99. (VOL) Refused

1.4.1.2.4. Finding Buy-Down Participants

[All, Except for Conditionals]

51. [IF Q23 = 1] NorthWestern promotes CFLs by reducing the price of bulbs which are dimmable, or are 3-ways, floods, globes, candelabras, and have higher wattage. In the past year, do you recall buying any of these types of CFLs without a coupon from NorthWestern?

1. Yes
2. No
8. Don't Know
9. Refused

[Interviewer: If hesitation say- Promotions are at participating big box stores, a few hardware stores, Albertsons, and CVS drug stores.]

[To SRBI, If Yes CFLs from NorthWestern Energy (i.e., Q51=Y), create skip pattern "Yes CFL"; if Q23=2 (no) or Q51=2 (no) , create pattern "No CFL"]

[If No CFL, skip to Section 1.1.7 Spillover]

52. [If Q51 = 1, ASK, ELSE SKIP TO " else skip to 4.2.7 "Spillover"] About how many CFLs do you think you got at the special promotional prices in the past year?

[Range 1 to 97, 97 = 97 or more, 98 = Don't Know 99= Refused]

53. [If Q51 = 1and Q52<> Don't Know or Refused] How many of these bulbs are you using now?

Range = 1 to 97, 97 = 97 or more, 98=Don't Know 99 = Refused ["Using" meaning currently installed in a light socket]

[CATI, if using all they got (Q52 = Q53, if both are 1 to 97) create "BD_CFL_use" = 1; if using none or some of what they got set "BD_CFL_use' to 0, if Q52 or Q53 = Don't Know or Refused then skip to Q59]

1.4.1.2.5. B-D Free Ridership

54. [IF Q51 = 1] Without NorthWestern Energy's CFL price promotions, would you have purchased any CFLs within the past year?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

[CATI, if N, go to Section 4.2.6 Leakage]

55. (IF Q51 = 1, Else skip to "Spillover") Now please consider the full price of CFL bulbs compared to NorthWestern's low-priced promotional offers. Without these promotions, about how many CFL bulbs do you suppose you would have bought at the full price in the past year?

    [Range 1 to 97, 97 = 97 or more, 98=Don't Know , 99 = Refused]

1.4.1.2.6. B-D Leakage

[Skip to Q59 if Q54=Don't Know or Refused]

[IF BD_CFL use = 0 and Q53 and Q54 NOT EQ Don't Know or Refused] You said you are not using all of the bulbs you bought during a NorthWestern Energy sales promotion.

56. Why not? (PROBE TO CODE; MULTIPLE RESPONSE; PROBE—"ANYTHING ELSE?")

    1. It stopped working
    2. Not bright enough
    3. Too bright
    4. Too long to start up/warm up
    5. Didn't like the color
    6. Wanted to give it to someone else
    7. Other: specify_____
    10. Wanted to have extras stored/on-hand
    8. Don't Know

9. Refused

57. What did you do with the CFL bulbs you are not using now? (Meaning those not currently installed in a light socket. PROBE TO CODE; MULTIPLE RESPONSE; PROBE—"ANYTHING ELSE?")

1. Disposed of
2. Gave away
3. Storing for later use
4. Other: Specify _____
8. Don't Know
9. Refused

58. [If Q57 = 2)] In what city and state did the bulbs end up? [RECORD]

1. Gave Response
8. Refused

1.4.1.2.7. Spillover For All Nonparticipant Respondents, CFL Related

[All, Except for Conditionals]

[IF Q51=1 READ:] Since buying CFLs during a NorthWestern CFL promotion, have you bought any additional…

[If Skip Pattern= "No CFL" or (Q51 or Don't Know or Refused) or Q52 = Don't Know/Refused] In the past year have you bought any…

59. [ALL]…CFLs at full price?

1. Yes
2. No
8. Don't Know
9. Refused

60. [IF Q59=1] How would you rate the influence of NorthWestern on your decision to buy CFLs at the full price? Please use a five point scale, where 1 means "no influence" and 5 means "major influence"

No influence Major influence

1 2 3 4 5 8. Don't Know 9. Refused

1.4.1.3. Program Consideration

We're almost finished…

61. If you're given the opportunity to participate in a NorthWestern Energy efficiency program in the future, how likely is it that you'll decide to do so? Please use a five-point scale, where 1 is "not at all likely" and 5 is "very likely."

    1 2 3 4 5 8. Don't Know 9. Refused

62. Do you have any comments that might help NorthWestern Energy improve its program? RECORD RESPONSE_____

1.4.1.4. Demographics

[If Sample Type = NP_Res, Else Skip to Firmographics]

[ALL] My final questions are about your home and household, and will be used only to compare your program experiences with other participants'.

63. Do you own the home where you live?

    1. Yes
    2. No
    8. Don't Know
    9. Refused

64. What type of home do you live in? You can stop me when I read the type that describes your home. Is it a…

    1. Single-family *detached* home, not including manufactured or mobile home
    2. Manufactured home
    3. 2- to 4-unit home (i.e. duplex, triplex, or fourplex)
    4. Multi-family home (more than four units)
    5. Mobile home (e.g., double- or single-wide trailers)
    8. Don't Know
    9. Refused

65. How many people live in your home?

    1. One
    2. Two
    3. Three
    4. Four
    5. Five or more
    8. Don't Know
    9. Refused

66. What is the approximate size in square feet of your home? (DO NOT READ, but prompt with ranges if unsure)

1. Less than 1,400 sq ft
2. 1,400 up to 2,500 sq ft
3. 2,500 up to 3,500 sq ft
4. 3,500 up to 5,000 sq ft
5. More than 5,000 sq ft
8. Don't Know
9. Refused

67. What is your age? (DO NOT READ, but prompt with ranges if unsure)

1. Under 25 years
2. 25 through 34 years
3. 35 through 44 years
4. 45 through 54 years
5. 55 through 59 years
6. 60 through 64 years
7. 65 years or older
9. Refused

68. What is the highest level of education you've completed? (READ LIST) Is it…

1. Less than a college degree
2. Associate's degree
3. Bachelor's degree
4. Graduate or professional degree
9. Refused

69. Which of the following categories best describes your household's annual income before taxes? Just stop me when I get to the right category. (READ LIST)

1. Less than $20,000
2. $20,000 up to $30,000
3. $30,000 up to $40,000
4. $40,000 up to $50,000
5. $50,000 up to $60,000

6. $60,000 up to $70,000
7. $70,000 up to $80,000
8. Over $80,000

98. Don't Know

99. Refused

1.4.1.5. Wrap Up and Firmographics

[If Sample Type = NP_Nonres]

My final questions are about your organization and facility, and will help me compare your responses about your program experiences with those of other participants.

70. Is this organization a for-profit business or a not-for-profit organization?

1. For-profit
2. Not-for-profit
8. Don’t Know
9. Refused

71. What type of facility is this? Would you say the space is primarily an industrial facility, a commercial facility, or a mix of industrial and commercial?

1. Industrial
2. Commercial
3. Mixed industrial and commercial
8. Don’t Know
9. Refused

72. What is the primary business activity conducted at this facility? (DO NOT READ, PROBE IF NEEDED)

1. Office
2. Retail
3. Healthcare
4. Education
5. Warehouse
6. Grocery
7. Lodging
8. Restaurant

9. Industrial
10. Wastewater
11. Farming/Irrigation
12. Miscellaneous (Specify)_____
98. Don't Know
99. Refused

73. How many buildings are at this facility?

[RANGE: 1-97, 97=97 or more, 98=Don't Know, 99=Refused]

69a. Do you occupy the entire facility, or some portion of it?

1. Entire facility
2. Part of the facility
98. Don't Know
99. Refused

69b. [IF 69a = 2] What percentage of the facility do you occupy?

[Range: 1-99 1. Gave Response 8. Don't Know 9. Refused]

74. What's your best guess as to the size of this facility—the approximate square footage of the space that is cooled or heated? [IF Q73 >1:] Please tell me the total for all of the buildings in this facility. Please stop me when I read the approximate square footage. Is it …

1. Under 5,000 sq. ft.
2. 5,000 to just under 10,000 sq. ft.
3. 10,000 to just under 25,000 sq. ft
4. 25,000 to just under 75,000 sq. ft
5. 75,000 sq. ft. or more
8. Don't Know
9. Refused

Q70a. How long has this business occupied this location? _____

[RANGE: 0-97, 0=Less than 1 year, 97=97 or more, 98=Don't Know, 99=Refused]

75. What year was the building constructed? [If Q73 >1, "Please refer to the largest building" (if needed: Your best guess is fine) _____ (year)

9998= Don't Know, 9999=Refused

And last, could you quickly indicate, with just a yes or no, which of the following your firm has in place?

For Q76-Q80: 1. Yes 2. No 8. Don't Know 9. Refused

76. A designated energy manager or an energy management team?

77. A management directive to cut energy costs?

78. Energy use targets?

79. Contracts for equipment maintenance and servicing that require energy efficiency?

80. *Written* procedures or policies that encourages energy efficiency? [for example, thinking about energy efficiency when you purchase equipment]

[ALL] That's all the questions I have, thank you very much for helping out.

2. Data and Data Definitions

The data processing for this evaluation combined many files from many sources. Most of the data was delivered in Excel files. All the data was aggregated into an Access database. Most of the savings calculations were completed in Access. The results were then output to Excel files for final analysis.

2.1. Impact and Process Evaluation Data

Figure 1 provides a high level summary of the flow of the data. The data inside the two red boxes is provided either in this document or in the accompanying files. Table 2 provides the exact names for the files that are illustrated in the data flow diagram but not included in this document.

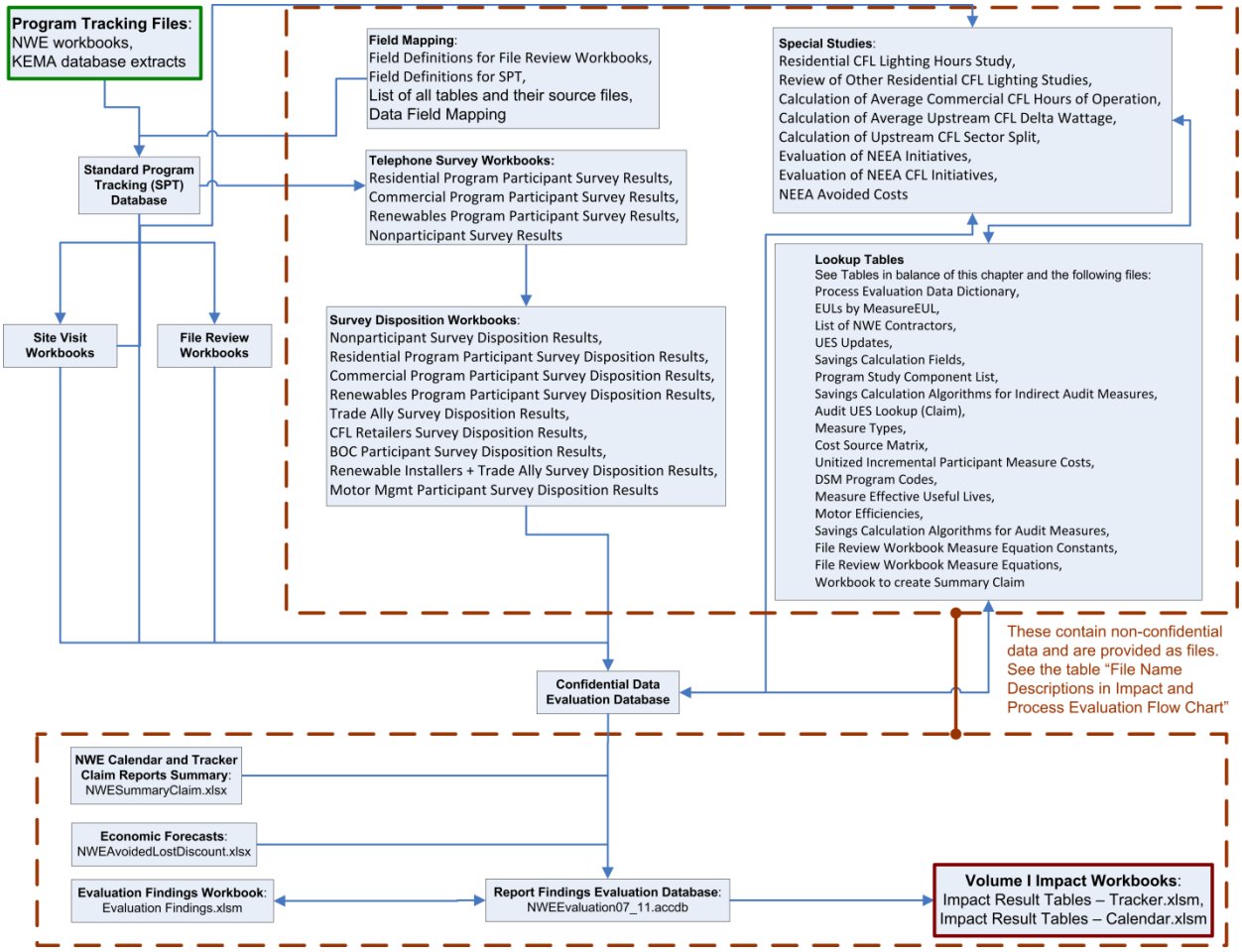


Figure 1: Impact and Process Evaluation Flow Chart

The Report Findings Evaluation Database has several objects inside it that deserve some explanation to help with retracing the data flow. The table named tblSPTNWE has all the key data provided by NWE that represents the claim. It is only the basic fields as outlined in

Table 4. Additional fields were culled as necessary for specific calculations. The data that was collected by the evaluation team is contained in the series of tables whose names start with tblEvalData. The calculated savings values for the sampled records are contained in the series of tables whose names start with tblEvalSavings. The calculation of these values occurred in a database that has confidential information and so is not provided here. The algorithms and additional values that are needed to get from the collected data to the savings values are included either in this document or the files that accompany it.

Most of the data in the Volume I Impact workbooks (in the salmon colored sheets at the end) comes from tables located in the Report Findings Evaluation Database. The table names match the sheet names but with a "tbl" prefix added. Most of these tables originated in databases that had confidential information, but some can be traced back to a source table in the provided database after processing with queries and code. The additional tables and data provided show the source data behind the tables.

Table 2: File Name Descriptions in Impact and Process Evaluation Flow Chart

Flow Diagram Box	Description	File Name
Field Mapping		
	Field Definitions for File Review Workbooks	FileReviewFieldDefSnapshotTables.xlsx
	Field Definitions for SPT	FieldDefinitions.xlsx
	List of all tables and their source files	tblFiles.xlsx
	Data Field Mapping	DataFields.xlsm
Telephone Survey Workbooks		
	Residential Program Participant Survey Results	5593 Res Participants 9_11 FR_SO_LKG for SBW redacted.xlsx
	Commercial Program Participant Survey Results	5594 Com Participants 9_12 FR_SO_LKG for SBW redacted.xlsx
	Renewables Program Participant Survey Results	5644 NWE Renewables 8_9 FR SO LKG redacted.xlsx
	Nonparticipant Survey Results	5671 ResNonres Nonpart_FR_SO_LKG for SBW redacted.xlsx
Survey Disposition Workbooks		
	Nonparticipant Survey Disposition Results	5671 Nonparticipants RES and COM 080112.xls
	Residential Program Participant Survey Disposition Results	5593 Res dispo 9_14 721x FINAL.xls
	Commercial Program Participant Survey Disposition Results	5594 Comm dispo 9_14 248xFINAL.xls
	Renewables Program Participant Survey Disposition Results	5644 Renewables Participants Final Dispo by Strata.xls
	Trade Ally Survey Disposition Results	5672 TA Omnibus Final dispo.xls
	CFL Retailers Survey Disposition Results	5675 TA CFL Retailers Final dispo 080112.xls

Flow Diagram Box	Description	File Name
	BOC Participant Survey Disposition Results	BOC Trainee Participants Final Call Disp Tally.xls
	Renewable Installers + Trade Ally Survey Disposition Results	E+ Renewable Installers-RIA Trade Ally survey disposition.xlsx
	Motor Mgmt Participant Survey Disposition Results	MOTORS Trainee Participants Final Call Disp Tally.xls
Special Studies		
	Residential CFL Lighting Hours Study	Res CFL Extrapolation.xls
	Review of Other Residential CFL Lighting Studies	HoursByYearOfMeteredStudy.xlsx
	Calculation of Average Commercial CFL Hours of Operation	ComCFLHoursOfOperation.xlsx
	Calculation of Average Upstream CFL Delta Wattage	CFLUpstreamDeltaWattage.xlsx
	Calculation of Upstream CFL Sector Split	5675 Trade Ally Coupon_Buydown.xlsx
	Evaluation of NEEA Initiatives	SBW Review of NEEA Initiatives.xlsx
	Evaluation of NEEA CFL Initiatives	NEEA CFLs.xlsx
	NEEA Avoided Costs	NWEAvoidedLostDiscount.xlsx
Lookup Tables		
	Process Evaluation Data Dictionary	RIA_DefinitionTables.xlsx
	EULs by MeasureEUL	MeasureEUL_Tables.xlsx
	List of NWE Contractors	Contractors.xlsx
	UES Updates	UESUpdatedTables_Tables.xlsx
	Savings Calculation Fields	CalcFields.xlsx
	Program Study Component List	ProgramStudy_Tables.xlsx
	Savings Calculation Algorithms for Indirect Audit Measures	AuditRecsAlgo.xlsx
	Audit UES Lookup (Claim)	AuditSavings.xlsx
	Measure Types	lkpMeasureType.xlsx
	Cost Source Matrix	Cost Matrix.xlsx
	Unitized Incremental Participant Measure Costs	LkupMeasureCost_Tables.xlsx
	DSM Program Codes	DSMProgramCodeLookup.xlsx
	Measure Effective Useful Lives	LkupMeasureEUL_Tables.xlsx
	Motor Efficiencies	MotorEfficiencyLookup_Tables.xlsx
	Savings Calculation Algorithms for Audit Measures	AuditDIAlgo.xlsx
	File Review Workbook Measure Equation Constants	FileReviewWkbConstants.xlsx
	File Review Workbook Measure Equations	FileReviewEquations.xlsx
	Workbook to create Summary Claim	NWESummaryClaim.xlsx
Report Findings	Nonconfidential evaluation database	NWEEvaluation07_11.accdb

Flow Diagram Box	Description	File Name
Evaluation Database		
	Record level data representing NWE claim	tblSPTNWE*
	Raw data collected during evaluation	tblEvalData~*
	Record level evaluation savings values	tblEvalSavings~*
	Record Level Incremental Participant Costs	qrySPT_IPCosts*

* Object within database

After creating the table containing the claim data provided by NWE, referred to as the SPT (Standardized Program Tracking data), it was checked against the actual NWE claim (from Tracker files). Table 3 shows the degree to which the SPT matched the Tracker claim.

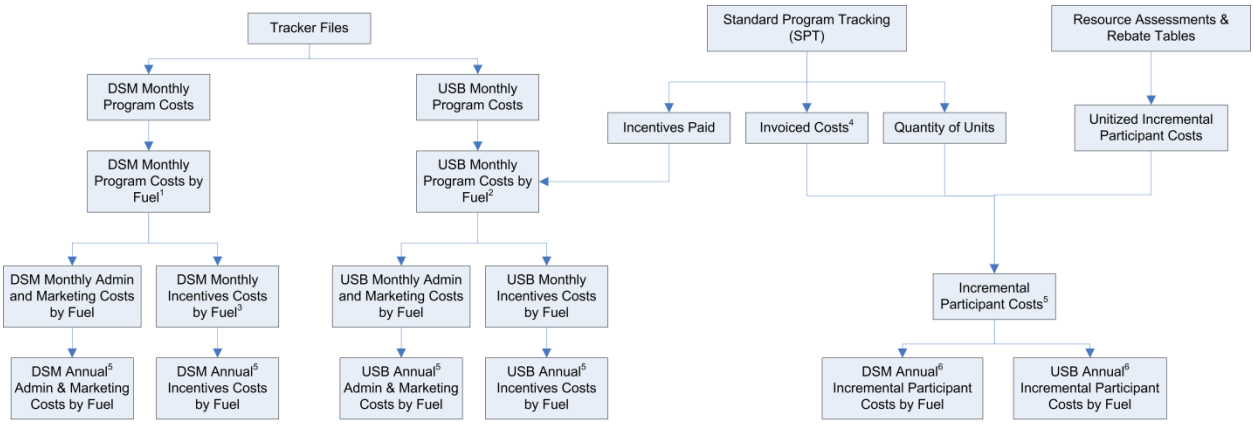
Table 3: Data Discrepancies Between Tracker and SPT

Program	kwh					dkt					Reason
	2006-07	2007-08	2008-09	2009-10	2010-11	2006-07	2007-08	2008-09	2009-10	2010-11	
Building Operator Certification	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Ok
DEQ Appliance	0%	0%	0%	0%	0%	0%	0%	0%	0%	-1%	ok
E+ Audit Home or Business	-3%	1%	3%	0%	-2%	4%	-2%	2%	0%	-2%	Unknown
E+ Building Blocks Pilot	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ Business Partners	-2%	0%	0%	0%	16%	0%	0%	0%	0%	0%	Unknown
E+ Commercial Existing Electric Rebate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ Commercial Existing Gas Rebate	0%	0%	0%	0%	0%	0%	0%	0%	57%	0%	NWE said SPT correct
E+ Commercial Lighting	6%	1%	15%	14%	5%	0%	0%	0%	0%	0%	KEMA and Tracker records match up but savings values aren't always the same between the two.
E+ Commercial New Electric Rebate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ Commercial New Gas Rebate	0%	0%	0%	0%	0%	0%	0%	0%	29%	0%	NWE said SPT correct
E+ Electric Motor/Rewind Rebate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ Free Weatherization/Fuel Switch	-72%	-6%	-32%	8%	7%	-2%	-12%	2%	0%	-5%	Supplied new data file with different claim, partly because what was reported as mcf was really dkt
E+ Irrigation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ New Homes	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Unknown
E+ Renewable	28%	-9%	-4%	5%	-6%	0%	0%	0%	0%	0%	Unknown
E+ Residential Existing Electric Rebate	26%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Unknown
E+ Residential Existing Gas Rebate	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	ok

Program	kwh					dkt					Reason
	2006-07	2007-08	2008-09	2009-10	2010-11	2006-07	2007-08	2008-09	2009-10	2010-11	
E+ Residential Lighting	14%	-1%	-2%	-1%	2%	0%	0%	0%	0%	0%	Unknown
E+ Residential New Electric Rebate	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
E+ Residential New Gas Rebate	0%	0%	0%	0%	0%	0%	0%	0%	79%	0%	NWE said SPT correct
Low Income Appliance	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	ok
NEEA Initiatives	0%	2%	-5%	0%	0%	0%	24%	-4%	0%	0%	Unknown
Vending Miser	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	Unknown

2.2. Cost Data

A high level summary of the flow of the cost data processing is shown in Figure 2. The record level incremental participant costs can be found in the query qrySPT_IPCosts as shown in Table 2.



1 Program Costs for NEEA came from the Electric Costs sheets but we used savings claimed to reallocate a portion of the costs to Gas. Also, the General DSM costs were only included for calculations that summed across all DSM programs.
2 Program Costs for Audits, BOC and DEQ programs came from the Electric Costs sheets but we used savings to reallocate a portion of the costs to Gas. Also, the cross-program costs were allocated the same as was done in the trackers.
3 The 2011-12 (9+3) Tracker did not have costs broken down as in previous year reports; therefore, incentives paid could not be broken out from the tracker files. They were instead based on SPT data.
4 Commercial Rebate Lighting records gave one invoiced cost per project rather than record; therefore invoiced costs were allocated to records within a project based on savings claimed. Generally, if a rebate measure had a unitized cost provided in the lookup table and quantity of units was available, the calculated incremental participant measure cost was used instead of the invoiced cost.
5 See the Cost Matrix Table for a break down of where Incremental Participant Costs originate for each program component.
6 Annual Costs were calculated for both Tracker Year periods and Calendar Year periods.

Figure 2: Cost Flow Chart

In the impact workbooks the PAC and TRC are calculated using the formulas:

$$\text{PAC} = \text{AM costs} + \text{Incentive costs}$$

$$\text{TRC} = \text{AM costs} + \text{NTGR} * \text{Incremental Participant costs} + (1 - \text{Spillover Adjusted NTGR}) * \text{Incentive costs}$$

Research Into Action (RIA) has determined the calculated Free Ridership rate is unreliable and has recommended the NTGR be set at 1. In keeping with that, the Spillover rate was treated as 0 for all cases. Due to those decisions the NTGR, by definition, is 1 and the Spillover Adjusted NTGR is also 1. In essence the TRC equation is therefore reduced to:

$$\text{TRC} = \text{AM costs} + \text{Incremental Participant costs}$$

In effect the difference between the TRC and the PAC is the difference between the Incremental Participant costs and the Incentive costs. In cases where the Incentive costs are higher than the Incremental Participant costs, the PAC will be greater than the TRC.

2.3. Additional Lookup Tables

The tables in this section are represented in the Lookup Tables box in Figure 1. They are organized into data and algorithm lookup sections.

2.3.1. Data Lookup Tables

Table 4 lists the fields that were created in the SPT table from NWE data.

Table 4: SPT Data Fields

Field Name	Description
NWEID	Mostly unique ID pulled from the NWE data
ProgramName	Program Name
Measure	Measure
SiteCity	Site City
SiteZip	Site Zip
kWhSavings	Claimed KWh Savings
dKThermSavings	Claimed dKt Savings
kWSavings	Claimed KW Savings
MMBTUSavings	Total of electric and gas savings
SavingsDate	Mostly pulled from date check mailed
SiteContactFirstName	Site Contact First Name
SiteContactLastName	Site Contact Last Name
SiteStreetAddress	Site Street Address
SitePhone	Site Phone Number
ContractorName	Contractor Name
ContractorPhone	Contractor Phone Number
IncentivePaid	Incentive Paid
InvoicedCost	Invoiced Cost
ApplicationDate	Application Date
InstallDate	Install Date
Quantity	Quantity
OperatingHours	Operating Hours
UESkWh	UES KWh
UESdKTherms	UES dKt
UESkW	UES KW
Fuel	Gas or Electric
ElectricUtility	Electric Utility
GasUtility	Gas Utility
AccountElec	Electric Account Number
AccountGas	Gas Account Number

Field Name	Description
PremiseNum	Premise Number
SamplingID	Unique ID assigned by SBW
SourceFileName	Name of the file the data came from
ProgramCycle	Not used at this level
EUL	Effective Useful Life for measure
DeliveryMethod	For audits, this is Audit type, for other programs it's the mechanism of delivery
DeliveryType	For audits only
RateSchedule	Rate Schedule

Table 5: Applied CFL Hours by Program

Program	HoursPerDay
Res Owner CFL	2.30
Res Audit On-Site	2.30
Res Audit Mail	2.30
New Homes Rebate Electric	2.24
Res Di CFL	2.30
CI Rebate Motor*	2.02
Com DI CFL*	2.02
Com Rebate Gas*	2.02
Res Rebate Gas*	2.02
Res Rebate New Gas*	2.02

*These were added for spillover

Table 6: Incremental Participant Cost Measure Units

ProgramName	Delivery Method	Measure	UnitFieldName
Com Rebate Electric		Motor - Pump System - Variable Speed Control	Quantity
Com Rebate Electric		Irrigiation Pump VFD	Quantity
Com Rebate Electric		Motor - Fan System - Variable Speed Control	Quantity
Com Rebate Electric		Hotel Key Card Room energy Control System	Quantity
Com Rebate Electric		Thermostat Programmable controlling heat pump	Quantity
Com Rebate Electric		Thermostat Programmable controlling space cooling (Cooling DX)	Quantity
Com Rebate Electric		Automated Ventilation VFD Control (Occupancy Sensors/CO2 Sensors)	Quantity
Com Rebate Electric		Cooling Tower VSD Fan Control 1 Speed	Quantity
Com Rebate New Electric		Commercial Reach In Refrigerator	Quantity
Com Rebate New Electric		Irrigiation Pump VFD	Quantity

ProgramName	Delivery Method	Measure	UnitFieldName
Com Rebate New Electric		Motor - Fan System - Variable Speed Control	Quantity
Com Rebate New Electric		Anti Sweat Humidistat Controls	Quantity
Com Rebate New Electric		Hotel Key Card Room Energy Control System	Quantity
New Homes Rebate Electric		CFL	UnitBulb
New Homes Rebate Electric		Efficient Home	UnitFt
Res Owner CFL	InStoreCoupon	CFL	Quantity
Res Rebate Electric		Insulation Basement Wall or crawl Space	Quantity
Res Rebate Electric		Insulation Ceiling/Attic R-11 to R-49	Quantity
Res Rebate Electric		Insulation (Wall) 2*4 (Above Grade) R-0 to R-13	Quantity
Res Rebate Electric		Insulation (Wall) 2*6 (Above Grade) R-0 to R-21	Quantity
Res Rebate Electric		Air Source Heat Pump	Quantity
Res Rebate New Electric		NorthWest Energy Star Manufactured Home	Quantity
Res Rebate New Electric		Air Source Heat Pump	Quantity
Com Rebate Gas		Heating Duct Insulation	UnitFt
Com Rebate Gas		Boiler Pipe/Hot Water Pipe Insualtion	UnitFt
Com Rebate Gas		Programmable Thermostat	UnitFt
Com Rebate Gas		Exterior Wall Insulation	UnitFt
Com Rebate Gas		High Efficiency Water Heater	UnitkBtuH
Com Rebate Gas		Ceiling Insulation	UnitFt
Com Rebate Gas		High Efficiency Furnace	UnitkBtuH
Com Rebate Gas		High Efficiency Boiler	UnitkBtuH
Com Rebate Gas		High Efficiency Windows	UnitFt
Com Rebate New Gas		Programmable Thermostat	UnitFt
Com Rebate New Gas		High Efficiency Furnace	UnitkBtuH
Com Rebate New Gas		High Efficiency Water Heater	UnitkBtuH
Com Rebate New Gas		High Efficiency Boiler	UnitkBtuH
Res Rebate Electric		Exterior Above-grade Wall Insulation	UnitFt
Res Rebate Electric		Foundation/Slab	UnitFt
Res Rebate Electric		Attic Insulation	UnitFt
Res Rebate Gas		Heat Duct Sealing & Insulation	UnitFt
Res Rebate Gas		Attic Insulation R0-R38	UnitFt
Res Rebate Gas		Hot Water Pipe Insulation R0-R4	UnitFt
Res Rebate Gas		Slab Insulation R0-R5	UnitFt
Res Rebate Gas		Boiler Pipe Insulation R0-R4	UnitFt
Res Rebate Gas		Exterior wall insulation R-0 to R-11	UnitFt

ProgramName	Delivery Method	Measure	UnitFieldName
Res Rebate Gas		2011 Attic Insulation R12/R19-R49	UnitFt
Res Rebate Gas		Attic Insulation R0-R49	UnitFt
Res Rebate Gas		Crawl Space Wall Insulation R-0 to R-19	UnitFt
Res Rebate Gas		Crawlspace wall insulation R-0 to R-19	UnitFt
Res Rebate Gas		Attic Insulation R-0 to R-49	UnitFt
Res Rebate Gas		Attic Insulation R-0 to R-38	UnitFt
Res Rebate Gas		Attic Insulation R12/R19-R38	UnitFt
Res Rebate Gas		Attic Insulation R-11 to R-38	UnitFt
Res Rebate Gas		Crawl Space Wall Insulation R0-R19	UnitFt
Res Rebate Gas		Attic Insulation R-19 to R-38	UnitFt
Res Rebate Gas		Attic Insulation R1/R11-R49	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-0 to R-49	UnitFt
Res Rebate Gas		Basement Wall Insulation R0-R13	UnitFt
Res Rebate Gas		Basement wall insulation R-0 to R-11	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-0 to R-38	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-11 to R-38	UnitFt
Res Rebate Gas		Exterior Above-Grade Wall Insulation R0-R13	UnitFt
Res Rebate Gas		Attic Insulation R-11 to R-49	UnitFt
Res Rebate Gas		Basement wall insulation R-0 to R-13	UnitFt
Res Rebate Gas		Exterior wall insulation R0 to R11	UnitFt
Res Rebate Gas		Attic Insulation R-19 to R-49	UnitFt
Res Rebate Gas		Crawl space insulation R-0 to R-19	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-19 to R-49	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-19 to R-38	UnitFt
Res Rebate Gas		Attic/ceiling insulation R-11 to R-49	UnitFt
Res Rebate Gas		Exterior wall insulation R-0 to R-13	UnitFt

Table 7: Audit Fuel Types

Audit Type	Space Heat Fuel	Water Heat Fuel	CustomerType	Electric
A	Natural Gas NWE	Natural Gas NWE	Residential	NWE
B	Natural Gas NWE	Natural Gas NWE	Residential	Other
C	Natural Gas NWE	Electric Other	Residential	Other
D	Electric NWE	Electric NWE	Residential	NWE
E	Other Fuel Other	Electric NWE	Residential	NWE
F	Natural Gas NWE	Electric NWE	Residential	NWE
G	Electric NWE	Natural Gas NWE	Residential	NWE
H	Electric NWE	Electric NWE	Residential	NWE
O	Natural Gas NWE	Natural Gas NWE	Commercial	NWE

Audit Type	Space Heat Fuel	Water Heat Fuel	CustomerType	Electric
R	Natural Gas Other	Natural Gas Other	Residential	NWE

Table 8: NEEA Program Components

Short Name	ProgramComponent
Res ES Dishwashers	Residential Energy Star Dishwashers
Res ES Refrigerators	Residential Energy Star Refrigerators
Res ES Windows	Residential Energy Star Windows
Res ES CFL Bulbs	Residential Energy Star CFL Bulbs
Res ES CFL Fixtures	Residential Energy Star CFL Fixtures
Res ES Clothes Washers	Residential Energy Star Clothes Washers
Res ES New Homes	Residential Energy Star New Construction
Com BOC	Commercial Building Operator Certification
Com Verdiem	Commercial Verdiem
Ind Evap Fan VFD	Industrial Evaporative Fan VFD
Ind Magna Drive	Industrial MagnaDrive
Irr Soil Moisture	Irrigation Soil Moisture Data Logger
BacGen	Industrial BacGen
Energy Codes 1997-2004	Energy Codes 1997-2004
Ind Eff Alliance	Industrial Efficiency Alliance
Ind Distribution Eff	Industrial Distribution Efficiency Initiative
Com Cx Public	Commercial Commissioning Public Buildings
Com Better Bricks	Commercial Better Bricks
Com Evap Fan VFD	Commercial Evaporative Fan VFD
Com Magna Drive	Commercial Magna Drive
Com Drive Power	Commercial Drive Power
Res ES TV	Residential Energy Star TVs
Res Com 80 Plus	80 Plus Power Supply
Res ES Specialty CFL Bulbs	Residential Energy Star Specialty CFL Bulbs
Energy Codes SF >2004	Residential Single-Family Codes > 2004
Energy Codes MF >2004	Residential Multi-Family Codes > 2004
Res DHP	Residential Ductless Heat Pump
Ind Drive Power	Industrial Drive Power
Com Lighting	Commercial Lighting
Energy Codes 1997-2011	Energy Codes 1997-2011

Table 9: Program Component Sectors

ProgramName	ShortName	ProgramComponent	Sector
Building Operator Certification	CI Training BOC	Building Operator Certification	Nres
DEQ Appliance	DEQ Rebate Appliance	DEQ Appliance	Res
E+ Audit Home or Business	Audit Tradeshow	Audit Tradeshow	Res
E+ Audit Home or Business	Com Audit Electric	Small Business Electric Appraisal	Nres
E+ Audit Home or Business	Res Audit Mail	Home Electric Survey	Res
E+ Audit Home or Business	Res Audit Mail Out FWX	Res Audit Mail Out FWX	Res
E+ Audit Home or Business	Res Audit On-Site	Home On-site Audit	Res
E+ Building Blocks Pilot	Building Blocks	E+ Building Blocks Pilot	Nres
E+ Business Partners	CI Custom	E+ Business Partners	Nres
E+ Commercial Existing Electric Rebate	Com Rebate Electric	E+ Commercial Existing Electric Rebate	Nres
E+ Commercial Existing Gas Rebate	Com Rebate Gas	E+ Commercial Existing Gas Rebate	Nres
E+ Commercial Lighting	Com DI CFL	Commercial CFL Direct Install	Nres
E+ Commercial Lighting	Com Rebate Lighting	Commercial Lighting Rebate	Nres
E+ Commercial New Electric Rebate	Com Rebate New Electric	E+ Commercial New Electric Rebate	Nres
E+ Commercial New Gas Rebate	Com Rebate New Gas	E+ Commercial New Gas Rebate	Nres
E+ Electric Motor/Rewind Rebate	CI Rebate Motor	E+ Electric Motor/Rewind Rebate	Nres
E+ Free Weatherization/Fuel Switch	Res Free Wx	E+ Free Weatherization/Fuel Switch	Res
E+ Irrigation	Irr Custom	E+ Irrigation	Nres
E+ New Homes	New Homes Rebate Electric	E+ New Homes	Res
E+ Renewable	CI Renewable	Business Renewable	Nres
E+ Renewable	Res Renewable	Residential Renewable	Res
E+ Residential Existing Electric Rebate	Res Rebate Electric	E+ Residential Existing Electric Rebate	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Audit	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Direct Install	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Farmer's Market	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Gas DSM Event	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Green Blocks Audit	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Home Builders Assoc Home & Garden	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	May Fair	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	NWE Office	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Promotion	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Unknown	Res
E+ Residential Existing Gas Rebate	Res Kits Gas	Residential Existing Gas Free Kits	Res
E+ Residential Existing Gas Rebate	Res Rebate Gas	Residential Existing Gas Rebate	Res
E+ Residential Lighting	CFL Buy-Down	Upstream CFL Buy-down	Both
E+ Residential Lighting	Res DI CFL	Residential CFL Direct Install	Res

ProgramName	ShortName	ProgramComponent	Sector
E+ Residential Lighting	Res Owner CFL	In-Store Coupon	Res
E+ Residential Lighting	Res Owner CFL	Mail-In	Res
E+ Residential Lighting	Res Owner CFL	Mail-Out	Res
E+ Residential Lighting	Res Owner CFL	Trade Show	Res
E+ Residential Lighting	Res Owner CFL	Unknown	Res
E+ Residential New Electric Rebate	Res Rebate New Electric	E+ Residential New Electric Rebate	Res
E+ Residential New Gas Rebate	Res Rebate New Gas	E+ Residential New Gas Rebate	Res
Low Income Appliance	Low Income Appliance	Low Income Appliance	Res
Motor Management Training	CI Training Motor	Motor Management Training	Nres
NEEA Initiatives	BacGen	Industrial BacGen	Res
NEEA Initiatives	Com Better Bricks	Commercial Better Bricks	Nres
NEEA Initiatives	Com BOC	Commercial Building Operator Certification	Nres
NEEA Initiatives	Com Cx Public	Commercial Commissioning Public Buildings	Nres
NEEA Initiatives	Com Drive Power	Commercial Drive Power	Nres
NEEA Initiatives	Com Evap Fan VFD	Commercial Evaporative Fan VFD	Nres
NEEA Initiatives	Com Lighting	Commercial Lighting	Nres
NEEA Initiatives	Com Magna Drive	Commercial Magna Drive	Nres
NEEA Initiatives	Com Verdiem	Commercial Verdiem	Nres
NEEA Initiatives	Energy Codes 1997-2004	Energy Codes 1997-2004	Res
NEEA Initiatives	Energy Codes 1997-2011	Energy Codes 1997-2011	Res
NEEA Initiatives	Energy Codes MF >2004	Residential Multi-Family Codes > 2004	Res
NEEA Initiatives	Energy Codes SF >2004	Residential Single-Family Codes > 2004	Res
NEEA Initiatives	Ind Distribution Eff	Industrial Distribution Efficiency Initiative	Res
NEEA Initiatives	Ind Drive Power	Industrial Drive Power	Res
NEEA Initiatives	Ind Eff Alliance	Industrial Efficiency Alliance	Res
NEEA Initiatives	Ind Evap Fan VFD	Industrial Evaporative Fan VFD	Res
NEEA Initiatives	Ind Magna Drive	Industrial MagnaDrive	Res
NEEA Initiatives	Irr Soil Moisture	Irrigation Soil Moisture Data Logger	Nres
NEEA Initiatives	Res Com 80 Plus	80 Plus Power Supply	Res
NEEA Initiatives	Res DHP	Residential Ductless Heat Pump	Res
NEEA Initiatives	Res ES CFL Bulbs	Residential Energy Star CFL Bulbs	Both
NEEA Initiatives	Res ES CFL Fixtures	Residential Energy Star CFL Fixtures	Both
NEEA Initiatives	Res ES Clothes Washers	Residential Energy Star Clothes Washers	Res
NEEA Initiatives	Res ES Dishwashers	Residential Energy Star Dishwashers	Res
NEEA Initiatives	Res ES New Homes	Residential Energy Star New Construction	Res
NEEA Initiatives	Res ES Refrigerators	Residential Energy Star Refrigerators	Res
NEEA Initiatives	Res ES Specialty CFL Bulbs	Residential Energy Star Specialty CFL Bulbs	Both

ProgramName	ShortName	ProgramComponent	Sector
NEEA Initiatives	Res ES TV	Residential Energy Star TVs	Res
NEEA Initiatives	Res ES Windows	Residential Energy Star Windows	Res
Vending Miser	Vending Miser DI	Vending Miser	Nres

Table 10: Motor Standard Efficiency

lkpHP	lkpNEMAEfficiency	lkpRPM	lkpType_ODPorTEFC	CodeEff	NWECodeEff
600	94.1	3570	ODP	#N/A	0.911
75	93.6	3600	ODP	0.93	0.907
200	95.8	1200	TEFC	0.95	0.95

Table 11: NWE to SBW Program Names

NWE Program Name	Sampling Unit	SBW Program Name
E+ Audit for the Home On-Site (Electric and Gas)	Audit	Audit Tradeshow
E+ Energy Appraisal for Small Businesses (Electric)	Audit	Com Audit Electric
E+ Energy Usage Survey Mail-In (Electric)	Audit	Res Audit Mail
	Audit	Res Audit Mail Out FWX
E+ Audit for the Home On-Site (Electric and Gas)	Audit	Res Audit On-Site
E+ Commercial Lighting Rebate Program	Measure Type	Com Rebate Lighting
E+ Commercial Existing Electric Savings Program	Measure Type	Com Rebate Electric
E+ Commercial Natural Gas Savings Program (Existing)	Measure Type	Com Rebate Gas
Vending Miser	Measure Type	Vending Miser DI
E+ Commercial New Construction Electric Savings Program	Measure Type	Com Rebate New Electric
E+ Commercial Natural Gas Savings Program (New Construction)	Measure Type	Com Rebate New Gas
E+ Residential Electric Savings Program	Measure Type	Res Rebate Electric
E+ Residential Existing Gas Savings Rebate Program	Measure Type	Res Rebate Gas
E+ Residential New Construction Program (Electric)	Measure Type	Res Rebate New Electric
E+ Residential New Construction Rebate Program (Gas)	Measure Type	Res Rebate New Gas
E+ Renewable Energy Program - Residential	Measure Type	Res Renewable
E+ Renewable Energy Program - Non-Residential	Measure Type	CI Renewable
Building Operator Certification Program	Population	CI Training BOC
Motor Management Training	Population	CI Training Motor
E+ Irrigation Program	Project	Irr Rebate
E+ Electric Motor Rebate Program	Project	CI Rebate Motor
Commercial CFL Direct Install	Project	Com DI CFL
E+ Free Weatherization Program & Fuel Switch	Project	Res Free Wx
Low Income Appliance Replacement	Project	Low Income Appliance
Residential CFL Direct Install	Project	Res DI CFL

NWE Program Name	Sampling Unit	SBW Program Name
Residential CFL Owner Install	Project	Res Owner CFL
E+ New Homes Program (Electric)	Project	New Homes Rebate Electric
E+ Business Partners Program	Project	CI Custom
E+ Irrigation	Project	Irr Custom

Table 12: Spillover Measure Costs

ProgramType	Measure	SpilloverMeasureCost	Unit
com	CFLs	3	unit
com	Efficient Furnace	6.5	kBtuhr
com	LEDs	1022	unit
com	T5s	60	unit
com	T8s	60	unit
com	Weatherstrip/Caulk Doors	69	unit
com	Weatherstrip/Caulk Windows	14.85	unit
res	CFLs	3	unit
res	Efficient Dryer	55	unit
res	Efficient Refrigerator	29	unit
res	Efficient TV	100	unit
res	Efficient Washer	124	unit
res	Efficient Window A/C Unit	14	unit
res	Electrical Box Foam Gaskets	5	unit
res	Insulate Exterior Wall	2.34	square feet
res	Weatherstip/Caulk Windows	14.85	unit
res	Weatherstrip/Caulk Doors	69	unit
res	Weatherstrip/Caulk Windows	14.85	unit

Table 13: Trade Show Unit Energy Savings

Program Year	StartDate	EndDate	Category	Measure	UESdKTherm
2010-2011	7/1/2010	6/30/2011	weatherization kits	WeatherizationKit	2.34980616
2010-2011	7/1/2010	6/30/2011	hot water savings kit	HotWaterKit	1.95809061
2010-2011	7/1/2010	6/30/2011	window insulation kit	WindowKits	2.26124164
2009-10	7/1/2009	6/30/2010	weatherization kits	WeatherizationKit	2.34980616
2009-10	7/1/2009	6/30/2010	hot water savings kit	HotWaterKit	1.95809061
2009-10	7/1/2009	6/30/2010	window insulation kit	WindowKits	2.26124164
2008-09	7/1/2008	6/30/2009	weatherization kits	WeatherizationKit	2.34980616
2008-09	7/1/2008	6/30/2009	hot water savings kit	HotWaterKit	1.95809061
2008-09	7/1/2008	6/30/2009	window insulation kit	WindowKits	2.26124164

Program Year	StartDate	EndDate	Category	Measure	UESdKTherm
2007-08	7/1/2007	6/30/2008	weatherization kits	WeatherizationKit	3.58
2007-08	7/1/2007	6/30/2008	hot water savings kit	HotWaterKit	2.73
2007-08	7/1/2007	6/30/2008	window insulation kit	WindowKits	3.58
2006-07	7/1/2006	6/30/2007	weatherization kits	WeatherizationKit	3.58
2006-07	7/1/2006	6/30/2007	hot water savings kit	HotWaterKit	2.73
2006-07	7/1/2006	6/30/2007	window insulation kit	WindowKits	3.58
2010-2011	7/1/2010	6/30/2011	TradeShow Thermostat	TradeShow Thermostat	4.48681267
2011-12	7/1/2011	6/30/2012	weatherization kits	WeatherizationKit	2.34980616
2011-12	7/1/2011	6/30/2012	hot water savings kit	HotWaterKit	1.95809061
2011-12	7/1/2011	6/30/2012	window insulation kit	WindowKits	2.26124164

Table 14: Watt Equivalence

Installed CFL watts	Incandescent Equivalent watts	Delta Watts
0	0	0.0
9	40	31.0
10	40	30.0
11	40	29.0
11.5	40	28.5
13	40	27.0
13.5	40	26.5
14	60	46.0
15	60	45.0
16.5	60	43.5
17	75	58.0
18	75	57.0
19	75	56.0
19.5	75	55.5
19.75	75	55.3
20	75	55.0
21	75	54.0
22.667	75	52.3
23	75	52.0
24	75	51.0
25	75	50.0
26	75	49.0
27	100	73.0
30	100	70.0

Installed CFL watts	Incandescent Equivalent watts	Delta Watts
32	100	68.0
40	150	110.0
42	150	108.0

2.3.2. Algorithm Lookup Tables

The algorithms presented in this section were used either in calculating the evaluation savings or creating values in the workbooks. As explained earlier in this chapter, the algorithms used in evaluating the savings are pieces of Access SQL code. They can be used to calculate the sampled evaluation savings from the evaluation sampled raw data. The algorithms used in the workbooks are parts of Excel equations.

Table 15: Mail-in Audit Recommendation Savings Algorithms

Program	Measure	UES1	UES2	Constant	dkT Savings	kWh Savings	Notes
Res Audit Mail	No Implementation			0	[Constant]	[Constant]	
Res Audit Mail	CFLs			0.365		[Constant]*[HoursPerDay]*[Quantity]*([Base Watts per Bulb]-[Implemented Watts per Bulb])	Hrs_per_day to be provided from CFL metering data analysis
Res Audit Mail	Clean Refrigerator Coils			0	[Constant]	[Constant]	Negligible savings; savings only if baseline coils are significantly dusty, which is only likely to occur over a long period. Clean once, then cleanliness persists for years - not reasonable to assume same energy savings repeat every year.
Res Audit Mail	Weatherstrip/Caulk Windows	0.0099	2.3000		iif(txtHeatFuel="Gas",UES1,0)*[Quantity]*[Lineal Feet Each]	iif(txtHeatFuel="Electric",UES2,0)*[Quantity]*[Lineal Feet Each]	Blanks? Other = 0
Res Audit Mail	Reduce DHW Setpoint	3.26	2.30		iif(txtHeatFuel="Gas",UES1,iif(isnull(txtHeatFuel),[UES1],0))*[Quantity]	iif(txtHeatFuel="Electric",UES2,0)*[Quantity]	Blanks? savings from pressure drop - use baseline UECs from programmable T-stat measure?
Res Audit Mail	Furnace Filters	0.3	112		[UES1]	[UES2]	Fan energy (kWh) saved; fuel impacts uncertain - new filter yields higher mass flow/lower-temp air while old filter yields lower mass flow/higher-temperature air
Res Audit Mail	Launder with Cold Water	3.2	6542		iif(txtHeatFuel="Gas",[UES1],0)	iif(txtHeatFuel="Electric",[UES2],0)	Blanks? Other = 0
Res Audit Mail	Adjust Heating Setpoint			9.7	[Constant]		
Res Audit Mail	Adjust Cooling Setpoint			869		[Constant]	

Program	Measure	UES1	UES2	Constant	dkT Savings	kWh Savings	Notes
Res Audit Mail	Low Flow Showerheads			1.43	[Constant]		www.nwcouncil.org/energy/.../ProCostRTF_Freezer_08142012.xlsm; Baseline Development worksheet
Res Audit Mail	Unplug Second Refrigerator			535	[Constant]		Specify heating system type, cooling system?
Res Audit Mail	Unplug second freezer			401	[Constant]		
Res Audit Mail	Electrical Box Foam Gaskets	0.041			[UES1]*[Quantity]		

Table 16: File Review Equations Constants

Tbl Num	FieldTo	Program	Measure	MeasureType	Constant	Workbooksql
5	Constant	Com DI CFL	CFL		1.095 AS Constant	1.095 AS Constant
11	ConstantWall	Res Rebate Electric	Exterior Above-grade Wall Insulation	Exterior Above-grade Wall Insulation	.312 AS ConstantWall	"\if(PreRWall=0,if(ProgramYearWall=2009,if(or(PostRWall=11,PostRWall=12),0.312,if(PostRWall>=13,0.334,0)),if(and(PostRWall>=13,PostRWall<21),2.41,if(PostRWall>=21,2.68,0))),0)" As ConstantWall
17	Constant	\iif(d.[Electric Savings (kWh)]> 0, Res Rebate New Electric, Res Owner CFL)			1.3505 AS Constant	1.3505 AS Constant
29	Constant	Res Owner CFL	CFL		1.3505 AS Constant	1.3505 AS Constant
32	Constant	Res Owner CFL	CFL		1.3505 AS Constant	1.3505 AS Constant

Tbl Num	FieldTo	Program	Measure	MeasureType	Constant	Workbooksql
34	ConstantMotor	CI Rebate Motor	Motor		0.5592 AS ConstantMotor	0.5592 AS ConstantMotor
35	Constant	Res DI CFL	CFL		1.095 AS Constant	1.095 AS Constant
36	Constant	Res Owner CFL	CFL		1.3505 AS Constant	1.3505 AS Constant
37	Constant	Res Owner CFL	CFL		1.3505 AS Constant	1.3505 AS Constant
38	Constant	Vending Miser DI	VendingMiser	VendingMiser	1441 as Constant	1441 as Constant
94	ConstantAttic	Res Rebate Gas	Attic/ceiling insulation R-0 to R-49	Attic insulation	0.011085554 AS ConstantAttic	0.050127781 AS ConstantAttic
95	ConstantAerator	Res Kits Gas		Hot Water Reduction Kit	0.138660779 AS ConstantAerator	0.138660779 AS ConstantAerator
95	ConstantShower	Res Kits Gas		Hot Water Reduction Kit	1.819429832 AS ConstantShower	1.819429832 AS ConstantShower
95	ConstantTstat	Res Kits Gas		Thermostat Control Kit	4.486812668 AS ConstantTstat	4.486812668 AS ConstantTstat
95	ConstantWdw	Res Kits Gas		Window Kit	2.261241639 AS ConstantWdw	2.261241639 AS ConstantWdw
95	ConstantWx	Res Kits Gas		Weatherization Kit	2.3498061639 AS ConstantWx	2.3498061639 AS ConstantWx
99	ConstantTstat	Res Kits Gas		Thermostat Control Kit	4.486812668 AS ConstantTstat	4.486812668 AS ConstantTstat
	Constant	Com Rebate Electric	Irrigiation Pump VFD	Variable Speed Control	300 AS Constant	300 AS Constant
	Constant	Com Rebate Electric	Energy Star Computer	Efficient Office Equipment	102.5 AS Constant	
		Com Rebate Electric	Hotel Key Card Room energy Control System	Hotel Key Card Room energy Control System	541.738625932592 AS Constant	
		Com Rebate	Energy Star Server	Efficient Office	42472.67482656 AS Constant	

Tbl Num	FieldTo	Program	Measure	MeasureType	Constant	Workbooksql
		Electric		Equipment		
		Com Rebate Electric	Motor - Fan System - Variable Speed Control	Variable Speed Control	455.809382465246 AS Constant	
		Com Rebate Electric	Motor - Pump System - Variable Speed Control	Variable Speed Control	455.809382465246 AS Constant	
		Com Rebate Electric	Server (Early Retirement)	Efficient Office Equipment	803.05808304 AS Constant	
		Com Rebate Gas	High Efficiency Boiler	Efficient Heating System	0.290786345575865 AS Constant	
		Com Rebate Gas	High Efficiency Furnace	Efficient Heating System	0.290786345575865 AS Constant	
		Com Rebate Gas	High Efficiency Windows	High Efficiency Windows	0.189366644146633 AS Constant	
		Com Rebate New Electric	Irrigiation Pump VFD	Variable Speed Control	300 AS Constant	
		Res Rebate Electric	Insulation (Wall) 2*6 (Above Grade) R-0 to R-21		2.68 AS Constant	

Table 17: Department of Environmental Quality Unit Energy Savings Values

ProgramName	MeasureType	Measure	BuildingType	UES1	UES2	kWh Algorithm	dkTherms Algorithm
DEQ Rebate Appliance	Efficient Clothes Washers	Clothes Washers	All	179.3062736	0.466616781	[UES1]	[UES2]
DEQ Rebate Appliance	Efficient Dishwashers	Dishwashers	All	30.08843892	0.092297936	[UES1]	[UES2]
DEQ Rebate Appliance	Efficient Freezers	Freezers	All	34.37339503	0	[UES1]	[UES2]
DEQ Rebate Appliance	Efficient Refrigerators	Refrigerators	All	83.3060719	0	[UES1]	[UES2]

Table 18: Low Income Appliance Unit Energy Savings Update

ProgramName	MeasureType	Measure	BuildingType	NWE_UES	UES1	kWh Algorithm	dkTherms Algorithm
Low Income Appliance	Efficient Refrigerators	Refrigerator	All	95	0	[Quantity]*[UES1]	

Table 19: Motor Rebate Equation Parts

Program Year	StartDate	EndDate	HPLow	HPHigh	Div1	UseNEMA	Div2	Notes
2007-08	7/1/2007	6/30/2008	0	20	0.865	TRUE	100	for 3 hp=(HP*0.7456*0.75/0.865)-((HP*0.7456*0.75/(Nema/100)))
2007-08	7/1/2007	6/30/2008	21	999	0.95	TRUE	100	for 200 hp=(HP*0.7456*0.75/0.95)-((HP*0.7456*0.75/(NEMA/100)))
2008-09	7/1/2008	6/30/2009	0	10	0.875	TRUE	100	for 3 hp=(HP*0.7456*0.75/0.875)-((HP*0.7456*0.75/(NEMA/100)))
2008-09	7/1/2008	6/30/2009	11	100	0.91	TRUE	100	for 15 hp=(HP*0.7456*0.75/0.91)-((HP*0.7456*0.75/(NEMA/100)))
2008-09	7/1/2008	6/30/2009	101	999	0.911	FALSE	0.941	for 600 hp=(HP*0.7456*0.75/0.911)-(HP*0.7456*0.75/0.941)
2009-10	7/1/2009	6/30/2010	0	16	0.895	TRUE	1	For HP<16=((hp<30, (HP*0.7456*0.75/0.895)-(HP*0.7456*0.75/NEMA))
2009-10	7/1/2009	6/30/2010	17	50	0.924	TRUE	1	for 30 hp=((HP*0.7456*0.75/0.924)-(HP*0.7456*0.75/NEMA))
2009-10	7/1/2009	6/30/2010	51	999	0.91	TRUE	1	for 75 hp=((HP*0.7456*0.75/0.91)-(HP*0.7456*0.75/NEMA))
2010-11	7/1/2010	6/30/2011	0	999	0.895	TRUE	100	for 10 hp=(HP*0.7456*0.75/0.895)-((HP*0.7456*0.75/(NEMA/100)))
2011-12	7/1/2011	6/30/2012	0	999	0.895	TRUE	100	Guess

Table 20: Simplified Measure Algorithms

Program	MeasureType	Measure	kWhAlgorithm	Behavioral	length	Notes
Com Rebate Lighting	CFL		(52*(nz(QuantityRemoved, 0)*nz(WattagePre, 0)-nz(QuantityInstalled, 0)*nz(WattagePost, 0))*nz(HoursOnPerWeekNew, 0))/1000	N	121	
Com Rebate Lighting	T5		(52*(nz(QuantityRemoved, 0)*nz(WattagePre, 0)-nz(QuantityInstalled, 0)*nz(WattagePost, 0))*nz(HoursOnPerWeekNew, 0))/1000	N	121	
Com Rebate	T8		(52*(nz(QuantityRemoved, 0)*nz(WattagePre, 0)-	N	121	

Program	MeasureType	Measure	kWhAlgorithm	Behavioral	length	Notes
Lighting			nz(QuantityInstalled, 0)*nz(WattagePost, 0))*nz(HoursOnPerWeekNew, 0))/1000			
Com Rebate Lighting	Occupancy Sensors		(52*nz(Quantity, 0)*nz(WattsPerSensor, 0)*nz(HoursOnPerWeekPre, 0)*nz(PercentOffWithSensor, 0))/1000	N	100	
Com Rebate Lighting	Area Wide Efficient Lighting		52*(nz(RemovedWattsEa, 0)*nz(HoursOnPerWeekPre, 0)-nz(InstalledWattsEa, 0)*nz(HoursOnPerWeekNew, 0))/1000	N	105	Took out quantities because they weren't in the workbooks. They are 1 in the database so ti still works out right
Com DI CFL	CFL		52*nz(Quantity, 0)*(nz(WattagePre, 0) - nz(WattagePost, 0))*nz(HoursOnPerWeek, 0)/1000	N	86	Faith confirmed with Mary that she is coming up with HoursOnPerWeek for com lighting
Res DI CFL	CFL		365*nz(Quantity, 0)*(nz(WattagePre, 0) - nz(WattagePost, 0))*nz(HoursPerDay, 0)/1000	N	84	HoursOnPerDay from Bing's study
Res Owner CFL	CFL		365*nz(Quantity, 0)*(nz(WattagePre, 0) - nz(WattagePost, 0))*nz(HoursPerDay, 0)/1000	N	84	HoursOnPerDay from Bing's study
New Homes Rebate Electric	CFL		365*HoursPerDay*(nz([9Qty],0)*([9Pre]-[9Post])+[13Qty]*([13Pre]-[13Post])+nz([15Qty],0)*([15Pre]-[15Post])+nz([20Qty],0)*([20Pre]-[20Post])+nz([24Qty],0)*([24Pre]-[24Post])+nz([26Qty],0)*([26Pre]-[26Post])+nz([32Qty],0)*([32Pre]-[32Post]))/1000	N	244	HoursOnPerDay from Bing's study
CI Rebate Motor	Efficient Motor	Efficient Motor	iif(isnull(StandardEfficiency) or isnull(NEMAEfficiency), 0, 0.75*0.7456*nz(HP, 0)*(1/(StandardEfficiency)-1/(NEMAEfficiency))*(nz(OperatingHours, 0)))	N	151	
Com Rebate Lighting	Delamping		52*(nz([HoursonPerWeekNew], 0)*(nz([Fixture Quantity Removed], 0)*nz([Fixture Wattage Removed], 0)-nz([Fixture Quantity Implemented], 0)*nz([Fixture Wattage Implemented], 0)))/1000	N	180	

3. WEEKLY STATUS REPORTS

From: Mike Baker
Sent: Monday, November 26, 2012 9:08 AM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 11-23-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Continued meetings and discussions to review individual program findings with NWE staff.
2. Presented cost-effectiveness findings to NWE staff.
3. Continued edits to report in response to internal reviews and comments provided by NWE staff.

There are no additional issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Monday, November 19, 2012 10:28 AM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 11-16-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Continued meetings and discussions to review individual program findings with NWE staff.
2. Continued edits to report in response to internal reviews and comments provided by NWE staff.

There are no additional issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Monday, November 12, 2012 9:19 AM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 11-9-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Continued meetings and discussions to review individual program findings with NWE staff.
2. Began edits to report in response to internal reviews and comments provided by NWE staff.

There are no additional issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Monday, November 05, 2012 2:22 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 11-2-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. All issues related to cost data were resolved.
2. Continued meetings to review individual program findings with NWE staff.
3. Reviewed with NWE staff structure and content of the impact results workbooks.

There are no other issues that require discussion at this time

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, October 26, 2012 3:40 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 10-26-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Work continued on resolving issues with cost data.
2. Continued meetings to review individual program findings with NWE staff.

There are no other issues that require discussion at this time

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, October 19, 2012 4:34 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 10-19-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Second draft of the evaluation findings workbook was delivered which shows how we estimated program-level impacts
2. Complete draft of the evaluation report was delivered.
3. First draft of the impact results workbooks (Calendar and Tracker) were submitted. Work continued on resolving issues with cost data.
4. Meetings began to review individual program findings with NWE staff.

There are no other issues that require discussion at this time

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, October 12, 2012 5:34 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 10-12-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. First draft of the evaluation findings workbook was delivered which shows how we estimated program-level impacts
2. Draft of the evaluation report was delivered containing all text portions and captions for all tables and figures. Work continues on the preparation of the 918 report quality tables and figures.
3. Appendix1 tables for each program have been prepared and programming and quality control review continues on the various portfolio summary tables required by this appendix.

There are no other issues that require discussion at this time

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, October 05, 2012 5:03 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 10-5-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. RIA has delivered all draft sections of the Process evaluation and they are being assembled in the main document by SBW
2. Most sections of the Impact evaluation have been drafted
3. 700 tables and charts have been prepared for insertion in the main document. Approximately 300 more need to be prepared.
4. Extrapolation of evaluation findings to each of the 24 programs is underway but more work is required to develop solid results.
5. Appendix1 tables have been prepared and can be populated once the extrapolation work is complete.

There are no other issues that require discussion at this time

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, September 28, 2012 5:31 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 9-28-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. Analysis of light logger data was completed.
2. SBW continued analysis of NEEA initiatives.
3. Analysis of persistence and install/paid date continued.
4. Completed analysis of participants data to identify choice customers.
5. Began final QC review of all types of data in the evaluation database.
6. Work continued at SBW to develop all data processing procedures needed estimate net and gross impacts.
7. Continued preparing sections of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, September 21, 2012 4:30 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 9-21-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. QC was completed for on-site survey workbooks.
2. Reasons for differences in savings estimates for on-site sample were tabulated.
3. Analysis of light logger data continued.
4. RIA completed analysis of survey data.
5. SBW continued analysis of NEEA initiatives.
6. Analysis of persistence and install/paid date began.
7. Work continued at SBW to develop all data processing procedures needed estimate net and gross impacts.
8. Continued preparing sections of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, September 14, 2012 3:54 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 9-14-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. We have completed QC reviews on 579 data collection workbooks.
2. Analysis of light logger data continued.
3. RIA continued with survey analysis (cleaning, recoding, table development).
4. SBW continued analysis of NEEA initiatives.
5. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
6. Continued preparing sections of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, September 07, 2012 3:51 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 9-7-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. On-site surveys are complete and we have completed QC reviews on 441 data collection workbooks.
2. Participant telephone surveys are complete.
3. Began analysis of light logger data.
4. Completed interviews with performance contractors.
5. RIA continued with survey analysis (cleaning, recoding, table development).
6. SBW continued analysis of NEEA initiatives.
7. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
8. Continued preparing sections of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, August 31, 2012 3:54 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 8-31-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 659 on-site surveys are complete and we have completed QC reviews on 414 data collection workbooks.
2. Participant surveys continued with hard to reach customers as on-site work is completed.
3. Data collection complete for 117 persistence sites, via telephone or on-site and QC reviews have been completed for 55 sites.
4. Light loggers have been removed from 75 sites and the data downloaded.
5. Began interviews with performance contractors.
6. RIA continued with survey analysis (cleaning, recoding, table development).
7. SBW continued analysis of NEEA initiatives.
8. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
9. Began preparing sections of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, August 24, 2012 3:50 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 8-24-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 636 on-site surveys are complete and we have completed QC reviews on 305 data collection workbooks. Note that QC review count decreased from last week due to discovery of a problem with handling of our Res Audit workbooks. That problem has been resolved.
2. Participant surveys continued with hard to reach customers as on-site work is completed,
3. Data collection complete for 101 persistence sites, via telephone or on-site.
4. Light loggers have been removed from 50 sites and the data downloaded.
5. BOC survey was completed. Interviews underway with free weatherization agency staff.
6. RIA continued with survey analysis (cleaning, recoding, table development).
7. SBW continued analysis of NEEA initiatives.
8. Word file with the final report heading structure was approved by NWE.
9. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, August 17, 2012 2:28 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 8-17-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 622 on-site surveys are complete and we have completed QC reviews on 311 data collection workbooks.
2. Participant surveys continued with hard to reach customers as on-site work is completed,
3. Data collection complete for 94 persistence sites, via telephone or on-site.
4. Light loggers have been removed from 20 sites and the data downloaded.
5. Motors training survey completed, BOC survey still underway
6. RIA continued with survey analysis (cleaning, recoding, table development).
7. SBW continued analysis of NEEA initiatives.
8. Standardized program names were developed in collaboration with NWE staff and used in developing the heading structure for the final report. A word file with the final report heading structure was sent to NWE for review.
9. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, August 10, 2012 3:45 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 8-10-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 599 on-site surveys are complete and we have completed QC reviews on 244 data collection workbooks.
2. Participant surveys continued with hard to reach customers as on-site work is completed,
3. Data collection complete for 83 persistence sites, via telephone or on-site.
4. BOC training Motors training survey are underway
5. RIA continued with survey analysis (cleaning, recoding, table development).
6. SBW continued analysis of NEEA initiatives.
7. Continued development of final report outline.
8. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, August 03, 2012 4:21 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 8-3-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 580 on-site surveys are complete and we have completed QC reviews on 225 data collection workbooks.
2. Participant surveys continued with hard to reach customers as on-site work is completed,
3. Data collection complete for 63 persistence sites, via telephone or on-site.
4. Finalized BOC training survey and developed draft of Motors training survey; sent BOC to survey house for coding
5. RIA continued with survey analysis (cleaning, recoding, table development).
6. SBW continued analysis of NEEA initiatives.
7. Continued development of final report outline.
8. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, July 27, 2012 2:56 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 7-27-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 558 on-site surveys are complete and we have completed QC reviews on 207 data collection workbooks.
2. Participant surveys continued with hard to reach customers as on-site work is completed,
3. Data collection complete for 30 persistence sites, via telephone or on-site.
4. RIA continued with survey analysis (cleaning, recoding, table development)
5. SBW began analysis of NEEA initiatives.
6. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
7. Held meeting with NWE staff to discuss draft outline of the final report.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, July 20, 2012 3:53 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 7-20-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 513 on-site surveys are complete and we have completed QC reviews on 164 data collection workbooks.
2. As of yesterday 27 Participant surveys were complete with hard to reach customers and 7 more scheduled. These will continue through August as on-site work is completed,
3. Data collection complete for 19 persistence sites, via telephone or on-site.
4. TA Omnibus and CFL TA - Retailer participants surveys are being conducted.
5. Non-residential Nonparticipant survey is complete.
6. Draft of BOC survey instrument sent to NWE for review.
7. RIA continuing with survey analysis (cleaning, recoding, table development)
8. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
9. Developed a draft outline of the final report and sent it to NWE for comments.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, July 13, 2012 2:51 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 7-13-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. As of today 474 on-site surveys are complete.
2. Participant telephone surveys continued with hard to reach customers following SBW site visits
3. TA Omnibus survey - just launched.
4. Nonparticipant survey - All of the residential surveys are complete (67); have 69 of the commercial surveys completed. No problems encountered.
5. CFL TA - Retailer participants survey - launching Friday/Monday.
6. RIA continuing with survey analysis (cleaning, recoding, table development)
7. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
8. Conference call on matching tracking record accounts with NWE master account file. Gina will do more work on this in collaboration with KEMA and then with Dave.
9. 25 persistence on-site sample recruited and a few on-sites completed.

There are no other issues that require discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, July 06, 2012 3:16 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 7-6-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. The holiday week made on-sites difficult. As of today 389 on-site surveys are complete.
2. Participant telephone surveys continued with hard to reach customers following SBW site visits
3. TA omnibus survey programming issues resolved, testing will start soon.
4. Res/NonRes NonParticipant survey started yesterday
5. Buy Down and CFL Coupon Retailer survey still on track to start next week.
6. RIA continuing with survey analysis (cleaning, recoding, table development)
7. Work continued at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts.
8. Further work done on matching tracking record accounts with NWE master account file, and meeting scheduled for Monday to discuss next steps.
9. Work began on identifying participant spillover sites and logistics for site visits to quantify spillover
10. Began assigning persistence sample to field staff for on-site visits.

There are no other issues that required discussion at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, June 15, 2012 4:15 PM
To: 'Bausch, David (david.bausch@northwestern.com)'
Cc: Marc Schuldt; 'Marjorie McRae'; 'Susan Lutzenhiser (Susan@researchintoaction.com)'
Subject: NWE DSM evaluation weekly status report 6-15-2012

Dave:

Here are some highlights of recent accomplishments and our status:

1. We have recruited 155 hard to reach customers. There are 24 more to do, but we will not get them all.
2. As of today 216 on-site surveys are complete. We are still expecting to complete about 400 by the end of June, which is on track for on-sites being complete in mid-August.
3. A system was put in place for passing scheduled calls to the telephone lab (hard to reach customers) as on-sites are completed.
4. Final changes were made to the non-participant survey and the survey is now with the telephone lab.
5. Final plan for the savings persistence data collection was completed, scheduling on-sites will begin by the end of the month.
6. Hard to reach CFL metering sample has been recruited and scheduling for the sites will begin next week.
7. Work is underway at SBW and RIA to develop all data processing procedures needed estimate net and gross impacts. This will be a substantial effort over the next couple of months.

I have one issue that I need to talk with you about that relates to choice customers. I need a few days to work up the data so we can see it clearly. We have identified about 70 program tracking records where the customers seem to be choice but have received a measure for the choice fuel. These may all have good explanations, but I will probably need some help from NWE in understanding what is going on. Also, we have a significant number of measures that do not have account numbers and a larger number that do not match the account list that we got at the beginning of this year. There could be choice customers among them but we can't tell from the data we have. I will get this much better organized in a couple of days and give you a call.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, June 08, 2012 3:45 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 6-8-2012

Dave:

Progress continues. Here are some highlights:

1. We have recruited 98 hard to reach customers. There are 76 more to do, but we probably will not get them all.
2. Approximately 150 on-site surveys have been completed. We are expecting to have completed about 400 by the end of June.
3. Telephone lab is now finished with all of the work on the participant surveys, except for the scheduled calls that will result from SBW's recruitment of hard to reach customers. These will be finished as the on-site work is done over the next couple of months.
4. The non-participant sample and calling list have been created and that survey should start soon.
5. Substantial progress was made on detailed planning for the savings persistence data collection, and we expect the field work to start in the next couple of weeks.
6. 60 of the CFL metering sites are installed. We need to make more progress on the hard to reach customer recruitment before we can complete the last 15 sites.
7. We began work this week on developing the data processing systems for the impact and economic analysis needed for the final report.

At this point, I don't know of any issues that require discussion.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, June 01, 2012 3:33 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 6-1-2012

Dave:

Progress continues. Here are some highlights:

1. Our special team for recruiting participants in the hard to reach programs/strata has recruited about 50 customers. We won't get them all but it looks like this will work well enough.
2. Approximately 100 on-site surveys have been completed.
3. Participant telephone surveys continued for commercial and renewable programs.
4. We started selecting the non-participant sample and the calling list should be ready today or early next week.
5. Marjorie and I started figuring out the design of the final report.

At this point, I don't know of any issues that require discussion.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, May 25, 2012 2:46 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 5-25-2012

Dave:

We are making progress on a number of fronts. Here are some highlights:

1. A special team of SBW staff are now working on recruiting participants in the hard to reach programs/strata, with our new strategy involving residential customer incentives and prioritizing recruitment for on-sites, with participant surveys scheduled once we are on-site.. I should know a lot more about how well this is working by the end of next week.
2. We have completed more than 500 project file reviews (thanks for all the help in obtaining the source documentation)
3. CFL metering installations total more than 50, although we have slowed the pace, so that we can complete recruitment with the hard to reach strata in that program. They are a priority and we hope to finish installations in the next two weeks.
4. On-site surveys began this week for programs other than CFL and the rate at which the on-sites are scheduled is increasing now that we have a backlog of participant surveys completed.
5. Participant telephone surveys are underway for residential, commercial and renewable programs.
6. Trade ally survey instruments are nearing completion.

At this point, I don't know of any issues that require discussion.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, May 18, 2012 3:41 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM evaluation weekly status report 5-18-2012

Dave:

RIA is continuing the RES survey and is about 90% complete (there is an issue with the last 10% which I describe below). The NonRES survey has started and is about 20% complete. Development continues on the other surveys.

The SBW team completed installations on about 50% of the CFL metering sample this week. Work is underway to assign other types of recruited sites to our field staff.

RIA has worked with their telephone survey lab to increase response rates and the rate of agreement for site visits in all RES programs and sample strata. Unfortunately, some of the programs and some of the strata have very small total populations. We have concluded, that after a few more days of trying, the telephone lab will have reached the limit of what it can accomplish. I want to explore other strategies for reaching our quotas in these small population programs/strata. I will assign a member of our staff the job of reaching these customers and at a minimum obtaining permission for a site visit. If possible, we will also ask the critical impact questions regarding free-ridership, spillover and leakage. One thing that might help is to offer an incentive. I was thinking about offering $75 for agreeing to the site visit and another $25 if they agree to stay on the line and answer our other questions. This would be different than what the RIA lab offered to other customers (a chance to win $100). **Is it ok for us to offer something different to this difficult to reach but critical group of customers?** Incentives have been very helpful in getting the RES CFL metering sample to participate. They are getting an incentive, but of course are being asked to allow a special activity in their homes.

If the incentives for the small population programs/strata is completely successful, we would pay $100 to about 80 customers.

I am also concerned about this same issue arising for NonRES and Renewables. In those programs it is even more important that we complete with customers who are in the strata with small populations (i.e., the largest savers). We are exploring other approaches for these customers, which may involve calling them first to recruit for the on-site and then doing a scheduled telephone survey. Incentives may also be needed here but we need to do some more thinking about this one.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, May 04, 2012 1:01 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marc Schuldt; Marjorie McRae
Subject: NWE DSM Impact Evaluation - Weekly Status Report 5/4/2012

Dave:

Marjorie and her staff have been working closely with the survey lab to refine their strategies for reaching the quotas for each program and sample strata. We need to give them some more time before we will be able to tell whether there are any significant issues to discuss with you.

On-site training is starting in a few minutes. We should be able to roll into the field soon. Nothing to discuss on that front at this time.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

From: Mike Baker
Sent: Friday, April 20, 2012 2:00 PM
To: Bausch, David (david.bausch@northwestern.com)
Cc: Marjorie McRae; Marc Schuldt
Subject: NWE DSM Impact Evaluation - Weekly Status Report 4/20/2012

Dave:

I have conferred with Marc and Marjorie and at this time there are no issues that merit discussion. Project file reviews, participant surveys and other activities are underway as needed to complete the project in a timely fashion.

Michael Baker
Vice President
SBW Consulting, Inc.
2820 Northup Way, Suite 230
Bellevue, WA 98004
(425) 827-0330
mbaker@sbwconsulting.com

4. PERSONNEL LOCATION REPORTS

We completed site inspections between May and August of 2012. During the inspections, evaluation field staff visited the homes and businesses of NWE program participants to collect data on the status and performance of efficiency measures installed under NWE 2010 and 2011 efficiency programs. Since the inspections included direct contact with NWE customers, it was important that the NWE project managers were aware of the inspector locations in advance of the visits so that they would be prepared to receive calls from customers with questions about the study. Calls included verification of the legitimacy of the study and served as a backup number for the customer to use to report a schedule change or other issue of concern if they were unable to contact the site inspector directly. Although the inspectors wore NWE issued badges that identified them as a NWE representative, some customers needed additional confidence from a direct call to NWE. The site visit locations for the upcoming week were submitted to NWE project managers every Friday afternoon throughout the data collection period. Copies of the weekly site visit location spreadsheets are included in this appendix.

Table 21: Anticipated staff locations for the coming week (May 21, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton/Butte/Anaconda
Toby Benson	Helena/Butte/Anaconda
Roger Lippman	
Brian Bannister	
Robert Miller	
John McBride	
Chuck Bohmer	
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 22: Anticipated staff locations for the coming week (May 28, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton/Butte/Anaconda
Toby Benson	Helena

Person	Geographic Area
Roger Lippman	
Brian Bannister	Kalispell/Columbia Falls
Robert Miller	Butte/Anaconda
John McBride	
Chuck Bohmer	
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 23: Anticipated staff locations for the coming week (June 4, 2012)

Person	Geographic Area
Jerry Johnson	Butte/Bozeman (irrigation sites)
Toby Benson	Helena
Roger Lippman	
Brian Bannister	Kalispell/Columbia Falls
Robert Miller	
John McBride	
Chuck Bohmer	
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 24: Anticipated staff locations for the coming week (June 11, 2012)

Person	Geographic Area
Jerry Johnson	Butte/Bozeman (rural irrigation sites)
Toby Benson	Helena
Roger Lippman	Kalispell/Columbia Falls/Missoula
Robert Miller	Butte/Dillon/Anaconda
John McBride	
Chuck Bohmer	
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 25: Anticipated staff locations for the coming week (June 18, 2012)

Person	Geographic Area
Jerry Johnson	Butte/Bozeman (rural irrigation sites) & Hamilton/Msla Renewables
Toby Benson	Billings/Columbus (Eastern MT)
Roger Lippman	
Robert Miller	Butte/Dillon/Anaconda
John McBride	
Chuck Bohmer	
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 26: Anticipated staff locations for the coming week (June 25, 2012)

Person	Geographic Area
Jerry Johnson	Butte/Bozeman (rural irrigation sites)
Toby Benson	Helena
Roger Lippman	
Robert Miller	Butte/Dillon/Anaconda
John McBride	
Chuck Bohmer	
Ray Schott	Helena/Great Falls
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 27: Anticipated staff locations for the coming week (July 2, 2012)

Person	Geographic Area
Jerry Johnson	Deer Lodge, Helena, White Sulphur (rural irrigation sites)
Toby Benson	Helena
Roger Lippman	
Robert Miller	Butte/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Helena/Great Falls/Dillon
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 28: Anticipated staff locations for the coming week (July 9, 2012)

Person	Geographic Area
Jerry Johnson	Laurel
Toby Benson	Helena/Kalispell
Roger Lippman	
Robert Miller	Butte/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Helena/Butte/Kalispell
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 29: Anticipated staff locations for the coming week (July 16, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton
Toby Benson	Helena/Bozeman
Roger Lippman	
Robert Miller	Butte/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Drummond/Kalispell
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	

Person	Geographic Area
Roger van Gelder	
Michael Laurie	

Table 30: Anticipated staff locations for the coming week (July 23, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton
Toby Benson	Helena/Bozeman
Roger Lippman	
Robert Miller	Butte/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Great Falls/Bozeman
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 31: Anticipated staff locations for the coming week (July 30, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton
Toby Benson	Helena/Bozeman
Roger Lippman	
Robert Miller	Butte/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Great Falls/Bozeman
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	

Person	Geographic Area
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 32: Anticipated staff locations for the coming week (Aug 6, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Manhattan
Toby Benson	Helena/Bozeman
Roger Lippman	
Robert Miller	Butte/Anaconda/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Lewistown/Helena
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 33: Anticipated staff locations for the coming week (Aug 13, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Victor/Manhattan
Toby Benson	Helena
Roger Lippman	
Robert Miller	Butte/Anaconda/Dillon
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Helena
Wayne Connell	
Randy Birk	

Person	Geographic Area
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 34: Anticipated staff locations for the coming week (Aug 20, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Victor/Manhattan
Toby Benson	Helena
Roger Lippman	Belgrade/Bozeman/Manhattan/Red Lodge/Billings
Robert Miller	Butte
John McBride	
Chuck Bohmer	
Ray Schott	Butte/Helena/Drummond/Missoula
Wayne Connell	
Randy Birk	
Katherine Clarke	
Mary Hamann	
Patricia Goudge	
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

Table 35: Anticipated staff locations for the coming week (Aug 27, 2012)

Person	Geographic Area
Jerry Johnson	Missoula/Hamilton
Toby Benson	Helena
Roger Lippman	
Robert Miller	Butte/Anaconda
John McBride	
Chuck Bohmer	

Person	Geographic Area
Ray Schott	Butte/Helena/Drummond
Wayne Connell	Great Falls/Havre
Randy Birk	
Kathrine Clarke	Helena/Bozeman/Billings
Mary Hamann	
Patricia Goudge	Great Falls/Helena
Bob Tingleff	
Dan Bertini	
Tim Newcomb	
Roger van Gelder	
Michael Laurie	

5. EVALUATION PLAN

NORTHWESTERN ENERGY
DEMAND SIDE MANAGEMENT PROGRAM
EVALUATION PLAN

Submitted to
NORTHWESTERN ENERGY
40 E. Broadway
Butte, MT 59701

Submitted by
SBW CONSULTING, INC.
2820 Northup Way, Suite 230
Bellevue, WA 98004

In association with
RESEARCH INTO ACTION, INC.
NEW HORIZON TECHNOLOGIES ENERGY SYSTEMS
RIDGE & ASSOCIATES

March 16, 2012

sbw
ENERGY · WATER · EFFICIENCY

TABLE OF CONTENTS

1. Introduction

This plan describes how the team lead by SBW Consulting, Inc. (SBW) will conduct a process and impact evaluation for the portfolio of efficiency and renewable energy programs operated by NorthWestern Energy (NWE) during the period July 1 2006 through December 31, 2011. SBW's team includes staff from three subcontractors: Research Into Action, Inc., Ridge and Associates, and New Horizons Technology – Energy Services. Throughout the balance of this document, the team comprising SBW and its contractors is referred to as "we" or "the contractor".

2. Definition of Key Terms

- DSM - Demand Side Management. Describes NWE Montana's entire programmatic efforts for energy efficiency and renewable energy, as well as the subset of energy efficiency programs funded by DSM funds as designated by the Public Service Commission.
- Choice Customers. In NWE's Montana service territory, legislation was enacted in the late 1990s to allow customers to make arrangements for energy supply in competitive markets. Customers who have moved to competitive supply are choice customers. NWE Montana provides its Choice Customers with transmission and distribution services only.
- Custom Measures. Measures implemented under NWE efficiency programs that are assigned customized, measure-specific incentives and savings estimates.
- Desk Top Review. An analysis of savings that includes engineering review of program documentation but does not involve on-site inspection or metering.
- E+ Program Contractors. Entities selected by and contracted with NWE Montana customers to install energy efficiency and renewable projects through the E+ Programs.
- E+ Programs. DSM programs marketed as Efficiency Plus programs includes offerings for all classes of electric and natural gas customers in the NWE Montana service territory.
- Firmographic. A term coined to describe for the nonresidential sector a concept analogous to the adjective "demographic" for the residential sector. Firmographic data describe the characteristics of the firms in the population or sample.
- Free Rider. Someone who would install an energy efficiency measure without any program incentives because of its benefits, but is able to receive a financial incentive or rebate anyway
- Free Ridership Estimate. An estimate of the proportion of savings generated by free riders.
- Gross Savings. Annual energy savings determined either by NWE or this evaluation. Gross savings do not account for free-ridership, leakage or spillover. These other factors are included in estimating net savings.

- Implementation Contractors. Entities selected by and contracted with NWE Montana to implement the E+ Programs, including providing products and services to NWE Montana customers.
- Indirect Measures. Non-rebated measures implemented during the program years being evaluated as a result of audits, education and training activities funded by NEW efficiency programs.
- Install Date. Date that the implementation of a program measure or project was completed by the customer or project implementer.
- Leakage. Movement of rebated or directly installed efficiency measures out of NWE Montana's service territory.
- NEEA - Northwest Energy Efficiency Alliance. NEEA works in collaboration with its funders and other strategic market partners to accelerate the innovation and adoption of energy-efficient products, services, and practices.
- Net Savings. Gross savings adjusted for free ridership, leakage, and spillover.
- Net to Gross Ratio. The ratio of net savings to gross savings.
- Participant. Customer who receives information, education, training, services, or incentives through the NWE efficiency programs.
- Performance Contractors. Entities selected by and contracted with NWE Montana to provide products and services to NWE Montana customers under the E+ Business partners program programs. These contractors are reimbursed based on energy savings generated by the projects customers undertake.
- Preferred Contractors. Insulation and equipment contractors approved by NWE Montana for higher incentives through the E+ Residential Electric Savings and E+ Residential Existing Gas Rebates programs.
- Prescriptive Measures. Measures implemented under NWE efficiency programs that are assigned unitized incentives and unitized (or very simplified) energy savings.
- Program Staff. The employees of NWE Montana that design, manage, and implement the E+ and other efficiency programs.
- Program. Includes both electric and natural gas energy conservation and renewable programs within the NWE Montana service territory for both residential and non-residential customer segments.
- Realization Rate. A decimal fraction that is computed by dividing the evaluation savings estimate by NWE's savings estimate for a sampled measure or project.
- Rebate Date. Date that NWE paid the program incentive to the customer or implementer.
- RTF - Regional Technical Forum. An advisory committee established in 1999 to develop standards to verify and evaluate conservation savings. Its voting members are appointed by the Northwest Power and Conservation Council.

- Spillover. Any non-rebated measure implemented during the program cycle being evaluated that the customer attributes to program participation (including audits, education and training) but that was not specifically recommended by NWE.
- UES - Unit Energy Savings. The energy savings estimate applied to each unit of a given energy efficiency measure (such as a 13 watt CFL in residential use).
- USB - Universal System Benefits. A funding source for NWE Montana's energy efficiency and renewable programs that provide benefits to the broad public through such activities as research and development, low income energy efficiency, and energy efficiency measures for government facilities.

3. RESEARCH OBJECTIVES

This plan describes how we will accomplish the research objectives of the NWE evaluation. The research objectives for the impact portion of the evaluation are as follows:

- Estimate gas and electric gross savings, by program, for program years 2006-07 thru 2010-11 and calendar years 2007-2011.
- Estimate net savings, accounting for free-ridership, spillover and leakage.
- Collect data on measure persistence to inform the estimation of measure life.
- Determine the impact of estimating savings for each program or calendar year based on measure installation date rather than measure payment date.

The following sources of information will be used to address these objectives:

- NWE's project files (documentation of measure installation and inspection).
- Program tracking databases and maintained by program staff and implementation contractors.
- On-site inspections of measure installation and operation, including in some cases collection of trend logs from special metering of customer control system.
- NWE unit energy savings estimates and associated documentation.
- NWE Testimony and Exhibits related to in all relevant USB and electric/natural gas tracker dockets.
- Applicable impact evaluation studies conducted by the Northwest Energy Efficiency Alliance (NEEA) and others.
- Telephone surveys with program participants and trade allies.
- NWE DSM potential assessments and end use surveys.

The research objectives for the process portion of the evaluation are shown in Table 1. The table shows the primary process evaluation objectives and the sources of information the contractor will use to

address each objective. An "S" in a cell indicates the source will provide secondary or supporting information.

Table 1: Information Sources to Be Used to Meet Process Evaluation Objectives

Objective—To Assess:	Information Sources				
		Interviews	Surveys		
	Program Documents	Program Staff	Participating Customers	Participating Trade Allies	Nonparticipating Customers
Appropriateness of design and participation procedures	Descriptions; design docs; process descriptions; flow charts; application forms	✓	✓	✓	✓
Appropriateness of application and payment processing activities (e.g., ease of use, cycle time)		✓	✓	✓	
Accuracy, consistency, completeness of program records	Participant program records				
Barriers to participation		✓	✓	S	✓
Effectiveness of incentives in motivating action	Incentives rationale (e.g. % buy down)	S	✓	✓	✓
Effectiveness of marketing and promotional efforts	Marketing materials	✓	✓	✓	✓
Participant satisfaction with programs		S	✓	✓	
Opportunities for process improvement		✓	✓	✓	S
Effectiveness of internal communication		✓	S	S	
Comparison to best practices	All documents	✓			
Obtain data for assessment of free riders, spillover and leakage			✓	✓	✓
Obtain data for assessment of savings persistence			✓		

The research objective for the economic analysis portion of this evaluation is:

- Estimate benefits, costs and cost-effectiveness of each Program by calendar and program year.

The following sources of information will be used to address this objective:

- NWE life cycle costing inputs, including program costs, avoided energy costs, discount rates, inflation rates and other economic parameters.

- Results from the impact evaluation.

4. SAMPLE DESIGN

We will collect data from samples of program staff (both NWE employees and their implementation contractors), program participants, nonparticipants, and trade allies (firms that participate in the delivery of efficiency measures, e.g., retail chains that sell CFLs).

Table 2 and Table 3 summarize the sample design for all types of primary data collection that will be completed as part of this evaluation. The tables are organized by program delivery method and program name. In each table, the first set of columns after the program name describes the sample design we will use. As shown, some of the samples are simple random design and others are stratified, either by fuel type or size (NWE's estimate of savings). For those samples that are stratified by size, some use a single fuel (kWh or dKt) while others use MMBtu because the program claims both gas and electric savings. Also shown for each program's design is the sampling unit. See 4.2.1 for a further discussion of sampling units.

The tables show the size of the participant population for 2007-11, and separately for 2007-09 and 2010-11). These columns are under the heading Population (SPT). SPT refers to the Standardized Program Tracking database that we have developed to support the analysis and selection of the sample. The tables also show the size of the samples we expect to complete for each type of data collection. For each type of sample, the column heading indicates the calendar period that the sample will represent. The file review, site visit and participant end user samples are all designed to achieve 90/10 confidence and precision for individual programs.

NWE Evaluation Plan

Table 2 Overall Sampling Plan (Part 1)

	Sample Design				Population (from SPT)			Impact				Process			
Delivery Method/ Study Domain	2006-09 Sample Type	2010-11 Sample Type	Size Parameter	Sampling Unit	2007-2011	2007-2009	2010-2011	File Review (All Years)	Site Visit (2010-11)	Persistence (2007-08)	Metering (2010-11)	Participating End Users (2010-11)	Participating Trade Allies (2010-11)	Nonparticipating End Users (All
Audit														
E+ Building Blocks Pilot Program	None	Simple Random	MMBtu	Audit	29	-	29	20	20	-	-	24		
E+ Energy Audit for the Home or Business														
E+ Audit for the Home (Electric and Gas)	Stratified by Fuel	Stratified by Fuel		Audit	17,804	11,156	6,648	120	60	8	-	72		
E+ Energy Usage Survey (Electric)	Stratified by Size	Simple Random	kWh	Audit	13,950	11,481	2,469	92	65	-	-	78		
E+ Energy Appraisal for Small Businesses (Electric)	Stratified by Size	Stratified by Size	MMBtu	Audit	1,386	886	500	56	27	8	-	56		
Mass Distribution / Lighting Programs														
CFL Upstream Buy-Down	None	None										All		All
Rebate and Direct Install														
Existing Nonresidential														67
E+ Commercial Lighting Rebate Program	Stratified by Size	Stratified by Size	kWh	Measure Type	2,668	1,203	1,465	46	26	8	3	62		
E+ Commercial Existing Electric Savings Program	None	Stratified by Size	kWh	Measure Type	117	-	117	21	21	-	-	41		
E+ Commercial Natural Gas Savings Program (Existing)	Stratified by Size	Stratified by Size	dKt	Measure Type	435	81	354	39	23	8	-	55		
Vending Miser	Stratified by Size	Census	kWh	Measure Type	42	21	21	34	21	3	-	21		
E+ Electric Motor Rebate Program	Census	Census	kWh	Measure Type	36	10	26	36	26	5	-	26		
Commercial CFL Direct Install	Stratified by Size	Stratified by Size	kWh	Measure Type	511	370	141	50	34	8	-	44		
New Nonresidential														12
E+ Commercial New Construction Electric Savings Program	None	Census	kWh	Measure Type	19	-	19	19	19	-	-	19		
E+ Commercial Natural Gas Savings Program (New Construction)	Census	Stratified by Size	dKt	Measure Type	36	4	32	15	11	-	-	21		
Existing Residential														67
E+ Residential Electric Savings Program	Stratified by Size	Stratified by Size	kWh	Measure Type	247	129	118	42	26	8	-	41		
E+ Residential Existing Gas Savings Program														
E+ Residential Existing Gas Rebates	Stratified by Size	Stratified by Size	dKt	Measure Type	17,025	7,650	9,375	72	47	8	-	66		
E+ Residential Existing Gas Free Kits	Stratified by Size	Stratified by Size	dKt	Measure Type	80,014	64,388	25,626	-	40	8	-	66		
E+ Free Weatherization Program & Fuel Switch	Stratified by Size	Stratified by Size	MMBtu	Site	3,804	2,430	1,374	86	-	-	-	-		
DEQ Appliance Rebate Program	None	None						-	-	-	-	-		
Low Income Appliance Replacement	None	Simple Random	kWh	Measure Type	189	-	189	49	-	-	-	-		
Residential CFL Direct Install	Stratified by Size	Stratified by Size	kWh	Measure Type	8,520	5,765	2,755	85	38	8	22	64		
Residential CFL Owner Install	Stratified by Size	Stratified by Size	kWh	Measure Type	110,513	71,488	39,025	181	90	8	55	103		
New Residential														30
E+ Residential New Construction Program (Electric)	None	census	kWh	Measure Type	9	-	9	9	9	-	-	9		
E+ Residential New Construction Rebate Program (Gas)	Simple Random	Stratified by Size	MMBtu	Measure Type	185	31	154	50	29	-	-	44		
E+ New Homes Program (Legacy Electric)	Stratified by Size	Stratified by Size	kWh	Measure Type	196	39	157	38	22	8	-	32		

Table 3 Overall Sampling Plan (Part 2)

	Sample Design				Population (from SPT)			Impact				Process		
Delivery Method/ Study Domain	2006-09 Sample Type	2010-11 Sample Type	Size Parameter	Sampling Unit	2007-2011	2007-2009	2010-2011	File Review (All Years)	Site Visit (2010-11)	Persistence (2007-08)	Metering (2010-11)	Participating End Users (2010-11)	Participanting Trade Allies (2010-11)	Nonparticipanting End Users (All
Custom Incentives														
E+ Business Partners Program	Stratified by Size	Stratified by Size	MMBtu	Project	122	66	56	34	15	8	7	30		67
E+ Irrigation	Census	Stratified by Size	kWh	Project	37	18	19	32	14	5	-	16		30
Renewable Energy														
E+ Renewable Energy Program - Residential	Stratified by Size	Stratified by Size	kWh	Measure Type	394	246	148	30	14	8	-	45		
E+ Renewable Energy Program - Non-Residential	Stratified by Size	Stratified by Size	kWh	Measure Type	122	81	41	32	16	8	-	24		
Training														
Building Operator Certification Program	None	Simple Random	MMBtu	Attendee	214	136	78	-	-	-	-	43		
Motor Management Training	None	None												
Northwest Energy Efficiency Alliance (NEEA)														
Various NEEA Initiatives	None	None												
Total Sample					**268,624**	**177,679**	**90,945**	**1,288**	**713**	**125**	**87**	**1,102**	**223**	**273**

4.1. Program Staff

Table 4 provides our sampling plan for our in-depth interviews with NWE program staff and implementation and program contractors. The length of the interview will reflect the responsibilities of each contact. Interviews with contacts involved in the delivery of multiple programs will take two or more hours each; interviews with the other individuals will range from one-half to one hour in length. We will also interview NEEA evaluation staff as needed to understand their program evaluation research and findings. We will conduct up to 40 interviews totaling up to 60 hours. We will reallocate sample from one group to another as necessary to best capture key staff.

Table 4: Program Staff Sample

Program Staff	Maximum Sample
Corporate DSM Staff	6
Other NWE Staff (e.g., Communications, Division Offices)	10
DSM Implementation and Program Contractor Staff	15
DEQ and Low Income Programs Contacts (at state and local level)	7*
NEEA Evaluation Staff	2
Total	40

* One DEQ, one DPHHS, four HRDCs, one discretionary.

4.2. Participating End Users

A multi-stage sample design will be used to represent program participants. In the first stage of sampling we will select participants from a consolidated five-year database of program tracking records. The first-stage sample will be selected in two segments. The first segment will represent participation during 2007-2009 and the second segment will represent 2010-11.

4.2.1. Participant Sampling Units

Prior to sampling, the program tracking data (for each program) will be summarized by sampling unit. Three sampling units will be used: audit, project and measure type.

- **Audit**. This sampling unit will be used for programs that deliver audits (E+ Audit for the Home-on-site, E+ Energy Appraisal for Small Businesses, and? E+ Energy Usage Survey-mail-out Audit). Each unit comprises all recommendations and direct measure installation work (except direct installation of CFLs and E+ Residential Existing Gas Free Kits, both of which are separately sampled using the measure type sampling unit defined below) associated with an audit of a customer's premise.
- **Project**. This sampling unit will be used for programs that deliver customized energy efficiency improvements. A project is single phase of improvements at a customer's premise.

- **Measure Type**. This sampling unit is used for the balance of the programs, which provide standardized efficiency improvements, i.e., measures. Programs may deliver a single type of measure, e.g., Vending Miser or they may deliver many different types of measures, e.g., E+ Commercial Existing Electric Savings Program. All measures will be combined by type, e.g., thermostats or motors within a phase of work at a customer premise to define the measure type sampling unit. By sampling measure type units we increase the reliability of both the engineering data collection during the site visits and the decision-making related data collection (free-ridership, spillover and leakage) via the participant telephone surveys.
- **Attendee**. Attendee means a person who attended the Building Operator Certification training. This sampling unit is used in collecting data to support the process evaluation of that program.

Some programs deliver electric and gas savings, referred to as dual-fuel programs. For dual-fuel programs the NWE's estimate of savings from both fuels will be combined for each sampling unit and expressed in units of MMBtu. This combined savings will be used in implementing, where appropriate, as size stratified sample design.

Program tracking data will also be matched to NWE customer account data. Based on this matching we will determine which fuels (electric and gas) are purchased by the customer associated with each sampling unit and whether that customer purchases either or both fuels as a Choice customer. This information will be used in both impact and process evaluation tasks.

4.2.2. Stratified Designs

As shown in Table 2 sample design varies across program. Some programs are represented by a simple random sample. These are programs where the variance in the NWE savings claim is small across the sample units. When variance in the claim is small there is little advantage gained by using a stratified design. Other programs have large variance in savings claim. For these we use a size stratified design, which reduces the sample requirement for achieving the target sampling confidence and precision. For residential audits we stratify by fuel type to account for differences in claimed savings and to support the process evaluation.

We will define "certainty" strata for each of the stratified designs. These will contain a small number of cases that have very large savings. We will make special efforts to complete data collections for all of these cases as that will substantially improve the confidence and precision of our savings estimates. In all other strata, we will oversample so that some cases can be eliminated if the customer refuses to cooperate or there are insurmountable obstacles to completing data collection. This oversampling will allow us to still achieve the sample quota for each stratum.

4.2.3. 2007-09 Participant Sample

A first-stage sample and one nested subsample (see below) will be drawn to represent 2007-09 participants for all programs that have program tracking records from those years and for which NWE

has or can access individual customer project files (excluding CFL Upstream Buy-Down, DEQ Appliance Rebate Program, various training programs, and NEEA initiatives)

- **First-Stage Sample - File review.** A file review will be completed for the first stage sample. These reviews will support both process and impact analyses.
- **Nested Subsample - Persistence.** A subsample will be drawn to represent participants in selected programs from 2007-2008. This subsample will be allocated to programs whose measures have highly uncertain measure life. The oldest records will be sampled to maximize the chance of observing measure failures.

4.2.4. 2010-11 Participant Sample

A first stage sample and three nested subsample will be drawn to represent 2010-11 and provide data for both the impact and process evaluations.

- **First-Stage Sample – Telephone Survey.** A telephone survey will be completed with participant decision-makers to gather data needed to compute net savings, support the process evaluation and recruit participants for site visits. For audit participants, the survey will also identify participants who received direct installation measures (other than CFL and E+ Residential Existing Gas Free Kits) or implemented an audit recommendation without receiving an incentive from NWE. Data will be collected for all types of recommendations including those that involve behavioral changes. For nonresidential participants there will be a second step to the survey process. This second step will be a brief discussion with the person responsible for buying light bulbs for the business to determine whether they have purchased discounted bulbs from retailers participating in the CFL Upstream Buy-Down program. This will be critical information used in estimating the fraction of the buy-down bulbs that are being purchased by non-residential customers.
- **Nested Subsample – Site Visit.** The first stage telephone survey identifies the participants who are eligible for and willing to participate in a site visit. These are the subsample that receive site visit by a member of our impact evaluation team. File reviews will be completed for this sample prior to re-contacting the customer to schedule the site visit.
- **Nested Subsample – CFL Operating Hours.** A subsample will be drawn from the residential direct and owner installed CFL site visits. Loggers will be installed to measure operating hours for a random selection of CFLs found in each of these sites. This subsample is designed to achieve 90/10 precision in estimating the overall average hours of operation for all types of CFL bulbs.
- **Nested Subsample – Other Metering.** This subsample will be intentionally selected from the site visits for E+ Business Partners Program and E+ Commercial Lighting Rebate Program. The sample will be allocated to those cases where we can most reduce measurement error by installing data loggers or obtaining trend logs from customer control systems.

In addition, we will conduct surveys with a sample of participants in the Building Operator Certification training program to support the process evaluation.

4.3. Participating Trade Allies

The trade allies will be identified in the program tracking data and then classified by type. For example, trade allies cited in the program tracking data that are home builders or provide irrigation system improvements. Simple random samples will be drawn that are representative of each type. Data will be collected from them via a telephone survey to support the impact and process evaluation. The expected sample size by type is shown in Table 5. We will reallocate sample from one group to another as necessary to best reflect the population sizes of the trade ally groups.

Table 5 Sampling Plan for Participating Trade Allies

Trade Ally Type	Trade Ally Sample Size (Maximum)
Residential Home Builders	15
Residential Insulation/Audit	30
Residential Heating & Cooling and Other	30
CFL Coupon Retailers*	40
CFL Buy-down Retailers*	20
Commercial Lighting	40
Commercial Motors**	12
Commercial Heating & Cooling and Other	20
Irrigation Trade Allies	6
Renewable Energy Systems	10
Total	223

*CFL coupon and buy-down retailers comprise overlapping populations. A single survey will target both groups using skip patterns. Total completes may be fewer than 60 (= 40 + 20).

**Includes motor dealers and green motor rewind shops.

4.4. Nonparticipants

Samples will be drawn to represent both end users and trade allies that have not participated in the NWE program during the period 2007-11. The expected sample sizes by type of nonparticipant are shown in Table 6. (Sample sizes may be reduced to reflect smaller-than-anticipated population sizes.)

Table 6: Sample Size by Type of Nonparticipant

Nonparticipants	Sample Size
End Users	
Existing Residential	67
Existing Nonresidential	

Nonparticipants	Sample Size
Irrigation	30
Other Small	67
Other Large	67
Trade Alllies	
New Residential	
Home builders	30
New Nonresidential	
Developers	12
Total	273

4.4.1. Nonparticipating End Users

Nonparticipating end users will be identified by matching the program tracking data with a current snap shot of NWE customer accounts. Records will be matched on account number, using all account numbers that appear in the five year consolidated program tracking database. Those that do not match will be classified as nonparticipants. Nonparticipants will be further classified into types of nonparticipants based on their billing rate schedule as shown in Table 6. These samples of nonparticipating end users will be used to characterize the markets which are the targets for NWE's existing building programs.

Data will be gathered from these samples via telephone survey which will support both the impact and process evaluation. The telephone survey for the nonresidential sample will be carried out in two steps. The goal of the initial contact will be to interview a decision-maker who could represent the business's attitudes relevant to NWE program participation. The second step in the survey will be a brief discussion with the person responsible for buying light bulbs for the business to determine whether they have purchased discounted bulbs from retailers participating in the CFL Upstream Buy-Down program. This will be critical information used in estimating the fraction of the buy-down bulbs that are being purchased by non-residential customers.

4.4.2. Nonparticipating Trade Allies

As shown in Table 6, we will also complete telephone surveys with nonparticipant trade allies. This is necessary to characterize the markets that are served by NWE's new construction programs. One sample will represent nonparticipating residential home builders. The second sample will represent nonresidential owners and building developers. We will first seek from NWE any such listings of these groups that it has, such as developed in support of its new construction program marketing. In the absence of NWE-provided lists, we will purchase listings of home builders and nonresidential building developers and owners of new buildings from sources such as InfoUSA and McGraw Hill Dodge.

5. Impact Evaluation

This section describes the methods by which we will estimate savings for each type of NWE program. It address both gross and net savings and the methods by which these are determined for samples that represent each program and how these sample results are used in estimating program and portfolio level savings.

5.1. Review of Unit Energy Savings Measures

NWE will provide all program materials relevant to the methods used within the utility to establish the unit energy savings (UES) values for the prescriptive measure savings claim. SBW will review these materials for up to 100 prescriptive measures (referred as priority measures) that are significant contributors to the savings claim to gain a thorough understanding of the basis for the values used. After reviewing all relevant program materials, SBW will have a series of meetings with NWE program staff to discuss the unit energy savings values in more depth and finalize the scope of the review effort.

Contractor will examine relevant information from prior NWE studies, Regional Technical Forum (RTF), Northwest Energy Efficiency Alliance (NEEA) as appropriate, ENERGY STAR, and California Energy Commission Database for Energy Efficient Resources (DEER) for each of these measures. This will be supplemented by a web search for other relevant studies that have addressed these measures. Emphasis will be placed on locating studies that were performed in the Pacific Northwest. Unit energy savings values (kWh, kW or therms) that are found for each measure will be compared and contrasted. They will also be critiqued for their relevance to conditions that exist at NWE. SBW will formulate a written recommendation with all supporting documentation to NWE for the most appropriate unit savings value, based upon the best available information. In some cases the basis for the recommendation will be an analysis of data collected during the site visits for participating end user samples. These recommendations will be submitted to the NWE project manager for review and comment.

5.2. Project File Review

The first step in the impact evaluation procedure is to determine whether the detailed documentation (referred to as project files) is consistent with program tracking records. This comparison will be carried out for all programs for which NWE maintains or can provide access to samples of project files. File reviews will be completed for entire samples drawn to represent 2007-09 participation. File review will only be completed for the site visit subsample of the 2010-11 samples.

As part of the file review all sampled measures will be corrected for data entry errors. In addition, quantity of installed units, classification of units and assigned unit energy savings will be reviewed for consistency with the program tracking database and potentially modified. A corrected estimate of savings will be developed for all file review measures. Reasons for differences with the program

tracking savings will be recorded. This analysis will be the basis for a file review savings realization rate. This rate will subsequently be modified by the application of results from the first-year site visit samples.

As part of the file review we will also assemble data on the date of measure installation and the date rebates are paid. If the file review does not provide the installation date information for the 2010-11 site visit subsample, we will obtain the best available estimate during the site visit process or by calling the vendor responsible for the work.

5.3. Estimation of Annual Gross Savings

For most programs, we will estimate annual gross savings based on the results of site visit and subsequent engineering analysis. This includes energy (therm) savings for gas measures and energy (kWh) and average demand savings (kW) for electric measures. For some programs, the savings estimates will be based on a critical review of prior evaluation work. Throughout, the results of the unit energy savings review will be applied where appropriate. The following sections describe the specific methods that we will use for each type of program in the NWE portfolio.

5.3.1. Audit Programs

Direct and indirect savings will be investigated for NWE's audit programs. Direct savings are those associated with the measures installed during the audit. Indirect savings are associated with customer actions and/or measures installed by the customer based on audit recommendations but for which the customer did not receive an incentive through any other NWE program, regardless of whether or not an incentive was available. Methods used to evaluate savings for the measures installed during the on-site audits will be similar to those used to evaluate other prescriptive programs. The telephone survey of 2010-11 participants will determine which of the audit participants received direct installation measures (other than CFLs) or implemented audit recommendations without incentives. Site visits will be conducted for those homes or businesses to gather the data needed to estimate savings.

SBW will review the savings calculation methods used by NWE to estimate the reported savings. For measures where the NWE methods are determined to be reasonable, contractor will recalculate savings using the as-built conditions observed during the site visit. For measures where the NWE method is not adequate, energy (kWh or therms) and demand (kW) savings will be recalculated using more appropriate engineering techniques and SBW will fully support and document such cases. Realization rates will be calculated for all audit measures that were verified to be installed and operational during the site visit. To the extent possible, reasons for differences between the evaluated and reported savings will be documented.

5.3.2. CFL Upstream Buy-Down Program

It is beyond the scope of this evaluation to directly trace, inspect and measure the installation and operation of CFLs purchased through the CFL Upstream Buy-Down program (referred to as mass

distribution). To estimate savings from this program it will be necessary to draw on results from a number of other elements of the evaluation work.

- **Proportion Nonresidential.** A critical factor in this evaluation is the fraction of CFL Upstream Buy-Down bulbs that are purchased and installed by nonresidential customers. The number of operating hours for such bulbs is typically much greater than observed for residential customers, thus the savings for buy-down program is very sensitive to the assumed split between residential and non-residential applications of the bulbs. It is not possible to directly determine the disposition of each buy-down bulb. Therefore indirect indicators must be used. These will be gathered by telephone surveys with participating end users, nonparticipating end users and a participating trade ally group (CFL Buy-Down Retailers). The end users will be asked how many discounted bulbs they purchased from participating retailers. The retailers will be asked to estimate what fraction of the buy-down bulbs were purchases by the non-residential customers. These responses will be analyzed and we will estimate the proportion of bulbs that went to nonresidential applications.
- **Installation Rate.** We will conduct site visits for samples of residential (4.3.4) and nonresidential (4.3.3) CFL installations. During these site visits we will compare the number of bulbs purchased to those installed and in storage. Analysis of these data will yield the installation rate for both residential and nonresidential applications.
- **Hours of Operation.** The metering subsample of residential CFL installations will provide the data needed to estimate average residential hours of operation. The site visit data collection for nonresidential direct install CFLs will provide the average nonresidential hours of operation.

The data above will be combined with program tracking data on bulb counts by bulb wattage to compute energy and demand savings for this program.

5.3.3. Rebate and Direct Install Programs

NWE will provide project files for all sampled prescriptive projects where project files are available. Contractor will review the files to gain a thorough understanding of the measures that were installed. Site visits will be performed on the sampled sites to verify measures installed under the program. The site visit will include confirmation that the program measures were installed, are operational and producing energy savings. Data will be collected as necessary to support a re-estimation of energy (kWh and therms) and demand savings. In most cases this will include a verification of the installed counts for each prescriptive measure. For some sampled cases this will include one-time and/or short term measurements of parameters relevant to the energy performance of the installed measures. In these cases the data collected during the site visit will be analyzed and incorporated into an estimation of the revised unit energy savings value discussed above. Evaluation energy savings (kWh or therms) will be calculated by multiplying the final unit energy savings value by the count observed during the site visit. For electric measures average demand savings will also be calculated using a similar method. Realization rates (kWh and therms) will be calculated for all measures as the ratio of evaluated savings to reported

savings. To the extent possible, reasons for differences between the evaluated and reported savings will be documented.

5.3.4. Residential CFL Programs

Energy and demand savings will be estimated based on data from the site visit sample and the sub-sample that is metered. During the site visit we will attempt to determine when and from where the CFLs in the home were obtained (direct install, mail-in, mail-out, events or in-store coupons, buy-down or other), and the number and type of CFLs in storage. For a sub-sample we will obtain information on the hours of operation.

At each dwelling in the metered sub-sample, the field surveyor will assess lighting throughout the house, and determine which lighting fixtures and lamps contain CFLs. The surveyor will prepare a simple sketch showing floor layouts, indicating rooms containing fixtures and lamps with CFLs, and defining fixture groups controlled by a single switch or device. The surveyor will then apply a predetermined sampling scheme to select up to three CFL fixture groups to monitor. The sampling scheme will consist of a randomly-generated start number and a sampling interval proportional to the number of fixture groups, so that each dwelling will have no more than three metered CFL fixture groups. We plan to use Dent light logger (with light tubes), each of which will be affixed securely to the fixture or lamp it is monitoring, in a way that is unobtrusive and does not mar customer property. If necessary, the surveyor will install a fiber optics extension tube to ensure that stray ambient light does not result in erroneous logger readings. After 3 months, a surveyor will go back to the dwelling to retrieve loggers.

We will perform the CFL logger installation on a separate routing through NWE service territory to minimize the time between installation of the first and last loggers. This will also allow us to maximize the length of time the loggers are recording.

5.3.5. Low Income Programs

Contractor will perform a desk top review (i.e., no site visits) for a sample of E+ Free Weatherization and Fuel Switch and Low Income Appliance installations. The contractor will also review available and relevant prior evaluations for similar low-income programs, including evaluations currently available through the Montana Department of Public Health and Human Services (MDPHHS), to derive unit energy (kWh or therms) and demand savings which are appropriate to this participant population and consistent with NWE customer characteristics. These unit energy savings will be applied to the measures investigated in the desktop review to derive program savings.

5.3.6. DEQ Appliance Rebate Program

It is not possible to obtain project files for this program. The program has provided a detailed workbook that lists each appliance installed and also provides the expected unit energy savings. Unit energy

savings will be reviewed as described in 5.1 and applied as appropriate to estimate energy (kWh or therms) and demand savings from this program.

5.3.7. Custom Incentives Programs

NWE will provide project files for all sampled custom projects. This will include all supporting calculations in electronic format (including PDF of document scans). Contractor will review the descriptions for the installed measures and critique the engineering methods used by the third party consultants to prepare the custom calculations of energy savings. In cases where these engineering methods are not found to be reasonable, contractor will develop a more appropriate approach to estimating energy savings using standard engineering methods and will support (document) and defend its choice of any alternate methods. Contractor will review the appropriateness and application of simulation models by the consultants and provide recommendations concerning ways that the simulation modeling could be improved and will support (document) and defend its suggested improvements. For custom measures the contractor's method will consider interactive effects between end uses within a measure and across measures, when appropriate to do so.

Site visits will be performed on the sampled sites to verify measures installed under the program. The site visits will include confirmation that the program measures are installed, are operational and producing energy savings. Data will be collected as necessary to support the re-estimation of energy savings. In most cases this will include characteristics and operations data that is needed to support the selected evaluation savings calculation methods. For some sampled cases the data collection will include one-time and/or short terms measurements of parameters relevant to the energy performance of the installed measures. For measures where the NWE methods are determined to be reasonable, contractor will recalculate savings using the as-built conditions observed during the site visit. For measures where the NWE method is not adequate, energy (kWh or therms) and demand savings will be recalculated using the more appropriate standard engineering techniques and contractor will support (document) and defend its choice of any alternate methods. Realization rates will be calculated for all custom measures as the ratio of the evaluation savings to the reported savings. To the extent possible, reasons for differences between the evaluated and reported savings will be documented.

5.3.8. Renewable Energy

Files for each sampled renewable project will be reviewed and site visits will then be scheduled and conducted.

For photovoltaic systems, the site visit data to be collected will include location, system type and capacity (kW), panel, and inverter make and model, panel tilt and azimuth and presence of obstructions. Individual system peak demand reduction will be determined by comparing the actual nameplate rating of the installed equipment to the proposed equipment capacity. The estimated annual energy production for each installation will be determined using the National Renewable Energy Laboratory (NREL) PVWATTS software. PVWATTS is a performance calculator for grid-connected PV systems. The

calculated energy production for each site will be compared with NWE's reported energy production for each site to determine individual site energy realization rates. The PVWATTS software will also be used to estimate the capacity factor for each sampled system. The capacity factor is the ratio of the expected annual system output relative to what the system could have produced if it ran at full power for the entire year.

For wind generation systems, the site visit data to be collected will include location, system type, capacity (kW), turbine and inverter make and model, general topography description and turbine tower height. Individual system peak demand reduction will be determined by comparing the actual nameplate rating of the installed equipment to the proposed equipment capacity. The estimated annual energy production for each installation will be determined using NREL published wind resource maps and manufacturer's wind speed versus energy production data. This calculated energy production for each site will be compared with NWE's reported energy production for each site to determine individual site energy realization rates. The capacity factor will also be calculated, in a similar manner to the PV systems.

Appropriate techniques will be developed for other types of systems, biogas, hydro and methane, if they are selected in the sample. Contractor will also consider the use of analyses completed by Northwest SEED, if they are available for any of the sampled projects.

5.3.9. Training

We will analyze program tracking data that documents the registrations for two NWE training programs. They include Building Operator Training and Motor Management Training. Relevant information gathered from registrants, such as the floor area of the buildings that they operate will be assessed. Contractor will also review prior evaluations of these training programs performed by NEEA and others and derive energy (kWh or therms) and demand savings factors that can be applied to the registration data to estimate program savings.

5.3.10. NEEA Initiatives

Contractor will review the methodology used by NWE to develop their NEEA savings claims. It will include a review of spreadsheet summaries provided by NWE that document the methodology used to calculate the reported energy savings by measure for each program year. It will also include a review of NEEA spreadsheets documenting the reported energy savings for the entire NEEA territory and the savings (kWh, kW and therms) attributed to NWE.

NEEA regularly conducts independent evaluations of its initiatives. This study will also conduct detailed reviews of the NEEA evaluations that were performed during program cycles covered by the evaluation and relevant to savings claimed by NWE. The reviews will critique the methods used and results obtained by these evaluations and extract important information relevant to the application of these results to NWE savings.

This analysis will be conducted for the following NEEA initiatives. These are the initiatives for which NWE has claimed savings sometime in the period 2007-11. Savings may have been realized from other NEEA initiatives, but they are outside the scope of this study.

- Codes and Standards - Energy Codes 1997 - 2004
- Commercial - Commissioning of Public Buildings
- Commercial - Verdiem
- Irrigation - Soil Moisture Data Logger
- Residential - Energy Star - CFL Bulbs
- Residential - Energy Star - CFL Fixture
- Residential - Energy Star - Clothes Washers
- Residential - Energy Star - Dishwashers
- Residential - Energy Star - New Construction
- Residential - Energy Star - Refrigerators
- Residential - Energy Star - Specialty CFL Bulbs
- Residential - Energy Star - Windows
- Residential - Multi-Family Codes > 2004
- Residential - Residential Energy Star TVs
- Residential - Single-Family Codes > 2004
- Residential & Commercial - 80 Plus Power Supply

Based on the information gathered during the review of the NEEA programs and NWE methods, realization rates will be calculated for measures and for each program year. An average realization rate will be calculated for the initiatives and applied to NWE-reported energy savings to determine an adjusted energy (kWh or therms) and demand savings. All methods and results from the evaluation will be documented in the final report.

5.4. Gross Savings Persistence

The objective of the persistence review is to assess the claimed measures lives across the portfolio. Contractor will do so by reviewing the collection of measure lives, identifying those with the most uncertainty, and then inspecting a sample of such measures from the 2007-08 program years to determine whether significant changes occurred at the project site to the conditions necessary for savings. Contractor will then analyze these data and either confirm the program-assigned measure lives or develop revised measure lives as appropriate.

Measure life review. Contractor will examine the measure lives in the portfolio by measure and/or measure category. Contractor will look for areas of high uncertainty, such as instances where similar measures were assigned dramatically different measure lives, or where the values seem unusually high or low. To benchmark against national standards, this assessment will be informed by comparisons with measure lives developed by other states, utilities, and organizations—most notably, the Regional Technical Forum (RTF).

Based on the measure life review, contractor will select a sample of measures within each priority group for additional data collection. These measures will come from the 2007-08 portfolios, as these older projects will have more time over which measure performance could have changed.

Data collection. For each sampled measure, contractor will examine the project file and extract detailed measure information, particularly that which will help field investigators determine exactly where, when, and what got installed. Surveyors will also pay attention to key parameters that could affect the realized savings, such as facility schedules and uses.

The investigator will contact project site personnel to schedule a site visit to inspect the condition and functionality of equipment and systems associated with the sampled measure. At this time, (s)he may ask screening questions to check for changes major enough to obviate the need for a site inspection, such as a facility being closed permanently or demolished.

The investigator will (1) visually verify the presence and function of the measure, and (2) interview building staff about measure performance or modifications made since implementation. In cases where a measure is partially functioning, contractor will perform a qualitative assessment, based on the evidence at hand, of how much savings is still being realized (possible choices may be "all savings are persisting," "some savings are persisting," or "most savings have not persisted."). The investigator will document the site inspection findings for each measure in a standardized format.

Analysis. Once all field data collection is complete, contractor will aggregate the data in a master matrix and perform quality control checks. Contractor will then assess the evidence for each priority measure and determine if the corresponding measure life should be updated. For example, if a certain measure has a claimed life of 20 years, but contractor finds that for a sample of such measures installed four to five years ago have already had a majority fail, then contractor would recommend downgrading the Effective Useful Life (EUL).

5.5. Free riders, Spillover and Leakage

To estimate free ridership rates, contractor will use a self-report method through surveys with a statistically valid sample of participants. The self-report method asks participants a series of carefully constructed survey questions to learn what the participants would have done in the absence of the program. Responses to the survey questions will be used to construct a free ridership rate for each participant/site in the evaluation sample.

Attribution (the extent to which the program can be attributed with inducing the efficiency action, the converse of which is free ridership) will be assessed using a brief instrument that assesses two components of free ridership: 1) intention to carry out the energy-efficient project without program funds; and 2) influence of the program in the decision to carry out the energy-efficient project. We will assess intention by asking how the project likely would have differed if the respondent had not received the program incentive, from *no change* (would have done the project exactly as it was done), to *reduced project scope or size*, or *used less expensive or efficient equipment*, to *cancelled the project altogether*.

Program influence will be assessed by asking the respondent how much influence – from "1" (no influence) to "5" (great influence) – the program incentive, the assessment, and the respondent's interaction with the contractor had on the decision to do the project the way it was done.

Spillover (participant and nonparticipant) and leakage will be assessed using the self-report method. For all reported spillover actions, contractor will ask the extent to which NWE DSM activities – its rebate programs, advertising, website, call center, audits, et cetera – have influenced them to undertake the efficiency action outside of the program. For leakage, the contractor will ask participants where the equipment was initially installed and whether it has been subsequently moved to a new location (outside NWE's service territory).

Energy (kWh or therms) and demand(kW) savings will be quantified by the contractor for participant spillover measures that are identified in the survey. Verification of the spillover measures will be incorporated into the site visit that is performed for the program measures. In addition to confirming that the measures were installed and are justifiably spillover measures, the contractor will collect information regarding the performance of the measures (including baseline conditions) that will be used as the basis for the savings estimates.

Energy and demand savings will also be quantified for non-participants measures identified in the survey. However these estimates will be less rigorous than the participant spillover measures because they will be made without the benefit of a site visit. Instead they will be based on verification trends observed for participant spillover and the contractor's engineering judgment as to the performance of the identified measures.

For each program, the program-specific net-to-gross ratio is calculated from the program-specific weighted average inverse free ridership score (that is, 1 – FR, weighted by project savings), plus additional savings from spillover, minus savings lost to leakage, where the spillover and leakage terms are expressed as proportions of program savings.

5.6. Install vs. Rebate Date

During the file review task, contractor will examine the project file information provided by NWE and extract information relevant to the downstream analyses. For the sampled cases that address the lag in claimed savings, the file review will include verification of the paid date that is recorded in the project tracking data. It will also include extracting file information related to the date that the measure (or

measures) was installed. This information may be obtained or estimated from project invoices, inspection reports or other communications and documentation in the project file.

Based on the information found in each file, contractor will determine an appropriate installation date for each measure. If the available documentation provides conflicting information on installation date, contractor will carefully review each relevant document and use its best judgment to estimate installation dates. In some cases the estimate will be a month and year rather than a specific day.

If no installation date data is provided in the project file, the contractor will make additional inquiries regarding the installation date during the site visit with site staff that is most knowledgeable about the installation date. For cases where the customer can not estimate the installation date or there is a lot of uncertainty surrounding their estimate, the contractor will do additional investigation, on a case-by-case basis. This might include interviews with other customer staff; interviews with the installation contractor(s) or equipment suppliers; or further investigation of documentation in the files that might lead to an installation date.

After best estimates of installation dates are obtained for measures in each sampled project, the contractor will compute the difference between the installation date and the verified paid date. This difference (expressed in fractional months or years) will be the lag in the claim of energy savings. For sites with multiple measures, an average lag time will be computed for the project, which is weighted by the relative savings of each installed measure. The site level lag time will be the basis for a correction to the claimed savings for each sampled case.

5.7. Estimation of Program-Level Impacts

In developing program-level estimates, a uniform approach will be used for all study domains that involve site and measure specific savings claims. These will all be based on random samples of measure installations at specific end user sites. Some samples may be stratified by NWE's estimate of savings or other parameters to increase sampling efficiency. In those cases, sample weights will be computed to account for the disproportional probability of selection across the strata. In some cases, the sample design may be simple random and thus they will be self-weighting. The population estimate will proceed in three stages:

- **File review.** Various adjustments will be applied to the claim savings based on an engineering review of the file review sample. This will create new savings estimates for each sampled case along with a file review realization rate. Two estimates of file review program savings will be prepared. One will be based on an extrapolation of the realization rate. The other will be based on direct estimate of mean savings by strata and domain. The actual precision of the program-level estimates will be computed for both methods.
- **Site visit.** Additional site-specific data collection will be performed, tailored to the measures and delivery methods of each domain. These samples will directly represent 2010 and 2011 installations, but should be the best available indicators of first-year gross savings for the five year

program cycle. Gross savings estimates for this sample will be prepared, which can be used in estimating strata and study domain means and realization rates. These will be applied to the file review results to achieve a combined estimate of savings with both file review and site visit engineering adjustments. Again, achieved precision will be computed for both mean savings and based on realization rates.

- **Participant survey net savings parameters.** We will develop per-participant free rider estimates for each sampled 2010 and 2011 participant, based on the self-reported data of surveyed end users. These will be treated in a fashion similar to the site visit sample and will be applied to all years of the program cycle as they will be the best available measurement of free-ridership. Similarly, we will estimate free-drivers, spillover and leakage rates. All of these net parametric estimates will be applied to the site visit adjusted gross results to estimate various versions of net savings. Achieved precision will be computed for each version of the net savings estimates.

Other appropriate methods will be applied to study domains in delivery methods that do not involve site and measure specific savings claims.

6. Process Evaluation

6.1. Create Data Collection Instruments

Contractor will design five or more in-depth interview guides for program staff and implementation contractors. The interview guides will be tailored using skip patterns to each type of respondent. The interview guides will gather data sufficient to address the objectives in Table 2. The contractor will explore with each contact, as appropriate, their role and activities, program processes (from outreach and marketing to application processing to data tracking to internal communications), program strengths and successes, and opportunities for program improvement. Questions will be included that assess consistency with efficiency program best practices.

Contractor will design survey instruments for participating customers that are tailored to each of the program delivery methods. Survey designs will also be tailored to accommodate different types of nonparticipating customers and trade allies. The surveys will be tailored using skip patterns to address issues specific to the programs and sub-programs that contacts participated in. Each of the surveys will include questions seeking demographic/firmographic information from the contacts, so that contractor will be able to briefly characterize each group. The surveys will gather data sufficient to address the objectives in Table 2.

Surveys of participants and nonparticipants will be designed to accommodate which fuels (electric and gas) are purchased by the customer and whether that customer purchases either or both fuels as a Choice customer.

Contractor will ask participating customers and trade allies about their activities in the program, their program experiences, elements of satisfaction and dissatisfaction, suggestions for program

improvement, awareness of the array of NWE's DSM incentives and assistance, and extent to which they repeatedly participate in programs at each opportunity. The questions will address free ridership, free drivers, and leakage. Contractor will calculate free rider, free driver and leakage values from the participating customers.

All surveys of program participants (customers and trade allies) will include questions such as the following:

- How did the respondent first learn of the program?
- Did the respondent access NWE's Web site for program information? Did the respondent print program application materials from the Web site?
- How clear was the program information presented to the respondent in terms of application process, program steps, incentive payments, any approval or verification requirements, and whom to contact with a question or concern?
- How satisfied were respondents with application processes, program steps, timeliness of incentive payments, timeliness and ease of any approval or verification requirements, and with responses received when they contacted a program representative with questions or concerns?
- What was their use of, and experience with, the NWE DSM program web pages?
- What motivated respondents to participate? What is the effectiveness of program incentives and rebates?
- What hesitations, if any, did they have when considering participation?
- What problems, if any, did they encounter while participating?
- [For trade allies only] What are the benefits of preferred contractor status? What are training levels, and effectiveness and overall satisfaction with program-sponsored training(s)?
- What recommendations might they offer for improving the programs?

Contractor will ask of nonparticipating customers their awareness of the array of NWE's DSM incentives and assistance; the extent to which they have purchased equipment for which NWE offers assistance and whether they believe that equipment to be energy efficient; extent to which they have purchased CFLs, location of purchase (to determine if part of the mass distribution activities, for the free driver estimate), and their awareness of NWE's promotion of CFLs; whether they have considered participating and, if so, why they did not participate; sources of information they turn to for assessing energy and equipment options; demographic/firmographic information; and similar items.

As with the in-depth interview guides, there will be questions in common across the surveys so that contractor can obtain information on topics across contacts and programs, enabling the development of both program-specific and portfolio-level findings, conclusions, and recommendations.

The surveys will comprise primarily closed-ended questions. An exception to this is the survey for the Renewable Energy Program, for which a number of open-ended questions will be necessary to understand the experiences of participants with non-standard projects.

Contractor will submit, as requested by NWE, draft interview guides and surveys for review by NWE. Contractor will also submit for approval the scripts in any emails which will be sent to solicit on-line survey completion.

In this task, the samples will be prepared to support the survey process. We will draw the samples for the nested process/impact samples as described in Section 4. The process team will develop call lists from the samples. The process team will also acquire any business listings contractor need to purchase to augment NWE's program data, such as for residential home builders and nonresidential developers. Data purchased will remain the property of NWE.

6.2. Collect Interview and Survey Data

Contractor staff will conduct all of the in-depth interviews and any participant and nonparticipant surveys with small samples. Each contact will be called to schedule a convenient time for the interview. Data will be obtained in the in-depth interviews by taking detailed notes and typically audio recording. Contractor will use Qualtrics, web-based survey software, to administer telephone surveys and implement our web surveys. For larger surveys contractor will use a full-service market research firm.

6.3. Analyze Data

Contractor will clean and analyze quantitative data from all participant and nonparticipant surveys using the Statistical Package for Social Sciences (SPSS) and MS Office Excel to code verbatim responses, and NVIVO™ qualitative analysis software to code and assist in analysis of qualitative interview data.

The analysis will be conducted in four steps.

1) *Analyze quantitative survey results*: A conservative statistical analysis approach will be used, making sure that the data match the statistics applied to them as well as possible. As appropriate, frequencies and cross-tabulations, analysis of variance and linear regression will be prepared. Analyses will be conducted for individual programs, sub-programs and at the portfolio level, with findings, conclusions, and recommendations drawn.

2) *Analyze the qualitative interview results:* Interview findings will be coded using NVIVO™ qualitative analysis software. The analysis will identify common themes across multiple respondents, determining the number of contacts endorsing a theme and whether particular perspectives are endorsed by specific groups.

3) *Draw comparisons between the best practice results and NWE programs.* Interview and survey questions will seek information on program practices related to the best practices elements identified for each program. The interview and survey findings will be analyzed to determine the

extent to which the NWE practices conform to the practices identified in the *National Energy Efficiency Best Practices Study* (www.eebestpractices.com, sponsored by the California Public Utilities Commission) and by the practices of utilities and program administrators that NWE agrees provide appropriate points of comparison. Care will be taken to assure that the practices identified as "best" for the comparison with NWE's programs are appropriate to its service territory, which has unique population and geographic characteristics.. This assessment will be conducted for each program.

4) *Analyze program records for accuracy, consistency, and completeness.* This activity will be conducted by the impact team coincident with their activities to draw the samples, and augmented with data collected and analyzed by the process team. Sampled projects will be checked for completed program application forms and projects. Data anomalies and areas for data collection improvement will be identified. Contractor will identify – from review of program records and process interviews and surveys – areas where excess, unnecessary, or duplicative data collection is occurring.

7. ECONOMIC ANALYSIS

The objective of this task is to apply various economic tests to the savings achieved by each study domain and for the portfolio as a whole. These tests will measure cost-effectiveness of each delivery method and program combination from the economic perspective of three entities: utility company, ratepayer, and society. Contractor will establish a transparent and accessible calculation system and implement these tests against the study findings and NWE program tracking savings claim by year and reporting period. The output of this system will be tables that conform to NWE's reporting requirements. The reporting requirements are contained in this embedded spreadsheet


Reporting Requirements.xls

. This calculator will be developed in MS Excel so that it can easily be run by a variety of parties who may be involved in the PSC proceedings. The calculator will be designed to be fully transparent and in the public domain.

The calculator will be developed and applied as follows:

- **Review NWE calculator.** NWE's cost-effectiveness calculator will be reviewed and compared to the California Standard Practice Manual, the RTF ProCost model, and recently developed New York state procedures. Significant aspects of the NWE calculator that do not conform to national best practices or regional requirements will be identified. These issues will be discussed with NWE and agreement reached on appropriate changes to the NWE calculator. An evaluation calculator will be created by making these modifications to the NWE calculator, if necessary.
- **Obtain NWE economic inputs.** NWE will provide various economic inputs that are outside the scope of this evaluation. Many of these will come from the review of the NWE calculator, such as the marginal values of energy over the forecast period. Other inputs are assumed to be available from

the program tracking data, specifically measure life and incremental measure costs. Others inputs, such as the fixed cost of operating each DSM program, will be supplied by NWE.

- **Compute economics for NWE's savings claim.** Contractor will populate the calculator with the published savings claims for each program. Runs will be made with these inputs to create baseline values for the economic test that will be compared to a number of scenarios for evaluation updates.
- **Compute economics with evaluation update scenarios.** The first scenario will be based on program tracking data as delivered by NWE. Differences will probably be small, but if there are any, it will identify issues with data handling and NWE's summarization of the program tracking data. The next scenario will be based on the file review, applying either average realization rates or mean savings. Differences observed here may reflect problems with unit counts, the assignment of unit energy savings, or modifications to the unit energy savings. The next scenario will involve updates from the first-year site visit sample and associated metering. This will be followed by a series of scenarios that apply the results of the net impact estimates in Section 5.5 (free-riders, spillover and leakage). The final scenario will result from the gross savings persistence work. The results of this work may provide the basis for modifying measure life for selected measures. This series of scenarios will provide NWE both with the needed evaluation estimate and a quantitative decomposition of the factors that cause the evaluation estimate to be different than NWE's estimate.

8. Reporting

Contractor will prepare a high quality, detailed and comprehensive report, including an executive summary, that describes and documents the data collected, methodology, calculations and findings of for each task in this study. The report will also provide clear, actionable recommendations concerning methods for improving program operations or improving the estimation of program savings. The report will be designed to both satisfy NWE's internal requirements and to communicate clearly with the PSC and other external parties. The report will include an Excel workbook containing the information specified NWE reporting requirements. The report will be submitted as a draft for review and comment by NWE. A final version will then be issued that reflects NWE's comments and suggestions.

Contractor will make up to three in-person trips to Montana with appropriate staff for presentations to NWE staff, advisory groups, regulators and other parties of NWE's choosing. In addition, contractor will provide up to 40 hours of senior analyst time to formulate responses to data requests made at or following these presentations.

9. Schedule

The Gantt chart below shows the work breakdown structure for this evaluation along with the critical path dependencies among the tasks that their expected start and finish dates.

NWE Evaluation Plan

ID	Task Name	Duration
1	**Task 1: DSM Evaluation Plan**	**55 days**
2	Review program data	20 days
3	Draft plan	13 days
4	NWE review	8 days
5	Kick-off meeting with NWE	3 days
6	Final Plan	32 days
7	**Task 2: Project Management**	**220 days**
8	Weekly status review	220 days
9	Bi-weekly or Monthly status reporting	220 days
10	**Task 3: Program Process Evaluation**	**186 days**
11	Develop participant surveys	50 days
12	Develop other surveys	46 days
13	Collect participant data	20 days
14	Collect program staff data	45 days
15	Collect non-participant data	40 days
16	Collect trade ally data	45 days
17	Process analysis	45 days
18	**Task 4: DSM Program Impact Evaluation**	**125 days**
19	Select participant sample	5 days
20	Select all other samples	30 days
21	Complete file review	30 days
22	Complete first-year site surveys	90 days
23	Complete metering	90 days
24	Complete persistance sites	90 days
25	Complete install date sites	90 days
26	Program-level estimates	10 days
27	**Task 5: DSM Program Economic Analysis**	**138 days**
28	Review and modify NWE calculator	45 days
29	Process economic test scenarios	12 days
30	**Task 6: DSM Program Evaluation Final Rep**	**120 days**
31	Draft report	105 days
32	NWE review	5 days
33	Final report	5 days
34	Presentation ot NWE	5 days