# CT-3B-NR: Renewables: Non-Residential Sector OMB Control No. XXXXXXXX

# DATABASE VARIABLES

&INTERVIEWER NAME	name of the caller
&CONTACT	contact name from program database
&SPONSOR	organization that sponsored the program
&PROGRAM	program name
&DATES	dates of program operation funded by SEP or of research interest
&APPOINT	date/time to call back
&NAME	person to call back
	extension or phone number to call back
	service address where measure(s) were installed
&CITY	city where measure(s) were installed
&CORRECT	
&MEASURE_TYPE	wind, pv, solar heat, biomass biogas, geothermal, fuel cell, or other
&MEASURE	specific technology within measure type,
	programs years under evaluation
	boolean that is true if respondent installed photovoltaic measures
	specific photovoltaic technology,
	number of modules installed by pv technology
	specific pv inverter technology
	number of pv inverters installed by technogy
&WIND	boolean that is true if respondent installed wind turbine measures
&W_TECH	specific wind turbine technology,
	number of wind turbine measures installed by technology
&WINV_TECH	specific wind turbine inverter installed by technology
	number of wind turbine inverters installed by technology
	boolean that is true if respondent installed solar heating measures
	specific solar heating technology,
	number of solar hot water modules installed by technology
	boolean that is true if respondent installed biomass measures
	specific biomass technology,
&BM_NUM	
	boolean that is true if respondent installed biogas measures
	specific biogas capturing technology,
	specific biogas power generation technology,
&BIOGAS_NUM	
&OTHER	boolean that is true if respondent installed other measures

## INTRODUCTION AND FINDING CORRECT RESPONDENT

**INITIAL.** Hello, this is &INTERVIEWER NAME calling on behalf of the United States Department of Energy from ITRON Incorporated.

May I please speak with &CONTACT, or the person at this location who is most knowledgeable about your organizations' participation in &SPONSOR's &PROGRAM, which operated during the period &DATES?

[IF NEEDED] This is not a sales call.

[IF NEEDED] This is a fact-finding survey only, authorized by the U. S. Department of Energy which wants to understand how &PROGRAM worked.

[No, that person is not available right now]	1	[GO TO APPOINT]
[Unable to refer someone who can help]	2	[GO TO APPOINT]
[Yes, that would be me]	3	[GO TO PURPOSE]
[Yes, let me transfer you to]	4	[GO TO INTRO3:s]
[No, that is the wrong person]	5	[GO TO HI]
[No, other reason (specify)]	6	[GO TO APPOINT]
[Don't Know]	97	[GO TO APPOINT]
[Refused]	98	[GO TO APPOINT]

**APPOINT.** When would be a good day and time for us to call back?

		RECORD, CONTACT NAME, DAY OF THE WEEK, TIME OF DAY AND DATE TO CALL BACK
		CALL BACK AT AGREED TIME
[Don't Know]	-97	THANK & TERMINATE; ASSIGN REFUSED AND REMOVE FROM CALL ORDER
[Refused]	-98	END CALL; KEEP CONTACT IN REGULAR CALL ORDER

**INTRO3(99).** Thank you for your time. We need to speak with the person at your organization that is most familiar with your participation in the &PROGRAM. Those are all of the questions I have for you today [TERMINATE; ASSIGN DISPOSITION & REMOVE FROM CALL ORDER]

**HI.** Who would be the person at this location who is most knowledgeable about your organizations' participation in &SPONSOR's &PROGRAM?

	RECORD NAME AS &CONTACT	[GO TO MAY_I]
[Don't Know]	-97	[GO TO APPOINT]
[Refused]	-98	[GO TO INTRO3(99)]

#### **MAY\_I.** May I speak with him/her?

[Yes]	1	[GO TO INTRO3:s]
[No]	2	[GO TO EXT]
[Don't know]	-97	[GO TO EXT]
[Refused]	-98	[GO TO EXT]

#### INTRO3:s.

Hello, this is <INTERVIEWER NAME> calling on behalf of the Department of Energy from Itron Incorporated.

This is not a sales call. This is a fact-finding survey only. According to our records, your organization participated in &SPONSOR's &PROGRAM.

I was told that you are the person most knowledgeable about this program. Is this correct?

[Yes]	1	[GO TO PURPOSE]
[No]	2	[GO TO HI]
[No one knows about the program]	3	[GO TO INTRO3(99)]
[Don't know]	-97	[GO TO HI]
[Refused]	-98	[GO TO EXT]

#### **EXT.** Is there a phone extension or phone number you recommend we use when we call back?

[Yes]	1	RECORD EXTENSION OR PHONE NUMBER AS ☎
		[GO TO APPOINT]
[No]	2	[GO TO APPOINT]
[Don't know]	-97	[GO TO APPOINT]
[Refused]	-98	[GO TO APPOINT]

#### PURPOSE.

The U.S. Department of Energy (DOE) would like to inform each individual that the information requested here is being solicited under the statutory authority of Title III of the Energy Policy and Conservation Act of 1975, as amended, which authorizes DOE to administer the State Energy Program (SEP). This information is being sought as part of a national evaluation of SEP, the purpose of which is to reliably quantify Program accomplishments and help inform decisions on future operations. The sole use of the information collected will be for an analysis of national-level Program impacts. Disclosure of this information is voluntary and there will be no adverse effects associated with not providing all or any part of the requested information.

We are calling you today to learn about your organization's response to the &SPONSOR's &PROGRAM. The information we gather will be used by the Department of Energy to understand how the program has worked. The survey should take no more than 50 minutes for you to complete. The responses you provide will be combined with those of many other individuals and will not be linked to you or your organization in any way.

## SCREENER

SC1.

First, I'd like to ask you a few questions about your organization and facility. Our records show your organization occupies a facility at &SERV\_ADDR in &CITY. Is that correct?

[Yes]	1	[GO TO COMMENT3]
[No]	2	[GO TO CORRECT]
[Don't know]	-97	[GO TO COMMENT1]
[Refused]	-98	[GO TO COMMENT1]

**COMMENT1.** We were attempting to reach the customer at &SERV\_ADDR and since you cannot confirm this address, those are all the questions that we have for you today, on behalf of the Department of Energy, thank you for your time.

**CORRECT** 

May I have your address?

[Yes]	1	RECORD IN &CORRECT
		[GO TO COMPARE]
[No]	2	[COMMENT2]
[Don't know]	-97	[GO TO HI]
[Refused]	-98	[ GO TO COMMENT2]

COMPARE.

[DO NOT READ] Are these addresses similar or totally different?

Computer Address - &SERV\_ADDR **Corrected Address - & CORRECT** 

[Similar]	1	SET &SERV_ADDR = &CORRECT
		[GO TO COMMENT3]
[Totally different]	2	[GO TO COMMENT2]

**COMMENT2.** We were attempting to reach the customer at &SERV\_ADDR in &CITY and since that does not match your address, then we must have mis-dialed the telephone number. Those are all the questions that we have for you today, on behalf of the Department of Energy. Thank you for your time and cooperation.

**COMMENT3.** The questions in this survey will refer to your "FACILITY," which means ALL of the buildings owned or occupied by your organization at &SERV\_ADDR. [INTERVIEWERS SHOULD RE-READ THIS STATEMENT AS NEEDED THROUGHOUT THE SURVEY TO REMIND THE RESPONDENTS]

SC2. Our records show that your organization received support from &PROGRAM to carry out renewable energy generation projects in the facility located at &SERV\_ADDR in &CITY. Is that correct?

[Yes]	1	[GO TO SC3]
[No]	2	[GO TO COMMENT4]
[Don't know]	97	[GO TO COMMENT4]
[Refused]	98	[GO TO COMMENT4]

**COMMENT4.** Can you refer me to someone who would be likely to be familiar with such a project?

[Yes]	1	[GO TO HI]
[No]	2	[GO TO INTRO3(99)]
[Don't know]	-97	[GO TO INTRO3(99)]
[Refused]	-98	[GO TO INTRO3(99)]

**SC3.** Are you familiar with your organization's decision to participate in &PROGRAM and the nature of the renewable energy measures carried out with its assistance?

[Yes]	1	[GO TO RI1]
[No]	2	[GO TO COMMENT4]
[Don't know]	-97	[GO TO COMMENT4]
[Refused]	-98	[GO TO COMMENT4]

RESPONDENT INFO:	ROLE IN	THE PRO	JECT

- **RI1.** I'd like to start getting a little information about you. What is your job title? [RECORD JOB TITLE]
- **RI2.** Which of the following best describes your role in making decisions regarding the purchase and installation of renewable energy systems such as wind turbines, solar panels, biofuels, geothermal, or fuel cells in your facility? **[READ OPTIONS, SELECT ONE]**

Sole responsibility for decisions	1	
Part of a group that makes	2	[GOT TO RI2a]
decisions		
Provide recommendations to	3	[GO TO RI2a]
decisions makers		
Not involved in making decisions	.4	[GO TO RI2a]
Something else [SPECIFY]	5	[GO TO RI2a]

**RI2a.** Who else was involved in the decisions?

RECORD NAME		[GO TO RI3]
RECORD PHONE NUMBER/EXTENSION		[GO TO RI3]
[Don't know]	-97	[GO TO RI3]
[Refused]	-98	[GO TO RI3]

**RI3.** Which of the following roles did you play in regard to the project or projects supported by &SPONSOR's &PROGRAM? **[READ OPTIONS, MARK ALL THAT APPLY]** 

1	[GO TO NEXT SECTION]
2	[GO TO NEXT SECTION]
3	[GO TO NEXT SECTION]
4	[GO TO NEXT SECTION]
5	[GO TO NEXT SECTION]
6	[GO TO NEXT SECTION]
7	[GO TO NEXT SECTION]
8	[GO TO NEXT SECTION]
9	[GO TO NEXT SECTION]
10	[GO TO NEXT SECTION]
-97	[GO TO COMMENT4]
-98	[GO TO COMMENT4]
	3 4 5 6 7 8 9 10 -97

## INITIAL VERIFICATION INVENTORY

Note: the segments vy and vn elicit the same type of information from customers in programs that are able to provide measure-level data for projects supported by the program (vy) and those for which measure-level data are not available (vn). The answers to both sequences are answered in the same initial verification grid below. The objective of this sequence is to provide verification of the overall scope of the project, characacterize the scope of support provided by the sep program and other programs, and eliminate the need for repetitive questions in the detailed measure sections. Sequence vb is addressed to all respondents.

**V1.** I'd like to ask you about the scope of the project at &SERV\_ADDR.

SEQUENCE VY: FOR CUSTOMERS IN PROGRAMS WITH MEASURE-LEVEL DETAIL IN THE TRACKING DATABASE.

#### [REPEAT THIS SERIES FOR EACH MEASURE IN THE TRACKING DATA]

**VY1a.** According to &SPONSOR records, your organization installed &MEASURE as part of the project. Is this correct?

[Yes]	1	[GO TO VY2c]
[No]	2	[GO TO VY2a]
[Don't know]	-97	[GO TO VY1a FOR NEXT MEASURE]
[Refused]	-98	[GO TO VY1a FOR NEXT MEASURE]

# VY2a. Why was &MEASURE not installed at &SERV\_ADDR? [DO NOT READ, MARK ALL THAT APPLY]

Never planned to install as part of project	1	[GO TO VY1a FOR NEXT
		MEASURE]
Project proved to be technically infeasible	2	[GO TO VY2b]
Financial resources were not available	3	[GO TO VY2b]
Still plan to install, haven't had time to complete project	4	[GO TO VY2b]
[Other (Specify)]	5	[GO TO VY2b]
[Don't know]	-97	[GO TO VY2b]
[Refused]	-98	[GO TO VY2b]

#### **VY2b.** Do you plan to install &MEASURE within the next year?

[Yes]	1	[GO TO VY2c]
[No]	2	[GO TO VY2c]
[Don't know]	-97	[GO TO VY1a FOR NEXT MEASURE]
[Refused]	-98	[GO TO VY1a FOR NEXT MEASURE]

**VY2c.** Which of the following best characterizes the current status of work on this measure?

Installation to consulate and in use	1	ICO TO VVIa FOR MEYT
Installation is complete and in use	1	[GO TO VY1a FOR NEXT
		MEASURE]
Installation is complete but not now in use	2	[GO TO VY1a FOR NEXT
		MEASURE]
Work on the project has not started	3	[GO TO VY1a FOR NEXT
		MEASURE]
Project concept developed but no designs or equipment specified	4	[GO TO VY1a FOR NEXT
		MEASURE]
Designs and equipment specified but no detailed cost estimates	5	[GO TO VY1a FOR NEXT
		MEASURE]
Contractor selected but installation work not begun	6	[GO TO VY1a FOR NEXT
		MEASURE]
Installation work underway	7	[GO TO VY1a FOR NEXT
		MEASURE]
Other (Specify)	8	[GO TO VY1a FOR NEXT
		MEASURE]
[Don't Know]	-97	[GO TO VY1a FOR NEXT
		MEASURE]
[Refused]	-98	[GO TO VY1a FOR NEXT
		MEASURE]

[GO TO VB1 AFTER COMPLETING VY SEQUENCE FOR ALL MEASURES IN TRACKING DATABASE]

SEQUENCE VN: FOR CUSTOMERS IN PROGRAMS WITH NO MEASURE-LEVEL DETAIL IN THE TRACKING DATABASE.

**VN1a.** Which of the following types of measures were installed as part of the project? [READ LIST IN THE GRID. MARK ALL THAT APPLY]

Wind Turbine	1	[GO TO VN1b]
Photovoltaic	2	[GO TO VN1b]
Solar Heating	3	[GO TO VN1b]
Geothermal	4	[GO TO VN1b]
Biogas	5	[GO TO VN1b]
Biomass	6	[GO TO VN1b]
Fuel cells	7	[GO TO VN1b]
Other Renewables Measures	8	[GO TO VN1b]

[ASK VN1b FOR EACH MEASURE TYPE IDENTIFIED IN VN1a]

**VN1b.** Which of the following best characterizes the current status of work on this measure?

Installation is complete and in use	1	[GO TO VN1c]
Installation is complete but not now in use	2	[GO TO VN1c]
Work on the project has not started	3	[GO TO VN1c]
Project concept developed but no designs or equipment specified	4	[GO TO VN1c]
Designs and equipment specified but no detailed cost estimates	5	[GO TO VN1c]
Contractor selected but installation work not begun	6	[GO TO VN1c]
Installation work underway	7	[GO TO VN1c]
Other (Specify)	8	[GO TO VN1c]
[Don't know]	-97	[GO TO VN1c]
[Refused]	-98	[GO TO VN1c]

**VN1c.** Were there any measures for which your organization received support from &PROGRAM in &TARGET\_YEARS that have not yet been installed?

[Yes]	1	[GO TO VN1c]
[No]	2	[GO TO VB1]
[Don't know]	-97	[GO TO VB1]
[Refused]	-98	[GO TO VB1]

**VN1d.** Which measures or types of measures received support from &PROGRAM but have not yet been installed? [MARK ALL THAT APPLY IN LIST IN THE GRID.]

Wind Turbine	1	[GO TO VN2a]
Photovoltaic	2	[GO TO VN2a]
Solar Heating	3	[GO TO VN2a]
Geothermal	4	[GO TO VN2a]
Biogas	5	[GO TO VN2a]
Biomass	6	[GO TO VN2a]
Fuel cells	7	[GO TO VN2a]
Other Renewables Measures	8	[GO TO VN2a]

## FOR EACH MEASURE TYPE MARKED IN VN1c, ASK VN2a THROUGH VN2B.

VN2a. Why was &MEASURE\_TYPE not installed at &SERV\_ADDR? [DO NOT READ, MARK ALL THAT APPLY]

Never planned to install as part of project	1	[GO TO VN2a FOR NEXT MEASURE]
Project proved to be technically infeasible	2	[GO TO VN2b]
Financial resources were not available	3	[GO TO VN2b]
Still plan to install, haven't had time to complete project	4	[GO TO VN2b]
[Other (Specify)]	5	[GO TO VN2b]
[Don't know]	-97	[GO TO VN2b]
[Refused]	-98	[GO TO VN2b]

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**VN2b.** Do you plan to install &MEASURE within the next year?

[Yes]	1	[GO TO VN2a FOR NEXT MEASURE]
[No]	2	[GO TO VN2a FOR NEXT MEASURE]
[Don't know]	-97	[GO TO VN2a FOR NEXT MEASURE]
[Refused]	-98	[GO TO VN2a FOR NEXT MEASURE]

[GO TO VB1 AFTER COMPLETING VN2a – VN2b SEQUENCE FOR ALL APPLICABLE MEASURES]

# VY AND VN SEQUENCE RESPONSE GRID FOR SEP SUPPORTED EFFORTS

	1a	1c (N only)	2a	2b	2c
Measure type	Installed?	Not Installed	Why not installed?	Plan to install in Yr?	Current Status?
Renewables Measures					
Wind Turbine					
PV					
<b>Solar Heating</b>					
Geothermal					
Biogas					
Biomass					
Fuel Cell					
Other Renewables Measures					

#### **SEQUENCE VB: DIRECTED TO ALL CUSTOMERS.**

**VB1.** What kinds of assistance and support did you receive from &SPONSOR's program in completing the project at &SERV\_ADDR? [DO NOT READ, MARK ALL THAT APPLY. PROMPT IF NEEDED.]

Financial grant or rebate for measures installed	1	[GO TO VB2]
Subsidy for design or engineering work	2	[GO TO VB2]
Reduced interest loan or loan interest subsidy	3	[GO TO VB2]
Loan guarantee	4	[GO TO VB2]
Assistance in entering into performance contracts	5	[GO TO VB3]
Energy audit or other technical assistance in identifying & characterizing	6	[GO TO VB3]
opportunities		
Referrals to qualified vendors	7	[GO TO VB3]
General information on energy efficiency opportunities	8	[GO TO VB3]
Other (Specify in enough detail to understand the support received to use in	9	[GO TO VB3]
attribution analysis)		
[Don't know]	97	[GO TO VB3]
[Refused]	98	[GO TO VB3]

## [IF VB1 INCLUDES 1, 2, 3, OR 4 ASK VB2, ELSE VB3]

**VB2.** What was the amount of the incentive, subsidy, or loan provided by the program? Your best approximation will be fine.

[RECORD AMOUNT]	\$	[GO TO VB3]
[Don't know]	-97	[GO TO VB3]
[Refused]	-98	[GO TO VB3]

**VB3.** And, what was the total overall cost of the project supported by &PROGRAM including equipment and labor *before* any incentives or subsidies were applied? Again, your best approximation will be fine

[RECORD AMOUNT]	\$	[GO TO VB4]
[Don't know]	-97	[GO TO VB4]
[Refused]	-98	[GO TO VB4]

#### [IF MULTIPLE MEASURES INSTALLED ASK VB4 THROUGH VB6, ELSE NEXT SECTION.]

**VB4.** Can you recall how these costs were allocated among the different measures installed?

[Yes]	1	[GO TO VB5]
[No]	2	[GO TO NEXT SECTION]
[Don't know]	-97	[GO TO NEXT SECTION]
[Refused]	-98	[GO TO NEXT SECTION]

**VB5.** Can you tell me the cost of purchasing and installing &MEASURE [STARTING FROM FIRST IN GRID OR DATABASE]?

**VB6.** [IF RESPONDENT CANNOT PROVIDE A COST AMOUNT:] What percentage of the total overall costs of the project supported by &PROGRAM did &MEASURE\_TYPE account for?

	VB5	VB6
Measure type	Cost	% of Total
Wind Turbine		
PV		
<b>Solar Heating</b>		
Geothermal		
Biogas		
Fuel Cell		
Other Renewables Measures		

[RECORD VERIFIED MEASURES FOR MEASURE SPECIFIC QUESTIONS BELOW. RESPONDENTS WILL ONLY BE ASKED MEASURE SPECIFIC QUESTIONS FOR MEASURE GROUP IS CONFIRMED]

[&PV]
[&WIND]
[&SOLAR]
[&BIOMASS]
[&BIOGAS]
[&OTHER]

# PV SYSTEMS QUESTIONS

#### [IF &PV = TRUE]

In the next section we'll be discussing the photovoltaic project that received support from &SPONSOR &PROGRAM.

[IF MEASURE-LEVEL RECORDS ARE AVAILABLE ASK PV1a THROUGH PV2c. IF MEASURE-LEVEL RECORDS ARE NOT AVAILABLE, ASK PV3a THROUGH PV3c.]

**PV1a.** Our records indicate that your organization installed &PV\_NUM of &PV\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO PV1A FOR NEXT &PV_TECH]
[Did not install any of that technology]	2	[GO TO PV1A FOR NEXT &PV_TECH]
[Technology correct, number wrong]	3	[GO TO PV1num]
[Don't Know]	-97	[GO TO PV1A FOR NEXT &PV_TECH]
[Refused]	-98	[GO TO PV1A FOR NEXT &PV_TECH]

#### **PV1num.** What is the correct number of &PV\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO PV1c]
[Don't Know]	-97	[GO TO PV1A FOR NEXT &PV_TECH]
[Refused]	-98	[GO TO PV1A FOR NEXT &PV_TECH]

#### **PV1c.** Why did you install a different number of &PV\_TECH?

Have no idea why numbers differ	1	[GO TO PV1A FOR NEXT &PV_TECH]
Put some in storage	2	[GO TO PV1A FOR NEXT &PV_TECH]
Installed some at another facility	3	[GO TO PV1A FOR NEXT &PV_TECH]
Insufficient financial resources to complete		[GO TO PV1A FOR NEXT &PV_TECH]
full amount	4	
[Other, Specify]	5	[GO TO PV1A FOR NEXT &PV_TECH]
[Don't know]	-97	[GO TO PV1A FOR NEXT &PV_TECH]
[Refused]	-98	[GO TO PV1A FOR NEXT &PV_TECH]

# **PV2.** Our records indicate that your organization installed &PVINV\_NUM of &PVINV\_TECH through the &PROGRAM, is this correct?

[Vec installed that much oul	1	ICO TO DUDA FOR NEVT
[Yes, installed that number]	1	[GO TO PV2A FOR NEXT
		&PVINV_TECH]
[Did not install any of that technology]	2	[GO TO PV2A FOR NEXT
		&PVINV_TECH]
[Technology correct, number wrong]	3	[GO TO PV2num]
[Don't Know]	-97	[GO TO PV2A FOR NEXT
		&PVINV_TECH]
[Refused]	-98	[GO TO PV2A FOR NEXT
		&PVINV TECH]

## PV2a. What is the correct number of &PVINV\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO LI1c]
[Don't Know]	-97	[GO TO LI1A FOR NEXT &PV_TECH]
[Refused]	-98	[GO TO LI1A FOR NEXT &PV_TECH]

### PV3a. What is the manufacturer and model number of your PV modules?

#### PV3a1.

RECORD MANUFACTURER		[GO TO PV3a2]
[Don't Know]	-97	[GO TO PV3a2]
[Refused]	-98	[GO TO PV3a2]

#### PV3a2.

RECORD MODEL NUMBER		[GO TO PV3b]
[Don't Know]	-97	[GO TO PV3b]
[Refused]	-98	[GO TO PV3b]

#### **PV3b.** How many of that type of PV module have been installed through the &PROGRAM.

ENTER NUMBER		[GO TO PV3c]
[Don't Know]	-97	[GO TO PV3c]
[Refused]	-98	[GO TO PV3c]

### **PV3c.** Are there other types of PV modules installed through the &PROGRAM?

YES		[GO TO PV3a]
NO		[GO TO PV3d]
[Don't Know]	-97	[GO TO PV3d]
[Refused]	-98	[GO TO PV3d]

## **PV3d.** What is the manufacturer and model number of your PV inverter(s)?

#### PV3d1.

RECORD MANUFACTURER		[GO TO PV3d2]
[Don't Know]	-97	[GO TO PV3d2]
[Refused]	-98	[GO TO PV3d2]

#### PV3d2.

RECORD MODEL NUMBER		[GO TO PV3e]
[Don't Know]	-97	[GO TO PV3e]
[Refused]	-98	[GO TO PV3e]

## **PV3e.** How many of that type of inverter have been installed through the &PROGRAM.

ENTER NUMBER		[GO TO PV3f]
[Don't Know]	-97	[GO TO PV3f]
[Refused]	-98	[GO TO PV3f]

## **PV3f.** Are there other types of inverters installed through the &PROGRAM?

YES		[GO TO PV3d]
NO		[GO TO PV4]
[Don't Know]	-97	[GO TO PV4]
[Refused]	-98	[GO TO PV4]

## PV4. How many degrees from north are your panels facing?

## [ENTER NUMBER]

[DON'T KN	[OW]	€7
[REFUSED]		98

## **PV5.** Are your panels on an automatic tracking system?

[YES]	1
[NO]	[SKIP TO PV7] 2
[DON'T KNOW]	[SKIP TO PV7] -97
[REFUSED]	[SKIP TO PV7] -98

## **PV6.** Is your tracking system DUAL axis?

[YES]	1
[NO]	[SKIP TO PV7] 2
[DON'T KNOW]	9997
[REFUSED]	9998

**PV7.** Are your panels shaded at all during the year?

[YES]	
[NO]	[SKIP TO PV9] 2
[DON'T KNOW]	[SKIP TO PV9] -97
[REFUSED]	[SKIP TO PV9] -98

**PV8a.** Which months of the year are they shaded at least part of the day?

**PV8b.** For each month that they are shaded part of the day, what times of day are they shaded?

[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]

[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]

[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]

PV9.	-	ou modified the system since it was first installed? (ex: equipment changes such as replacing panels verter or additions, such as adding panels?)
	[YE	ES]
	[NO	[SKIP TO PV10] 2
	[D0	ON'T KNOW][SKIP TO PV10] -97
	[RE	[SKIP TO PV10] -98
		Was the modification an addition or an equipment replacement?  LE ALL THAT APPLY]
		[Addition][SKIP TO PV9b] 1
		[Replacement][SKIP TO PV9c] 2
		[DON'T KNOW][SKIP TO PV10] -97
		[REFUSED][SKIP TO PV10] -98
	PV9b.	What have you [added]?  [RECORD RESPONSE – note changes to capacity]
		[DON'T KNOW][SKIP TO PV10] -97
		[REFUSED][SKIP TO PV10] -98
	PV9c. V	What components of your system have required repair or replacement?
		[Inverter]1
		[One or more modules]2
		[Anything else]
	PV9d.	When did you make this change?
		[RECORD DATE]
		[DON'T KNOW]97
		[REFUSED]98
PV10.	When w	vas your PV system installed?
	[RECO	RD MONTH and YEAR]

PV10a.	. Did your system begin producing electricity on the date it was installed?
	[YES][SKIP TO PV11] 1
	[NO]2
	[DON'T KNOW][SKIP TO PV11] -97
	[REFUSED][SKIP TO PV11] -98
	<b>PV10b</b> When did it begin producing electricity?
	[RECORD PRODUCTION Month and Year (if possible get day)]
PV11.	Has there been any major down-time (more than a few days) in the system since installation?
	[YES]1
	[NO][SKIP TO PV12] 2
	[DON'T KNOW]97
	[REFUSED]98
	PV11a. When, and for how long [record as month:days (i.e. 03:7)]?
	[IF MORE THAN ONE, RECORD MOST SUBSTANTIAL PERIOD]
PV12.	Please tell me the total kWh production of the system since it started generating power.  [This is an important question. If the respondent cannot answer total kWh since inception, ask for current read-out from the inverter. Ask whether the reading has been reset recently. How often do they reset the cumulative kWh on the inverter? and date of reset]
PV12a	kWh [DON'T KNOW]97
	[REFUSED98
PV12b	RESET DATE

PV13.	What did you take this reading from? [READ CHOICES, CIRCLE ALL THAT APPI	L <b>Y</b> ]
	Read-out display on inverter?1	
	Separate utility meter for pv electricity?2	
	[Other]9996	
	[DON'T KNOW]9997	
	[REFUSED]9998	
	PV13a. [Describe OTHER]	
PV13b.	How do you track the output from the [renewable system—fill in type]?	
	[inverter]	
	[utility meter/net meter]	
	[reductions in my utility bill]	
	[other means: please describe4	
PV14c.	On a scale of 1-10, is the [renewable –insert type ] system achieving the savings you expe	cted?
PV14d.	Why/why not?	

# WIND SYSTEMS QUESTIONS

#### [IF &WIND = TRUE]

In the next section we'll be discussing the wind project that received support from &SPONSOR &PROGRAM.

[IF MEASURE-LEVEL RECORDS ARE AVAILABLE ASK W1a THROUGH W2b. IF MEASURE-LEVEL RECORDS ARE NOT AVAILABLE, ASK W3a THROUGH W3f.]

# **W1a.** Our records indicate that your organization installed &WIND\_NUM of &WIND\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO W1A FOR NEXT &W_TECH]
[Did not install any of that technology]	2	[GO TO W1A FOR NEXT &W_TECH]
[Technology correct, number wrong]	3	[GO TO W1num]
[Don't Know]	-97	[GO TO W1A FOR NEXT &W_TECH]
[Refused]	-98	[GO TO W1A FOR NEXT &W_TECH]

#### W1num. What is the correct number of &WIND\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO W1c]
[Don't Know]	-97	[GO TO W1A FOR NEXT &W_TECH]
[Refused]	-98	[GO TO W1A FOR NEXT &W_TECH]

## **W1c.** Why did you install a different number of &WIND\_TECH?

Have no idea why numbers differ	1	[GO TO W1A FOR NEXT &W_TECH]
Put some in storage	2	[GO TO W1A FOR NEXT &W_TECH]
Installed some at another facility	3	[GO TO W1A FOR NEXT &W_TECH]
Insufficient financial resources to complete		[GO TO W1A FOR NEXT &W_TECH]
full amount	4	
[Other, Specify]	5	[GO TO W1A FOR NEXT &W_TECH]
[Don't know]	-97	[GO TO W1A FOR NEXT &W_TECH]
[Refused]	-98	[GO TO W1A FOR NEXT &W_TECH]

# **W2.** Our records indicate that your organization installed &WINV\_NUM of &WINV\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO W2 FOR NEXT &WINV_TECH]
[Did not install any of that technology]	2	[GO TO W2 FOR NEXT &WINV_TECH]
[Technology correct, number wrong]	3	[GO TO W2a]
[Don't Know]	-97	[GO TO W2 FOR NEXT &WINV_TECH]
[Refused]	-98	[GO TO W2 FOR NEXT &WINV_TECH]

## W2a. What is the correct number of &WINV\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO W2b FOR NEXT &WINV_TECH]
[Don't Know]	-97	[GO TO W2 FOR NEXT &WINV_TECH]
[Refused]	-98	[GO TO W2 FOR NEXT &WINV_TECH]

<b>W2b.</b> What is the hub height of each turbine	W2b	.What	is	the	hub	height	of	each	turbine
--	-----	-------	----	-----	-----	--------	----	------	---------

RECORD CORRECT HEIGHT:	
[DON'T KNOW]	9997
[REFLISED]	-9998-

W3a. What is the manufacturer and model number of your turbines?

#### W3a1.

RECORD MANUFACTURER		[GO TO W3a2]
[Don't Know]	-97	[GO TO W3a2]
[Refused]	-98	[GO TO W3a2]

#### W3a2.

RECORD MODEL NUMBER		[GO TO W3b]
[Don't Know]	-97	[GO TO W3b]
[Refused]	-98	[GO TO W3b]

### **W3b.** How many of that type of turbines have been installed through the &PROGRAM.

ENTER NUMBER		[GO TO W3c]
[Don't Know]	-97	[GO TO W3c]
[Refused]	-98	[GO TO W3c]

### W3c. Are there other types of turbines installed through the &PROGRAM?

YES		[GO TO W3a]
NO		[GO TO W3d]
[Don't Know]	-97	[GO TO W3d]
[Refused]	-98	[GO TO W3d]

**W3d.** What is the manufacturer and model number of your inverter(s)?

#### W3d1.

RECORD MANUFACTURER		[GO TO W3d2]
[Don't Know]	-97	[GO TO W3d2]

[Refused]	-98	[GO TO W3d2]

#### W3d2.

RECORD MODEL NUMBER		[GO TO W3e]
[Don't Know]	-97	[GO TO W3e]
[Refused]	-98	[GO TO W3e]

**W3e.** How many of that type of inverter have been installed through the &PROGRAM.

ENTER NUMBER		[GO TO W3f]
[Don't Know]	-97	[GO TO W3f]
[Refused]	-98	[GO TO W3f]

W3f. Are there other types of inverters installed through the &PROGRAM?

YES		[GO TO W3d]
NO		[GO TO W4]
[Don't Know]	-97	[GO TO W4]
[Refused]	-98	[GO TO W4]

**W4.** Have you modified the system since it was first installed? (ex: equipment changes such as a new turbine or inverter?)

[YES]	1
[NO]	[SKIP TO W5] 2
[DON'T KNOW]	[SKIP TO W5] -97
[REFUSED]	[SKIP TO W5] -98

W4a. Was the modification an addition or equipment replacement? [ALL THAT APPLY]

# **W4b.** What have you [added]? [RECORD RESPONSE – note changes to capacity] [DON'T KNOW].....[SKIP TO W5] -97 [REFUSED].....[SKIP TO W5] -98 **W4c.** What components of your system have required repair or replacement? [Inverter]......1 [Anything else]......3 W4d. When did you make this change? [RECORD DATE] [DON'T KNOW].....[SKIP TO W5] -97 [REFUSED].....[SKIP TO W5] -98 W5. When was your wind turbine installed? [RECORD MONTH and YEAR if possible get Day] **W5a.** Did the turbine begin producing power on the date it was installed? [YES]......1 [NO].....[RECORD DATE] 2 [DON'T KNOW].....-97 [REFUSED].....-98

[YES]1						
[NO][SKIP TO W	<b>7]</b> 2					
[DON'T KNOW][SKIP TO W7]	-97					
[REFUSED][SKIP TO W7]	-98					
<b>W6a</b> – When, and for how long [(record as month:days (i.e. 03:7)]?						
Please tell me the total kWh production of the system since it started generating pov						
[This is an important question. If the respondent cannot answer total kWh since current read-out from the inverter. Ask whether the reading has been reset reaches they reset the cumulative kWh on the inverter? and date of reset]	* · · · · · · · · · · · · · · · · · · ·					
<b>W7a.</b> kWh						
[DON'T KNOW]	97					
[REFUSED	98					
W7b. RESET DATE	_					
Did you make this reading from a ? [READ CHOICES, CIRCLE ALL THA	T APPLY]					
Read-out display on inverter?	1					
Separate utility meter for wind system?	2					
Reductions in my utility bill	3					
[Other]	77					
[DON'T KNOW]	97					
[REFUSED]	98					

# SOLAR HOT WATER QUESTIONS

### [IF &SHW = TRUE]

In the next section we'll be discussing the solar hot water project that received support from &SPONSOR &PROGRAM.

[IF MEASURE-LEVEL RECORDS ARE AVAILABLE ASK SHW1a THROUGH SHW1c. IF MEASURE-LEVEL RECORDS ARE NOT AVAILABLE, ASK SHW3 THROUGH SHW3c.]

**SHW1a.**Our records indicate that your organization installed &SHW\_NUM of &SHW\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO SHW1A FOR NEXT &SHW_TECH]
[Did not install any of that technology]	2	[GO TO SHW1A FOR NEXT
[Technology correct, number wrong]	3	&SHW_TECH] [GO TO SHW1num]
[Don't Know]	-97	[GO TO SHW1A FOR NEXT &SHW TECH]
[Refused]	-98	[GO TO SHW1A FOR NEXT &SHW_TECH]

## **SHW1num.** What is the correct number of &SHW\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO SHW1c]
[Don't Know]	-97	[GO TO SHW1A FOR NEXT
		&SHW_TECH]
[Refused]	-98	[GO TO SHW1A FOR NEXT
		&SHW_TECH]

#### **SHW1c.** Why did you install a different number of &SHW\_TECH?

Have no idea why numbers differ		[GO TO SHW1A FOR NEXT &SHW_TECH]
Put some in storage	2	[GO TO SHW1A FOR NEXT &SHW_TECH]
Installed some at another facility	3	[GO TO SHW1A FOR NEXT &SHW_TECH]
Insufficient financial resources to complete		[GO TO SHW1A FOR NEXT &SHW_TECH]
full amount	4	
[Other, Specify]	5	[GO TO SHW1A FOR NEXT &SHW_TECH]
[Don't know]	-97	[GO TO SHW1A FOR NEXT &SHW_TECH]
[Refused]	-98	[GO TO SHW1A FOR NEXT &SHW_TECH]

 $\textbf{SHW2a.} \ \ \textbf{What is the manufacturer and model number of your solar hot water module?}$ 

#### SHW2a1.

RECORD MANUFACTURER		[GO TO SHW2a2]
[Don't Know]	-97	[GO TO SHW2a2]
[Refused]	-98	[GO TO SHW2a2]

## SHW2a2.

RECORD MODEL NUMBER		[GO TO SHW2b]
[Don't Know]	-97	[GO TO SHW2b]
[Refused]	-98	[GO TO SHW2b]

## **SHW2b.** How many of that type of solar hot water module have been installed through the &PROGRAM.

ENTER NUMBER		[GO TO SHW2c]
[Don't Know]	-97	[GO TO SHW2c]
[Refused]	-98	[GO TO SHW2c]

## SHW2c. Are there other types of solar hot water modules installed through the &PROGRAM?

YES		[GO TO SHW2a]
NO		[GO TO SHW2d]
[Don't Know]	-97	[GO TO SHW2d]
[Refused]	-98	[GO TO SHW2d]

SHW3a.	How many tanks are heated using the system funded through &PROGRAM?
	SHW3a1. [Number of Tanks]
SHW3b.	What is the capacity of each of these tanks?
	SHW3b2. [Capacity#1]
	SHW3b3. [Capacity #2]
	SHW3b4. [Capacity#3]
SHW3c.Do	you use the system to heat one or more swimming pools?
	[YES][ASK SHW3c1] 1
	[NO][SKIP TO SHW4] 2
	[DON'T KNOW][SKIP TO SHW4] -97
	[REFUSED][SKIP TO SHW4] -98
	SHW2c1 [NUMBED OF BOOLS] & N. BOOL

## [FOR EACH &N\_POOL ASK 3D]

SHW3d. [Capacity #n]	_
SHW3d1. Is this pool	
[Indoor]	1
[Outdoor above ground]	2
[Outdoor in ground]	3
[DON'T KNOW]	-97
[REFUSED]	-98
SHW3e. [Capacity #2]	_
SHW3e1. Is this pool	
[Indoor]	1
[Outdoor above ground]	2
[Outdoor in ground]	3
[DON'T KNOW]	-97
[REFUSED]	-98
SHW3f. [Capacity#3]	_

	SHW3f1. Is this pool
	[Indoor]1
	[Outdoor above ground]2
	[Outdoor in ground]3
	[DON'T KNOW]9997
	[REFUSED]9998
SHW4.	How many degrees from north do your panels face?
	[ENTER CORRECT DEGREES FROM NORTH]
	DON'T KNOW][SKIP TO SHW5] -97
	[REFUSED][SKIP TO SHW5] -98
SHW5.	What is your tilt angle was [ANGLE] when it was installed?
	[ENTER CORRECT TILT ANGLE]
	[DON'T KNOW][SKIP TO SHW6] -97
	[REFUSED][SKIP TO SHW6] -98
SHW6.	Are your panels shaded at all during the year?
	[YES]1
	[NO][SKIP TO SHW7] 2
	[DON'T KNOW][SKIP TO SHW7] -97
	[REFUSED][SKIP TO SHW7] -98
	<b>SHW6a</b> .When are they shaded [probe for time of year (e.g. May to August), time of day (e.g. noon to 3PM), percent shaded]?
	[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]
	[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]
	[RECORD MONTH, TIME OF DAY AND PERCENT SHADED]
SHW6b.	Most solar hot water systems have a pump that circulates water within the panels. What is the manufacturer and model number of your system's pump?
	SHW6b. [ENTER MANUFACTURER FROM DROP DOWN]
	SHW6c. ENTER MODEL FROM DROP DOWN]

SHW6d.	How is your pump powered? D pump run off your regular elect	id you install a small solar electric panel to power the pump, does the ricity, or something else?
	[PV]	[SKIP TO SHW7] 1
	[Plug in]	[SKIP TO SHW7] 2
	[Other]	3
	[DON'T KNOW]	[SKIP TO SHW7] -97
	[REFUSED]	[SKIP TO SHW7] -98
	SHW6e. [ENTER POWE	ER SOURCE]
SHW7.	Have you modified the system adding panels?)	since it was first installed? (ex: equipment changes such as replacing or
	[YES]	1
	[NO	[SKIP TO SHW8] 2
	[DON'T KNOW]	[SKIP TO SHW8] -97
	[REFUSED]	[SKIP TO SHW8] -98
	[CIRCLE ALL THAT APPL	an addition or equipment replacement?  Y]1
	[Replacement]	2
	[DON'T KNOW]	[SKIP TO SHW8] -9997
	[REFUSED]	[SKIP TO SHW8] -9998

	HW7b. What have you [added/replaced]?
	[RECORD RESPONSE – note changes to capacity]
	[DON'T KNOW][SKIP TO SHW8] -9997
	[REFUSED][SKIP TO SHW8] -9998
	SHW7c. When did you make this change?
	[RECORD DATE]
	[DON'T KNOW]9997
	[REFUSED]9998
SHW8.	What is the temperature of your hot water?
	[ENTER TEMPERATURE]
	[DON'T KNOW]9997
	[REFUSED]9998
SHW9a.	About how much hot water do you use per month? (If they don't know that ask how much water they use per month).
	[ENTER HOT WATER USAGE – SKIP TO SHW10]
	[DON'T KNOW][SKIP TO SHW9c] -97
	[REFUSED][SKIP TO SHW9c] -9998
	SHW9b. What is this estimate based on? [RECORD RESPONSE]

[SKIP to SHW9i if not Nursing Home. A nursing home is similar to a multifamily facility, but usually has a central kitchen service]

SHW9b.	[Nursing Home] How many residents are in the building?	
	[ENTER NUMBER OF RESIDENTS – SKIP TO SHW10]	
	[DON'T KNOW][SKIP TO SHW10] -97	
	[REFUSED][SKIP TO SHW10] -98	
SHW9c.	[Non-Residential] What type of facility is this?	
	[Laundry]1	
	[Restaurant]2	
	[Hospital]3	
	[Other]4	
	[DON'T KNOW]97	
	[REFUSED]98	
SHW10.	Is your system used year round?	
	[YES][SKIP TO SHW12] 1	
	[NO]2	
	[DON'T KNOW][SKIP TO SHW12] -97	
	[REFUSED][SKIP TO SHW12] -98	
SHW11.	In what months is it used?	
	[ENTER MONTHS]	
	[DON'T KNOW]9997	
	[REFUSED]9998	

# OMB Control No. XXXXXXXX

SHW12.	<b>12.</b> What is your supplemental source for hot water heating?		
	[GAS]1		
	[OIL]2		
	[ELECTRIC]3		
	[OTHER]9996		
	[DON'T KNOW]9997		
	[REFUSED]9998		
	SHW12a. [DESCRIBE OTHER]		

# BIOMASS QUESTIONS

#### [IF &BM = TRUE]

I am going to discuss some technical information about the system in order to confirm our information regarding your system. The paperwork from the original site survey, design study, or installation may help you answer these questions.

[If they do not have this information handy, attempt the questions anyway, and ask them to give their best estimate. If they don't know or refuse to answer a confirmation question, mark "-9997" or "-9998" in parentheses and we will assume the paperwork is correct].

**BM1.** I am first interested in learning more about the type of biomass system you have. What type of fuel do you use?

Wood logs	1	
Wood chips	2	
Biomass pellets	3	
Corn pellets	4	
[Other, Specify]	5	
[Don't know]	-97	
[Refused]	-98	

#### **BM2**. What do you use this biomass system to do?

Space heating	1	
Water Heating	2	
[Other, Specify]	3	
[Don't know]	-97	
[Refused]	-98	

#### **BM3.** How do you describe the biomass system you use? Is it a:

Pellet stove or furnace	1	
Wood chip boiler or furnace	2	
Logwood boiler	3	
Biomass/wood furnace	4	
Wood stove/heater	5	
Other	6	
Don't know	-97	
Refused	-98	

[IF MEASURE-LEVEL RECORDS ARE AVAILABLE ASK BM4a THROUGH BM5b. IF MEASURE-LEVEL RECORDS ARE NOT AVAILABLE, ASK BM6a THROUGH BM6f.]

**BM4a.** Our records indicate that your organization installed &BM\_NUM of &BM\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO BM4A FOR NEXT &BM_TECH]
[Did not install any of that technology]	2	[GO TO BM4A FOR NEXT &BM_TECH]
[Technology correct, number wrong]	3	[GO TO BM4num]
[Don't Know]	-97	[GO TO BM4A FOR NEXT &BM_TECH]
[Refused]	-98	[GO TO BM4A FOR NEXT &BM_TECH]

## BM4num. What is the correct number of &BM\_TECH that you installed through the &PROGRAM?

ENTER NUMBER		[GO TO BM4c]
[Don't Know]	-97	[GO TO BM4A FOR NEXT &W_TECH]
[Refused]	-98	[GO TO BM4A FOR NEXT &W_TECH]

## **BM4c.** Why did you install a different number of &BM\_TECH?

Have no idea why numbers differ	1	[GO TO BM4A FOR NEXT &W_TECH]
Put some in storage	2	[GO TO BM4A FOR NEXT &W_TECH]
Installed some at another facility	3	[GO TO BM4A FOR NEXT &W_TECH]
Insufficient financial resources to complete		[GO TO BM4A FOR NEXT &W_TECH]
full amount	4	
[Other, Specify]	5	[GO TO BM4A FOR NEXT &W_TECH]
[Don't know]	-97	[GO TO BM4A FOR NEXT &W_TECH]
[Refused]	-98	[GO TO BM4A FOR NEXT &W_TECH]

## **BM5.** What type of back-up fuel do you use for your [furnace/boiler].

Natural Gas	1
Electricity	2
Oil	3
Other, Specify]	4
Refused	-97
Don't know	-98

BM6.	What percent of your fuel do you get from the following sources?			
	By products from another process produced on-site	1		
	Purchased from vendor	2		
	Some other source [specify:]	3		
	[DON'T KNOW]	[SKIP TO BM7] -97		
	[REFUSED]	[SKIP TO BM7] -98		
[IF 100%	% of fuel produced onsite skip to BM4]			
BM6a.	Who is the [supplier/manufacturer] of the fuel you purchase?			
	[Supplier 1]			
	[Supplier 2]			
BM7.	What is your annual biomass fuel usage?			
	BM7a. [ENTER ANNUAL USAGE]			
	BM7b. [ENTER UNITS (e.g. tons, btuh)]			
	[DON'T KNOW]	97		
	[REFUSED]	98		
BM8.	[SKIP TO BM11 IF FUEL IS not WOOD] What species of	wood do you burn?		
	[[SPECIES]_			
	[Primarily (over 90%) Hardwood (oak, maple)			
	[Primarily (over 90%) softwood (pines; alders? )			
	[mix of both			
	[DON'T KNOW]	97		
	[REFUSED]	98		

BM9.	Do you dry the [fuel] at all before using it?	
	[YES]	1
	[NO]	2
	[DON'T KNOW]	[SKIP TO BM10] -97
	[REFUSED]	[SKIP TO BM10] -98
BM10.	Do you know the moisture content of the fuel when	burned?
	[YES]	SKIP TO BM10a 1
	[NO]	SKIP TO BM10b 2
	[DON'T KNOW]	[SKIP TO BM11] -97
	[REFUSED]	[SKIP TO BM11] -98
BM10a.	. What is the moisture content of the fuel when burned?	
	MOISTURE CONTENT	
BM10b.	. If you harvest the wood you burn, how long do you le	it dry before burning?
	[less than 6 months (consider this wood has mo	isture content of 50-30%)
	[6-12 months (fully dry wood (unless kiln dried	) probably has a moisture content of around 20%. )
	[DON'T KNOW]	97
	[REFUSED]	98

BM11. How much energy do you use to dry the fuel? [RECORD ENERGY (kWh/month)]\_\_\_\_ [DON'T KNOW].....-997 [REFUSED].....-98 **BM11a**. How did you estimate this? [RECORD ANSWER VERBATIM IF POSSIBLE]? [DON'T KNOW].....-97 [REFUSED].....-98 **BM12**. Is there any electrical or mechanical device that assists in feeding fuel to your system? [DON'T KNOW].....-97 [REFUSED].....-98 **BM12a** How do you feed the fuel into the biomass system? [Ex: conveyor, chute, shovels] [RECORD ANSWER VERBATIM IF POSSIBLE]? [DON'T KNOW].....-97 [REFUSED].....-98 BM12b. Considering all the devices powered to operate your biomass system, How much power would you estimate is used by the feed system? [RECORD ANSWER] \_\_\_\_\_ kWh per month [DON'T KNOW].....-9997 [REFUSED].....-9998 **BM12c.** How did you estimate this? [If they don't have metered data to support kWh then try to get the following: 1) kW rating of fuel system, 2) Hours/day or Hours/month that system is operating] [RECORD ANSWER VERBATIM IF POSSIBLE]? [DON'T KNOW]....-9997 [REFUSED].....-9998

BM13. Is there an air circulation system for this biomass system?

[YES]		1
[NO]		[SKIP TO BM14] 2
[DON'T KNO	DW]	97
[REFUSED].		98
	g all the devices powered to circulate stem? [RECORD ANSWER]	air, how much power would you estimate is used kWh per month
[DO	N'T KNOW]	9997
[REI	FUSED]	9998
_	<del>-</del>	netered data to support kWh then try to get the urs/day or Hours/month that system is operating]
[RE	CORD ANSWER VERBATIM IF I	POSSIBLE]?
[DO	N'T KNOW]	9997
[REI	FUSED]	9998
<b>BM14.</b> Is there a water circul	ation system for this biomass system?	?
[YES]		1
[NO]		[SKIP TO BM14] 2
[DON'T KNO	DW]	97
[REFUSED].		98
	g all the devices powered to circulate on system? [RECORD ANSWER] _	water, how much power would you estimate is kWh per month
[DO	N'T KNOW]	9997
[REI	FUSED]	9998
-		netered data to support kWh then try to get the urs/day or Hours/month that system is operating]
[RE	CORD ANSWER VERBATIM IF I	POSSIBLE]?
[DO	N'T KNOW]	9997
[REI	FUSED]	9998

## **BIOGAS QUESTIONS**

## [IF &MEASURE = BIOGAS]

I am going to discuss some technical information about the system in order to confirm our information regarding your system. The paperwork from the original site survey, design study, or installation may help you answer these questions.

BG1.	What is the manufacturer and model number of the generator run by the biogas?
	BG1a. [ENTER MANUFACTURER FROM DROP DOWN]
	BG1b. [ENTER MODEL FORM DROP DOWN]
BG2.	Do you use [Waste] for your biodigester?
	[YES][SKIP TO BG3] 1
	[NO]2
	[DON'T KNOW][SKIP TO BG3] -97
	[REFUSED][SKIP TO BG3] -98
	BG2a.Waste Type
BG3.	Do you add any other substrates to the waste stream?
	[YES]1
	[NO][SKIP TO BG4] 2
	[DON'T KNOW][SKIP TO BG4] -97
	[REFUSED][SKIP TO BG4] -98
	<b>Bg3a.</b> Added Substrates type
	<b>BG3b.</b> Quantity of Added Substrate
BG4.	Have you made any modifications to the system since installation?
	[YES]1
	[NO][SKIP TO BG5] 2
	[DON'T KNOW][SKIP TO BG5] -97
	[REFUSED][SKIP TO BG5] -98

<b>BG4a.</b> Was the modification an addition or equipment replacement? [CIRCLE ALL THAT APPLY]
[Addition]1
[Replacement]2
[DON'T KNOW][SKIP TO BG5] -97
[REFUSED][SKIP TO BG5] -98
BG4b. What have you [added/replaced]?
[DON'T KNOW][SKIP TO BG5] -97
[REFUSED][SKIP TO BG5] -98
<b>BG4c.</b> When did you make this change?
[RECORD DATE]
[DON'T KNOW]9997
[REFUSED]9998
[FOR NON-AG SYSTEMS, SKIP TO BG6] Do you have any livestock providing waste for the system? Is this correct?
[YES]1
[NO][SKIP TO BG6] 2
[DON'T KNOW][SKIP TO BG6] -97
[REFUSED][SKIP TO BG6] -98
<b>BG5b</b> . What type(s) of livestock <b>[ENTER FROM DROP DOWN]</b>
BG5c. FOR EACH TYPE LISTED ASK: How many &TYPE [ENTER NUMBER]_

BG5.

Does the biogas system produce the same amount of energy steadily over the course of a year, or are there seasonal differences in energy production?						
YEA	R-ROUND	[SKIP TO BG7] 1				
SEAS	SONAL	[SKIP TO BG6b] 1				
OTH	ER	[SKIP TO BG6a] 77 [SKIP TO BG7] -97 [SKIP TO BG7] -98				
[DON	N'T KNOW]					
[REF	USED]					

BG7.	Which of the following ways are you using the gas produced by the digester system - are you using it on site in a genset, burning it on site for heat, flaring it, or selling it off site? [ACCEPT MULTIPLE ANSWERS]					
	Using it on site in a genset1					
	Burning it on site for heat2					
	Flaring it on site					
	Selling it off site4					
	[DON'T KNOW]97					
	[REFUSED]98					
	<b>BG7a</b> . What percentage of the gas are you					
	Using onsite in the genset?					
	Using onsite for heating?					
	Flaring onsite?					
	Selling off site?					
	[DON'T KNOW]97					
	[REFUSED]98					
BG8.	Has there been any unscheduled downtime in the biodigester system?					
	[YES]1					
	[NO][SKIP TO BG9] 2					
	[DON'T KNOW][SKIP TO BG9] -97					
	[REFUSED][SKIP TO BG9] -98					
	<b>BG8a.</b> How long was the system down unexpectedly?[record as month:days (i.e. 03:7)]					
BG9.	[SKIP TO BG13 IF NONE USED IN THE GENSET] What date did you started running the genset?					
	[BEGINNING GENERATION DATE]					

BG10.	Has there been any unscheduled downtime in the genset system?
	[YES]1
	[NO][SKIP TO BG11] 2
	[DON'T KNOW][SKIP TO BG11] -97
	[REFUSED][SKIP TO BG11] -98
	<b>BG10a.</b> How long was the system down unexpectedly?[record as month:days (i.e. 03:7)]
BG11.	Please tell me the total kWh production of the system since it started generating power.
	[This is an important question. If the respondent cannot answer total kWh since inception, ask for current read-out and date of reset]
	BG11a kWh
	[DON'T KNOW]9997
	[REFUSED9998
	REFUSED9998  BG11b RESET DATE
BG12.	
BG12.	BG11b RESET DATE
BG12.	BG11b RESET DATE  Did you make this reading from a ? [READ CHOICES, CIRCLE ALL THAT APPLY]
BG12.	BG11b RESET DATE
BG12.	BG11b RESET DATE

#### OTHER EQUIPMENT BATTERY

[IF & OTHER = TRUE]

[IF MEASURE-LEVEL RECORDS ARE AVAILABLE ASK OE1a THRU OE1c. IF MEASURE-LEVEL RECORDS ARE NOT AVAILABLE, ASK OE2a THRU OE2c.]

#### [REPEAT OE1a THRU OE1c. FOR EACH &OE\_TECH IN THE TRACKING DATA.]

**OE1a.** Our records indicate that your organization installed &OE\_NUM of &OE\_TECH through the &PROGRAM, is this correct?

[Yes, installed that number]	1	[GO TO OE1a FOR NEXT &OE_TECH]
[Did not install any of that technology]	2	[GO TO OE1a FOR NEXT &OE_TECH]
[Technology correct, number wrong]	3	[GO TO OE1b]
Refused]	-98	[GO TO OE1a FOR NEXT &OE_TECH]
[Don't Know]	-97	[GO TO OE1a FOR NEXT &OE_TECH]

**OE1b.** What is the correct number of &OE\_TECH that you installed through the &PROGRAM?

[ENTER NUMBER]		[GO TO OE1c]
[Don't know]	-97	[GO TO OE1c]
[Refused]	-98	[GO TO OE1c]

**OE1c.** Why did you install a different number of &OE\_TECH? [ACCEPT MULTIPLE ANSWERS]

Have no idea why numbers differ	1	[GO TO OE1a FOR NEXT &OE_TECH]
Put some in storage	2	[GO TO OE1a FOR NEXT &OE_TECH]
Installed at another facility	3	[GO TO OE1a FOR NEXT &OE_TECH]
Funding insufficient to complete full amount	4	[GO TO OE1a FOR NEXT &OE_TECH]
Other	77	[GO TO OE1a FOR NEXT &OE_TECH]
Refused	-98	[GO TO OE1a FOR NEXT &OE_TECH]
Don't know	-97	[GO TO OE1a FOR NEXT &OE_TECH]

# [ONCE CORRECTIONS RECORDED THEN ASK OE2d FOR EACH CORRECTED TECHNOLOGY; ELSE GO TO OE3]

[IF MEASURE-LEVEL DATA ARE NOT AVAILABLE, ASK OE2a THRU OE2c.]

**OE2a.** Did you install any other kinds of renewable energy technologies through the program?

Yes	1	[GO TO OE2b]
No	2	[GO TO NEXT SECTION]
[Refused]	-98	[GO TO NEXT SECTION]
[Don't Know]	-97	[GO TO NEXT SECTION]

- **OE2b.** Which kinds of additional measures did you install through the program?
- **OE2c. [FOR EACH MEASURE TYPE MENTIONED.]** Approximately how many &OE\_TECH were purchased using the &SPONSOR &Program funding?
- **OE2d.** Approximately what percentage of your facility's total square footage was served by these purchases?
- **OE2e.** How many of the &OE\_TECH purchased using the &SPONSOR &PROGRAM funding were used to replace existing &OE\_TECH units?

#### **RESPONSE GRID FOR OE1 AND OE2**

	OE_TECH	OE1a Tracking Verified?	OE1b Corrected # Install	OE1c Reason for Diff	OE2a/b Untracked Tech Inst	OE2c Untracked # Install	OE2d % Space Served	OE2e # replacing existing construction
1	Specify:							
2	Specify:							
3	Specify:							
4	Specify:							
5	Specify:							
6	Specify:							

**OE3**. Please tell me the total energy production of the system since it started generating power.

[This is an important question. If the respondent cannot answer total kWh since inception, ask for current read-out. Ask whether the reading has been reset recently. How often do they reset the cumulative? and date of reset]

OE3a. Energy	
[DON'T KNOW]	97
[REFUSED	98
OEb.	
kWh	1
Therms	2
[DON'T KNOW]	97
[REFUSED	98
OE- DECET DATE	

## **OE4.** Did you make this reading from a . . ? [READ CHOICES, CIRCLE ALL THAT APPLY]

Read-out display on inverter?1	
Separate utility meter?	
Reductions in my utility bill	
Other]	
DON'T KNOW]97	
REFUSED]98	

١

## DIRECT ATTRIBUTION

Now, I'd like to ask you a few questions about the effect that the &PROGRAM had on your organization's decision to undertake the project we have been discussing.

#### OVERALL INFLUENCE

[FOR EACH MEASURE GROUP COVERED ABOVE REPEAT DA0 THROUGH DA]

**DA0.** Without the &SPONSOR &PROGRM, would you say the likelihood of [installing / performing] the &MEASURE was... [READ LIST]

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
Very likely	1	1	1	1
Somewhat likely	2	2	2	2
Not very likely	3	3	3	3
Or very unlikely	4	4	4	4

[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

#### TIMING

# ASK TIMING QUESTIONS ONLY FOR MEASURES WHERE DAT0 = 1 OR 2 (VERY LIKELY OR SOMEWHAT LIKELY TO HAVE IMPLEMENTED IN THE ABSENCE OF THE PROGRAM.

AT1. I'd like to know about the effect, if any, that &PROGRAM had on the timing of your project. Without the support from the &PROGRAM, would you have implemented &MEASURE at the same time as you actually did through the project, earlier than you did, later than you did ... or would you not have installed the measure at all in the absence of the program?

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
Same time	1	1	1	1
Earlier	2	2	2	2
Later	3	3	3	3
Would never have	4	4	4	4
installed				
[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

#### [IF DAT1a ≠ LATER, SKIP TO AT2a]

**AT1b.** Approximately how many months later?

[Try to get a number. Try bracketing if necessary by beginning with more or less than four years later.]

	DAT1b_&MEASURE
[RECORD # OF MONTHS]	
[Don't know]	-97

#### **EFFICIENCY**

This section applies for any measure where there is a standard efficiency option. For example, variable frequency drives do not have a "standard efficiency" option, so you should skip this section for VFDs even though installing a VFD will result in energy savings. Heat recovery, lighting controls, and steam trap replacement also fall into this category. Circle "5" not applicable for the measure in the table below and skip to DAT3.

ASK EFFICIENCY QUESTIONS ONLY FOR MEASURES WHERE DAT0 = 1 OR 2 (VERY LIKELY OR SOMEWHAT LIKELY TO HAVE IMPLEMENTED IN THE ABSENCE OF THE PROGRAM.

**AE1.** Without the &PROGRAM would you have installed &MEASURE of the exact same energy efficiency as t the equipment you installed you installed, or would you have installed lower efficiency, or higher efficiency equipent?

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
Same	1	1	1	1
Lower	2 [ASK AE2b]	2 [ASK AE2b]	2 [ASK AE2b]	2 [ASK AE2b]
Higher	3	3	3	3
[Not applicable]	-88	-88	-88	-88
[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

AE1a. Why do you say that? [RECORD VERBATIM]:

[IF AE1 ≠ LOWER, SKIP TO AQ1.]

**AE2**. Without the support of the program , would you have installed <measure> that was:

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
Standard efficiency or according to code	1	1	1	1
Slightly higher than standard efficiency	2	2	2	2
Between standard efficiency and the efficiency that was installed	3	3	3	3
Slightly lower than the high efficiency that was installed	4	4	4	4
[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

## QUANTITY

ASK QUANTITY QUESTIONS ONLY FOR MEASURES WHERE DAT0 = 1 OR 2 (VERY LIKELY OR SOMEWHAT LIKELY TO HAVE IMPLEMENTED IN THE ABSENCE OF THE PROGRAM.

Finally, I'd like to know about the effect, if any, that your participation in the &PROGRAM had on the scale of the project you completed with the support of the program.

**AQ1.** Without the support from &SPONSOR &PROGRAM would you have installed more or/a larger sized <measure>, less, about the same amount, or would you not have installed any quantity of the measure at all?

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
Same amount	1	1	1	1
Less or smaller	2	2	2	2
	Read AQ3a	Read AQ3a	Read AQ3a	Read AQ3a
More or larger	3	3	3	3
	Read AQ3a	Read AQ3a	Read AQ3a	Read AQ3a
Would not have installed any	4	4	4	4
[Not Applicable]	5	5	5	5
[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

AQ3_O.	Why do you say that? [RECORD VERBATIM]
. –	

[IF AQ3 = SAME or NOT INSTALLED ANY, SKIP TO OP1.]

**AQ3a.** By what percentage do you think you increased or decreased the amount of <&MEASURE installed because of the &SPONSOR &PROGRAM?

Calculate percent: abs([(amount installed) / (amount would have installed)] - 100%)

The response can be greater or less than 100 percent. Two examples:

- Example 1. Organization installed 8, but would have installed 2 without the program. Change is 300 percent.
- Example 2. Organization installed 4, would have installed 3 without the program. Change is 33 percent.

Record a positive % even if they decreased the amount that they installed.

- Example 3. Organization installed 8 but would have installed 10 w/out the program. Change is 20 percent.
- Example 4. Organization installed 4 but would have installed 6 without the program. Change is 33 percent.

RESPONSE	DAT0_MID1	DAT0_MID2	DAT0_MID3	DAT0_MID4
[RECORD %]				
	%	%	%	%
Don't know	-97	-97	-97	-97
Refused	-98	-98	-98	-98

## EFFECT OF OTHER PROGRAMS

OP1 In completing the project[s] supported by [NAME OF SEP PA], did you make use of financial or technical support programs offered by other sponsors, such as, local utilities, industry associations, or government agencies? For this question we are not interested in commercial offers such as rebate and incentive packages from manufacturers, vendors, or retailers.

[YES]	1	[ASK OP2]
[NO]	2	[GO TO BC1]
[DON'T KNOW]	-97	[GO TO BC1]
[REFUSED]	-98	[GO TO BC1]

OP2.	Which organization[s] sponsored the [those] program[s]?
[RECO	RD RESPONSE]
IF ONL	LY ORGANIZATIONS MENTIONED ARE MANUFACTURERS, DISTRIBUTORS,
CONT	RACTORS, OR ENGINEERS, SKIP TO SKIP TO BC1.

**OP3.** What kinds of services did you receive from those programs in support of the project?

Information to guide project planning and equipment selection	1	[GO TO OP5]
Technical training on the design and installation of the	2	[GO TO OP5]
project		
Technical assistance such as feasibility assessments,	3	[GO TO OP5]
financial analyses, and design support		
Identification of qualified contractors	4	[GO TO OP5]
Financial incentives: grants, rebates, others that do not	5	[ASK OP4]
need to be repaid		
Financial incentives: reduced interest loans, loan	6	[ASK OP4]
guarantees, leases, etc.		
Support for negotiation and contracting with vendors	7	[GO TO OP5]
Inspections of completed work for quality control	8	[GO TO OP5]
Other (Specify)	9	[GO TO OP5]
Don't know	-97	[GO TO OP5]
Refused	-98	[GO TO OP5]

**OP4** What percent of the total funding for the energy efficiency project we have been discussing did you receive from the programs other than &PROGRAM? Your best estimate will be fine?

ENTER PERCENT		[GO TO OP5]
[DON'T KNOW]	97	[GO TO OP4a]
[REFUSED]	98	[GO TO OP4a]

**OP4a** Would you say that the amount of the incentive[s] you received from the other programs you have mentioned was much larger, somewhat larger, much smaller, somewhat smaller, or about the same as the amount you received from &PROGRAM?

[MUCH LARGER]	1	[GO TO OP5]
[SOMEWHAT LARGER]	2	[GO TO OP5]
[MUCH SMALLER]	3	[GO TO OP5]
[SOMEWHAT SMALLER]	4	[GO TO OP5]
[ABOUT THE SAME]	5	[GO TO OP5]
[DON'T KNOW]	97	[GO TO OP5]
[REFUSED]	98	[GO TO OP5]

**READ:** We would like to understand how much the other programs you used affected your motivation and ability to carry out the energy efficiency project we have been discussing, beyond what you would most likely have done using the resources from the &SPONSOR &PROGRAM alone.

**OP5.** If you had been able to access *only* the resources of the &SPONSOR &PROGRAM, but not those of the other programs you used, how likely is it that you would have carried out the &MEASURE? Would you say the likelihood of undertaking that measure was ... [READ LIST]

RESPONSE	OP5_MID1	OP5_MID2	OP5_MID3	OP5_MID4
Very likely	1	1	1	1
Somewhat likely	2	2	2	2
Not very likely	3	3	3	3
Or very <i>un</i> likely	4	4	4	4
[Don't know]				
	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

**OP6.** If you had been able to access *only* the resources of the &SPONSOR &PROGRAM, but not those of the other programs you used , would you have installed more or/a larger sized <measure>, less, about the same amount, or would you not have installed any quantity of the measure at all?

RESPONSE	OP6_MID1	OP6_MID2	OP6_MID3	OP6_MID4
Same amount	1	1	1	1
Less or smaller	2 Read OP7	2 Read OP7	2 Read OP7	2 Read OP7
More or larger	3 Read OP7	3 Read OP7	3 Read OP7	3 Read OP7
None at all	4	4	4	4
[Not Applicable]	5	5	5	5
[Don't know]	-97	-97	-97	-97
[Refused]	-98	-98	-98	-98

#### [IF OP6 = SAME or NOT INSTALLED ANY, SKIP TO OP1.]

**OP7.** By what percentage do you think you increased or decreased the amount of <&MEASURE installed because of the &SPONSOR &PROGRAM?

RESPONSE	OP7_MID1	OP7_MID2	OP7_MID3	OP7_MID4
[RECORD %]				
	%	%	%	%
Don't know	-97	-97	-97	-97
Refused	-98	-98	-98	-98

**OP8.** Did you first become aware of the opportunities to reduce energy use in &STR\_ADDRESS through &SPONSOR &PROGRAM, through the other energy efficiency programs in which you participated, or through some other source?

Through the SEP PA	1	[GO TO OP9]
Through other energy efficiency program [s]	2	[GO TO OP9]
Through another source	3	[GO TO OP9]
[DON'T KNOW]	-97	[GO TO OP9]
[REFUSED]	-98	[GO TO OP9]

**OP9** In your opinion, was the &SPONSOR's &PROGRAM more important in encouraging and enabling you [your organization] to carry out the energy efficiency project we have been discussing; was the other program more important; or were they both equally important?

SEP PA	1
Other program	2
Both equally important	3
[Don't know]	-97
[Refused]	-98

OP10	Why	do	you	say	that?
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<b>IRECORD V</b>	/FRRATIM
INECOID 1	LINDALIM

## BUILDING CHARACTRISTICS

Now I'd like to ask you some questions about you facility.

**BC1.** How many square feet is your facility in which this project was installed?

	Square feet [GO TO BC3a]	
-97	Refused	-98
-98	Don't know	-97

**BC2.** Would you say that the heated or cooled floor area is ...?

Less than 1,500 sq ft	1
Between 1,500 - 5,000 sq ft	2
Between 5,000 - 10,000 sq ft	3
Between 10,000 – 25,000 sq ft	4
Between 25,000 – 50,000 sq ft	5
Between 50,000 – 75,000 sq ft	6
Between 75,000 – 100,000 sq ft	7
Over 100,000 sq ft	8
Refused	-98

Don't know	-97
Bon t know	J.

## **BC3.** Is your space heated using electricity or gas?

Electricity	1
Gas	2
Propane	3
Both electricity and gas	4
Neither	5
OPEN\Other-RECORD	6
Refused	-98
Don't know	-97

## **BC4.** In what year was your facility built?

Year	[GO TO BC6]	&YRB
Refused		-98
Don't know		-97

## **BC5.** If don't know, would you say it was...

After 2000	1
In the 1990's	2
1980s	3
1970s	4
1960s	5
1950	6
Before 1950	7
Refused	-98
Don't know	-97

## FIRMOGRAPHICS

## FM1. What is the main business ACTIVITY at this facility?

Office	1
Retail (non-food)	2
College/University	3
School	4
Grocery Store	5
Restaurant	6
Health Care (other than Hospital)	7
Hospital	8
Hotel or Motel	9
Warehouse	10
Construction	11
Community Service/Church/Temple/ Municipality	12
Industrial Process/ Manufacturing/ Assembly	13
Condo Assoc./Apartment Mgr.	14
Greenhouse	15
Laundry/Cleaners	16
OPEN\Other - SPECIFY	17
Refused	-98
Don't Know	-97

**FM5.** How many people are currently working at the facility, including both full and part time? (IF DON'T KNOW ASK FOR BEST GUESS)

Number of people	&NUM
Refused	-98
Don't know	-87