APPENDIX A: NON-RESOURCE MEASURES ANALYZED

Table A-1. Summary of Non-Resource Measures Analyzed

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
APPLIANCES											
Install an energy efficient dishwasher	X				X			X	X		Energy Star
Unplug electronics when not in use or use power strips			X		X	X	X	X			*various*
BUILDING ENVELOPE											
Add a white roof	X							X	X		DEER
Add window caulking	X				X	X		X	X		eQUEST
Add weather stripping	X				X	X	X	X	X		eQUEST
Replace windows	X				X	X	X	X	X		eQUEST
Solar screens or film	X				X			X	X		eQUEST
Insulation	X					X		X	X		DEER
Add interior shades/drapes	X							X	X		eQUEST
Add exterior awnings	X							X	X		eQUEST
Add door shoe	X							X			eQUEST
Close shades in the summer			X		X	X					eQUEST

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
HVAC											
Install attic exhaust fan	X							X	X		*various*
Replace heating system	X				X			X	X		eQUEST
Replace cooling system	X						X	X	X		DEER
Had an HVAC tune up		X							X		CEUS and Piper (2009)
Other - better cooler maintenance (cleaning condenser coils)		X							X		DEER
Clean/replace AC Filter		X					X	X			CEUS (commercial), eQUEST (residential), and EERE (2009)
Replace or clean the heater filter		X			X		X	X			CEUS (commercial), eQUEST (residential), and KEMA Inc. (2003)
Replace the AC window seal		X						X			*[not reported]*
Lower heating thermostat			X		X	X	X	X			eQUEST
Use fans instead of air conditioning			X		X			X	X		eQUEST
Raise cooling thermostat (less cooling)			X			X	X	X			eQUEST

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
LAUNDRY											
Clothesline	X					X					*engineering algorithm*
Other - Clothes Dryer	X				X						DEER
Install an energy efficient clothes washer	X				X	X					EnergyStar
Wash and dry clothes with a full load only			X		X	X					RASS, *engineering algorithm*
Wash clothes in cold water			X		X	X					*various*
Less clothes dryer			X			X					*savings computed in clothesline measure*
LIGHTING											
Install CFLs	X				X	X	X				DEER
Add or retrofit lighting	X							X	X		DEER
Lighting controls	X							X			DEER
Replace two light bulbs for one higher output bulb	X				X						KEMA (2005)
Turn off lights when not in use			X		X	X	X	X	X		*engineering algorithm*
MOTORS											
Added or replaced motors	X								X		CEE, *engineering algorithm*

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
REFRIGERATION											
Retire Refrigerator	X						X	X			DEER
Retire Freezer	X						X	X			DEER
Install an energy efficient refrigerator	X				X	X	X	X	X		DEER
Other - Replace vending machine	X							X			EnergyStar
Replace the refrigerator gasket		X						X			DOE (1996)
Perform refrigeration maintenance		X						X			Carbon Trust (2009), Focus on Energy (2009)
Clean Refrigerator Coil and Gaskets		X				X	X	X			Home Energy Magazine (Bos, W. 1993)
Use energy savings button on refrigerator			X		X	X					DOE (2005)

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
WATER											
Install water heater blanket	X				X	X					DOE (2009)
Install faucet aerators/low-flow showerheads	X				X	X					Schuldt and Tachibana (2008)
Other - Wrap hot water heater	X							X			DOE (2009)
Replace water heater	X				X	X	X	X	X		DEER
Add pre-rinse spray valves	X							X	X		CUWCC
Reduce water pressure		X			X	X					Schuldt and Tachibana (2008), Watts Regulator Company (1998)
Repair faucet leaks		X				X	X				RetroFIT (n.d.), American Water Works Association (n.d.)
Run full loads in dishwasher			X		X						RASS
Lower water heater temperature			X		X	X	X	X			EPRI (Jacobs 1993), *engineering algorithm*
Take shorter showers			X		X	X					*engineering algorithm*
Turn off faucets			X		X	X					*engineering algorithm*

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
OTHER											
Other	X					X					base on other measures
Added Photovoltaics	X								X		California Solar Initiative (CPUC 2009), PVWatts (NREL)
Added controls (EMS, Prog therm, sensors, timer, dimmer, cycle mgr, VSD)	X								X		*savings captured in lighting section*
Reduce energy use at peak times			X					X	X		*no respondents reported taking this action*

APPENDIX B: CROSS-CUTTING TRAINING TABLES

CROSS CUTTING TABLES - ALL RESPONDENT TYPES

Table B-1. Rating of Statement that Respondent is more Able to Implement EE Solutions by Training Survey[1]

Response		Equipment Training	Process Training	Total
1 Strongly disagree	Count	1	2	3
	Percent	2.1%	1.9%	2.0%
2	Count	0	5	5
	Percent	0.0%	4.8%	3.3%
3	Count	5	6	11
	Percent	10.6%	5.7%	7.2%
4	Count	6	11	17
	Percent	12.8%	10.5%	11.2%
5	Count	9	24	33
	Percent	19.1%	22.9%	21.7%
6	Count	12	21	33
	Percent	25.5%	20.0%	21.7%
7 Strongly agree	Count	14	36	50
	Percent	29.8%	34.3%	32.9%
Total	**Count**	**47**	**105**	**152**

[1] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question K5a.

Table B-2. More Likely to Implement Energy Savings Efforts by Training Survey [2]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	3	1	3	7
	Percent	75.0%	100.0%	60.0%	70.0%
No	Count	1	0	2	3
	Percent	25.0%	0.0%	40.0%	30.0%
Total	**Count**	**4**	**1**	**5**	**10**

[2] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question K2.

CROSS CUTTING TABLES - EUCC RESPONDENT TYPES

Table B-3. EUCC Rating of Influence on Outlook towards Taking Advantage of Energy Efficiency Opportunities in Facilities by Training Survey [3]

Response		Codes and Standards	Equipment Training	Process Training	Total
1 Not At All	Count	1	0	6	7
	Percent	16.7%	0.0%	11.1%	8.5%
2	Count	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%
3	Count	0	4	7	11
	Percent	0.0%	18.2%	13.0%	13.4%
4	Count	0	4	7	11
	Percent	0.0%	18.2%	13.0%	13.4%
5	Count	1	5	10	16
	Percent	16.7%	22.7%	18.5%	19.5%
6	Count	1	5	16	22
	Percent	16.7%	22.7%	29.6%	26.8%
7 A Great Deal	Count	3	4	8	15
	Percent	50.0%	18.2%	14.8%	18.3%
Total	**Count**	**6**	**22**	**54**	**82**

[3] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question A1a.

Table B-4. EUCC Rating of Workshop Effect on Desire to Take Advantage of Energy Efficiency Opportunities in Facilities by Training Survey[4]

Response		Equipment Training	Process Training	Total
1 Not At All	Count	1	5	6
	Percent	4.5%	9.3%	7.9%
2	Count	1	4	5
	Percent	4.5%	7.4%	6.6%
3	Count	1	3	4
	Percent	4.5%	5.6%	5.3%
4	Count	2	2	4
	Percent	9.1%	3.7%	5.3%
5	Count	6	9	15
	Percent	27.3%	16.7%	19.7%
6	Count	5	17	22
	Percent	22.7%	31.5%	28.9%
7 A Great Deal	Count	6	14	20
	Percent	27.3%	25.9%	26.3%
Total	**Count**	**22**	**54**	**76**

[4] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question A1b.

Table B-5. EUCC Rating of Statement that Respondent is Better Prepared to Evaluate Energy Efficient Options by Training Survey[5]

Response		Codes and Standards	Equipment Training	Process Training	Total
1 Strongly disagree	Count	0	0	3	3
	Percent	0.0%	0.0%	5.6%	3.7%
2	Count	0	0	3	3
	Percent	0.0%	0.0%	5.6%	3.7%
3	Count	0	1	2	3
	Percent	0.0%	4.5%	3.7%	3.7%
4	Count	0	3	4	7
	Percent	0.0%	13.6%	7.4%	8.5%
5	Count	0	7	8	15
	Percent	0.0%	31.8%	14.8%	18.3%
6	Count	3	5	12	20
	Percent	50.0%	22.7%	22.2%	24.4%
7 Strongly agree	Count	3	6	22	31
	Percent	50.0%	27.3%	40.7%	37.8%
Total	**Count**	**6**	**22**	**54**	**82**

[5] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC1_b.

Table B-6. EUCC Rating of Statement that Respondent's Energy Efficiency Recommendations are Viewed as More Informed by Training Survey[6]

Response		Codes and Standards	Equipment Training	Process Training	Total
1 Strongly disagree	Count	0	1	7	8
	Percent	0.0%	4.5%	13.0%	9.8%
2	Count	0	1	2	3
	Percent	0.0%	4.5%	3.7%	3.7%
3	Count	0	2	2	4
	Percent	0.0%	9.1%	3.7%	4.9%
4	Count	1	3	3	7
	Percent	16.7%	13.6%	5.6%	8.5%
5	Count	0	4	13	17
	Percent	0.0%	18.2%	24.1%	20.7%
6	Count	3	5	10	18
	Percent	50.0%	22.7%	18.5%	22.0%
7 Strongly agree	Count	2	6	16	24
	Percent	33.3%	27.3%	29.6%	29.3%
8 Not Applicable	Count	0	0	1	1
	Percent	0.0%	0.0%	1.9%	1.2%
Total	**Count**	**6**	**22**	**54**	**82**

[6] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC1_c.

Table B-7. EUCC – Sought Out Additional Information Related to Workshop Concepts by Training Survey[7]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	2	17	36	55
	Percent	33.3%	77.3%	66.7%	67.1%
No	Count	4	5	18	27
	Percent	66.7%	22.7%	33.3%	32.9%
Total	**Count**	**6**	**22**	**54**	**82**

[7] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC6_a.

Table B-8. EUCC Rating that Recommends Energy Efficient Technologies or Practices to Management More Often by Training Survey[8]

Response		Codes and Standards	Equipment Training	Process Training	Total
1 Strongly disagree	Count	0	0	5	5
	Percent	.0%	.0%	9.3%	6.1%
2	Count	0	1	4	5
	Percent	.0%	4.5%	7.4%	6.1%
3	Count	0	1	0	1
	Percent	.0%	4.5%	.0%	1.2%
4	Count	0	4	3	7
	Percent	.0%	18.2%	5.6%	8.5%
5	Count	2	5	5	12
	Percent	33.3%	22.7%	9.3%	14.6%
6	Count	1	3	10	14
	Percent	16.7%	13.6%	18.5%	17.1%
7 Strongly agree	Count	2	8	27	37
	Percent	33.3%	36.4%	50.0%	45.1%
8 Not Applicable	Count	1	0	0	1
	Percent	16.7%	.0%	.0%	1.2%
Total	**Count**	**6**	**22**	**54**	**82**

[8] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC1_a.

Table B-9. EUCC Had Energy Audit at Facility within Last Three Years by Training Survey[9]

Response		Equipment Training	Process Training	Total
Don't Know	Count	1	3	4
	Percent	4.5%	5.5%	5.3%
Yes	Count	16	23	39
	Percent	72.7%	42.6%	51.3%
No	Count	5	28	33
	Percent	22.7%	51.9%	43.4%
Total	**Count**	**22**	**54**	**76**

Table B-10. EUCC Reason Did Not have Audit Done by Training Survey[10]

Response		Equipment Training	Process Training	Total
Don't know	Count	1	19	1
	Percent	20.0%	67.9%	60.6%
Feel it is too costly	Count	0	2	2
	Percent	0.0%	7.1%	6.1%
Do not know how to participate or that it was available	Count	0	1	1
	Percent	0.0%	3.6%	3.0%
Do not want to participate	Count	0	1	1
	Percent	0.0%	3.6%	3.0%
Do not need equipment	Count	0	1	1
	Percent	0.0%	3.6%	3.0%
Other	Count	4	4	8
	Percent	80.0%	14.3%	24.2%
Total	**Count**	**5**	**28**	**33**

[9] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC7.

[10] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC8.

Table B-11. EUCC Rating of Likelihood of Making Effort to Save Energy within Next 12 Months Using Workshop Concepts by Training Survey[11, 12, 13]

Response		Codes and Standards	Equipment Training	Process Training	Total
Skipped [c]	Count	0	0	2	2
	Percent	0.0%	0.0%	11.1%	7.7%
1 Not at all likely	Count	0	0	9	9
	Percent	.0%	0.0%	50.0%	34.6%
2	Count	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%
3	Count	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%
4	Count	0	2	0	2
	Percent	0.0%	100.0%	.0%	7.7%
5	Count	1	0	3	4
	Percent	16.7%	0.0%	16.7%	15.4%
6	Count	1	0	2	3
	Percent	16.7%	0.0%	11.1%	11.5%
7 Very likely	Count	4	0	2	6
	Percent	66.7%	0.0%	11.1%	23.1%
Total	**Count**	**6**	**2**	**18**	**26**

[11] All six Codes and Standards participants were asked this question regardless of their responses to the screener question(s).

[12] These respondents skipped this question based on a screener question featured only in the process workshop survey.

[13] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC4.

Table B-12. EUCC Have Taken Actions because of Audit by Training Survey[14]

Response		Equipment Training	Process Training	Total
Yes	Count	12	19	31
	Percent	75.0%	82.6%	79.5%
No	Count	4	4	8
	Percent	25.0%	17.4%	20.5%
Total	**Count**	**16**	**23**	**39**

[14] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TC9.

CROSS CUTTING TABLES - EUCR RESPONDENT TYPES

Table B-13. EUCR Rating of Workshop's Influence on Outlook to Think Differently Regarding How to Take Advantage of Energy Efficiency Opportunities in Homes by Training Survey[15]

Response		Equipment Training	Process Training	Total
1 No Influence	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2	Count	0	1	1
	Percent	0.0%	14.3%	7.1%
3	Count	1	1	2
	Percent	14.3%	14.3%	14.3%
4	Count	1	1	2
	Percent	14.3%	14.3%	14.3%
5	Count	1	2	3
	Percent	14.3%	28.6%	21.4%
6	Count	3	0	3
	Percent	42.9%	0.0%	21.4%
7 A Great Deal	Count	1	2	3
	Percent	14.3%	28.6%	21.4%
Total	**Count**	**7**	**7**	**14**

[15] Source: Partnership Program Indirect Impacts Evaluation, Equipment Participant Survey, and Process Participant Survey, question A2a.

Table B-14. EUCR Rating of Effect of Workshop on Desire to Take Advantage of Energy Efficiency Opportunities in Home by Training Survey[16]

Response		Equipment Training	Process Training	Total
1 No Influence	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2		0	0	0
		0.0%	0.0%	0.0%
3	Count	1	1	2
	Percent	14.3%	14.3%	14.3%
4	Count	1	1	2
	Percent	14.3%	14.3%	14.3%
5	Count	2	0	2
	Percent	28.6%	0.0%	14.3%
6	Count	1	2	3
	Percent	14.3%	28.6%	21.4%
7 A Great Deal	Count	2	3	5
	Percent	28.6%	42.9%	35.7%
Total	**Count**	**7**	**7**	**14**

[16] Source: Partnership Program Indirect Impacts Evaluation, Equipment Participant Survey, and Process Participant Survey, question A2b.

Table B-15. EUCR Rating of Increase in Awareness of Methods to Take Advantage of Energy Efficiency Opportunities in Home by Training Survey[17]

Response		Equipment Training	Process Training	Total
1 No Influence	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2	Count	1	0	1
	Percent	14.3%	0.0%	7.1%
3	Count	0	1	1
	Percent	0.0%	14.3%	7.1%
4	Count	1	2	3
	Percent	14.3%	28.6%	21.4%
5	Count	3	1	4
	Percent	42.9%	14.3%	28.6%
6	Count	1	1	2
	Percent	14.3%	14.3%	14.3%
7 A Great Deal	Count	1	2	3
	Percent	14.3%	28.6%	21.4%
Total	**Count**	**7**	**7**	**14**

Table B-16. EUCR - Have Made Efforts to Save Energy at Home by Training Survey[18]

Response		Equipment Training	Process Training	Total
Yes	Count	5	4	9
	Percent	71.4%	57.1%	64.3%
No	Count	2	3	5
	Percent	28.6%	42.9%	35.7%
Total	**Count**	**7**	**7**	**14**

[17] Source: Partnership Program Indirect Impacts Evaluation, Equipment Participant Survey, and Process Participant Survey, question A2c.

[18] Source: Partnership Program Indirect Impacts Evaluation, Equipment Participant Survey, and Process Participant Survey, question TR1.

Table B-17. EUCR Have Sought Additional Information Related to Workshop Concepts since Participation by Training Survey

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	2	4	4	10
	Percent	50.0%	57.1%	57.1%	55.6%
No	Count	2	3	3	8
	Percent	50.0%	42.9%	42.9%	44.4%
Total	**Count**	**4**	**7**	**7**	**18**

Table B-18. EUCR Have Shared Information Learned in Workshop with Family, Friend or Neighbor since Participation by Training Survey

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	2	7	6	15
	Percent	50.0%	100.0%	85.7%	83.3%
No	Count	2	0	1	3
	Percent	50.0%	.0%	14.3%	16.7%
Total	**Count**	**4**	**7**	**7**	**18**

Table B-19. EUCR Have Had Energy Audit at Home by Training Survey[19]

Response		Equipment Training	Process Training	Total
Yes	Count	1	0	1
	Percent	14.3%	0.0%	7.1%
No	Count	6	7	13
	Percent	85.7%	100.0%	92.9%
Total	**Count**	**7**	**7**	**14**

[19] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR5.

Table B-20. EUCR Reason Did Not have Audit by Training Survey[20]

Response		Equipment Training	Process Training	Total
Don't know	Count	2	3	5
	Percent	33.3%	23.1%	38.5%
We feel it is too costly	Count	1	0	1
	Percent	16.7%	0.0%	7.7%
Do not need services provided by the audit	Count	0	1	1
	Percent	0.0%	14.3%	7.7%
Interested by have not gotten around to it	Count	0	1	1
	Percent	0.0%	14.3%	7.7%
Other	Count	3	2	5
	Percent	50.0%	28.6%	38.5%
Total	**Count**	**6**	**7**	**13**

[20] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR6.

Table B-21. EUCR Rating of Influence of Workshop Information on Decision to Have Audit by Training Survey[21]

Response		Equipment Training	Total
1 No influence	Count	0	0
	Percent	0.0%	0.0%
2	Count	0	0
	Percent	0.0%	0.0%
3	Count	0	0
	Percent	0.0%	0.0%
4	Count	0	0
	Percent	0.0%	0.0%
5	Count	0	0
	Percent	0.0%	0.0%
6	Count	0	0
	Percent	0.0%	0.0%
7 Very Influential	Count	1	1
	Percent	100.0%	100.0%
Total	**Count**	**1**	**1**

Table B-22. EUCR - Took Actions because of Audit by Training Survey[22]

Response		Equipment Training	Total
Yes	Count	1	1
	Percent	100.0%	100.0%
No	Count	0	0
	Percent	0.0%	0.0%
Total	**Count**	**1**	**1**

[21] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR7.

[22] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR8.

Table B-23. EUCR Made Changes or Enhancements made due to Audit Resulted in Measurable Energy Savings by Training Survey[23]

Response		Equipment Training	Process Training	Total
Don't Know	Count	1	0	1
	Percent	16.7%	0.0%	10.0%
Yes	Count	5	4	9
	Percent	83.3%	100.0%	90.0%
No	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
Total	**Count**	**6**	**4**	**10**

Table B-24. EUCR Estimate of Energy Savings due to Workshop Participation by Training Survey[24]

Response		Equipment Training	Process Training	Total
Significant energy savings	Count	2	2	4
	Percent	40.0%	50.0%	44.4%
Moderate energy savings	Count	1	1	2
	Percent	20.0%	25.0%	22.2%
Minimal energy savings	Count	2	1	3
	Percent	40.0%	25.0%	33.3%
Total	**Count**	**5**	**4**	**9**

[23] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR11.

[24] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR12.

Table B-25. EUCR Have Estimated Average Savings by Training Survey[25]

Response		Equipment Training	Process Training	Total
Yes	Count	1	1	2
	Percent	50.0%	50.0%	50.0%
No	Count	1	1	2
	Percent	50.0%	50.0%	50.0%
Total	**Count**	**2**	**2**	**4**

[25] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TR13.

CROSS CUTTING TABLES - MA RESPONDENT TYPES

Table B-26. MA Rating of Confidence in Recommendations made for Energy Efficient Efforts Having Actual Energy Savings in Facilities by Training Survey[26]

Response		Equipment Training	Process Training	Total
1 Strongly Disagree	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
3	Count	3	2	5
	Percent	16.7%	4.5%	8.1%
4	Count	1	2	3
	Percent	5.6%	4.5%	4.8%
5	Count	7	10	17
	Percent	38.9%	22.7%	27.4%
6	Count	0	11	11
	Percent	.0%	25.0%	17.7%
7 Strongly agree	Count	7	19	26
	Percent	38.9%	43.2%	41.9%
Total	**Count**	**18**	**44**	**62**

[26] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question K5f.

Table B-27. MA Rating of Workshop's Influence on Desire to Introduce Energy Efficiency in Work for Clients by Training Survey[27]

Response		Equipment Training	Process Training	Total
1 Not at all	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2	Count	0	1	1
	Percent	0.0%	2.3%	1.6%
3	Count	2	3	5
	Percent	11.1%	6.8%	8.1%
4	Count	2	3	5
	Percent	11.1%	6.8%	8.1%
5	Count	5	12	17
	Percent	27.8%	27.3%	27.4%
6	Count	4	6	10
	Percent	22.2%	13.6%	16.1%
7 A Great Deal	Count	5	19	24
	Percent	27.8%	43.2%	38.7%
Total	**Count**	**18**	**44**	**62**

[27] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question A3b.

Table B-28. MA Rating of Increase in Awareness of Methods to Introduce Energy Efficiency to Work for clients because of Workshop by Training Survey[28]

Response		Equipment Training	Process Training	Total
1 Not at all	Count	0	0	0
	Percent	0.0%	0.0%	0.0%
2	Count	1	0	1
	Percent	5.6%	0.0%	1.6%
3	Count	1	5	6
	Percent	5.6%	11.4%	9.7%
4	Count	2	4	6
	Percent	11.1%	9.1%	9.7%
5	Count	6	15	21
	Percent	33.3%	34.1%	33.9%
6	Count	3	6	9
	Percent	16.7%	13.6%	14.5%
7 A Great Deal	Count	5	14	19
	Percent	27.8%	31.8%	30.6%
Total	**Count**	**18**	**44**	**62**

Table B-29. MA Changes Made: Specified Unfamiliar Energy Efficient Measures by Training Survey[29]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	7	12	28	47
	Percent	33.3%	75.0%	73.7%	62.7%
No	Count	14	4	10	28
	Percent	66.7%	25.0%	26.3%	37.3%
Total	**Count**	**21**	**16**	**38**	**75**

[28] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question A3c.

[29] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2a.

Table B-30. MA Changes Made: Specifies Efficient Measures More Frequently by Training Survey[30]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	6	12	31	49
	Percent	28.6%	75.0%	81.6%	65.3%
No	Count	15	4	7	26
	Percent	71.4%	25.0%	18.4%	34.7%
Total	**Count**	**21**	**16**	**38**	**75**

Table B-31. MA Changes Made: Applied Unfamiliar Building or System Design Principles by Training Survey[31]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	6	10	27	43
	Percent	28.6%	62.5%	71.1%	57.3%
No	Count	15	6	10	31
	Percent	71.4%	37.5%	26.3%	41.3%
Don’t know	Count	0	0	1	1
	Percent	0.0%	0.0%	2.6%	1.3%
Total	**Count**	**21**	**16**	**38**	**75**

30 Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2b.

31 Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2c.

Table B-32. MA Changes Made: Utilized Unfamiliar Diagnostic Tools by Training Survey[32]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	2	11	7	20
	Percent	9.5%	68.8%	18.4%	26.7%
No	Count	18	5	31	54
	Percent	85.7%	31.2%	81.6%	72.0%
Don't Know	Count	1	0	0	1
	Percent	4.8%	0.0%	0.0%	1.3%
Total	**Count**	**21**	**16**	**38**	**75**

Table B-33. MA Changes Made: Utilized Unfamiliar Building or Design Tools by Training Survey[33]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	4	11	22	37
	Percent	19.0%	68.8%	57.9%	49.3%
No	Count	17	5	16	38
	Percent	81.0%	31.2%	42.1%	50.7%
Total	**Count**	**21**	**16**	**38**	**75**

[32] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2d.

[33] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2e.

Table B-34. MA Changes Made: Changed Installation or Maintenance Practices for Energy Consuming Products by Training Survey[34]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	1	7	16	24
	Percent	33.3%	43.8%	42.1%	42.1%
No	Count	2	7	21	30
	Percent	66.7%	43.8%	55.3%	52.6%
Don't know	Count	0	2	1	3
	Percent	0.0%	12.5%	2.6%	5.3%
Total	**Count**	**3**	**16**	**38**	**57**

Table B-35. MA Changes Made: Changed Methods for Sizing and Specifying New Equipment for Clients by Training Survey[35]

Response		Codes and Standards	Equipment Training	Process Training	Total
Yes	Count	4	10	19	33
	Percent	28.6%	62.5%	50.0%	48.5%
No	Count	10	6	17	33
	Percent	71.4%	37.5%	44.7%	48.5%
Don't know	Count	0	0	2	2
	Percent	0.0%	0.0%	5.3%	2.9%
Total	**Count**	**14**	**16**	**38**	**68**

[34] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2f.

[35] Source: Partnership Program Indirect Impacts Evaluation, Title 24 Participant Survey, Equipment Participant Survey, and Process Participant Survey, question TA2g.

APPENDIX C: DESCRIPTION OF REFERRALS PROGRAMS AND REFERRALS PROCESSES

The following descriptions are based on the initial interviews with program staff, notes on responses to the data request for a list of referrals, and where needed and possible, subsequent interviews to explore the referrals process in more detail. These are presented to provide an understanding of the various programs' referral processes and the quantity and quality of the tracking data provided for this research before presenting detailed findings.

About half of the partnerships are led by or have significant components led by two contractors. Richard Heath and Associates, Inc. (RHA) leads Fresno Energy Watch, Merced/Atwater Energy Watch, and Stockton Energy Watch partnerships. Staples Marketing leads Bakersfield-Kern Energy Watch, Association of Monterey Bay Area Governments (AMBAG) (small hospitality business and municipal facilities only), South San Joaquin Energy Watch (small hospitality business and municipal facilities only), and Motherlode Energy Watch (small business and multifamily units) partnerships components.

Association of Monterey Bay Area Governments (AMBAG) Partnership

As part of their non-resource efforts, AMBAG refers local governments to Pacific Gas and Electric Company (PG&E) incentive programs through the Energy Advisory Committee meetings and their energy assessment reports. The energy assessment report, offered to municipalities, provides a detailed analysis of the past two years of energy use for the jurisdiction's municipal buildings. The report graphically compares and benchmarks the buildings on various metrics (overall energy use, energy/square foot, and other parameters).

Monthly Energy Advisory Committee meetings feature a section where attending local government representatives are presented with information on existing PG&E programs. AMBAG does not track these referrals, but does keep meeting attendance records.

AMBAG also meets with local governments to review their energy assessment report to identify projects appropriate for the individual jurisdiction. These referrals are generally not tracked; however, AMBAG notes that they have met with and identified projects for San Benito County, Marina, Salinas, and King City.

Finally, AMBAG reports referring customers to other resource programs while working with them on direct-install programs. One example is City of Salinas' industrial wastewater-facility retrofit project, which AMBAG has referred to PG&E Emerging Technologies.

Fresno, Merced/Atwater, and Stockton Energy Watch Partnerships

The Fresno, Merced/Atwater, and Stockton Energy Watch Partnerships target residential, small business, and municipal customers and are all operated by RHA. Through the local government partnerships energy assessments and other activities, each partnership refers non-residential customers to third-party resource programs as well as PG&E rebate and incentive programs. The referrals may be made as a result of partnership activities such as direct install of measures, audits, and community events that target local businesses to provide information on IOU and third-party programs. The partnership program is described in the following:

- *Fresno Energy Watch*. For the Municipal Facilities Retrofits component, RHA works with staff from the City of Fresno and from PG&E to identify opportunities and incentive programs for energy efficiency projects. RHA refers customers including local government? to the Small Business Direct Install Program and other incentive programs by working with the Business Expansion and Retention (BEAR) Action Network—a collaborative effort between the City of Fresno and the Economic Development Corporation serving Fresno County.
- *Merced/Atwater Energy Watch*. This program targets residential, small business, and municipal customers in the Cities of Merced and Atwater. For the Municipal Retrofit element, RHA facilitates surveys to identify energy efficiency potential and refers (using which methods?) customers to appropriate incentive programs.
- *Stockton Energy Watch*. Is this municipal and small business? RHA works with staff from the City of Stockton and from PG&E to identify and proceed with energy efficiency projects, including direct install projects. The Recycling-Energy-Air-Conservation (REACON) is an initiative of the Stockton Chamber of Commerce to promote recycling and energy efficiency. RHA staff accompany REACON staff performing energy efficiency audits of area businesses.

PA received referral-tracking data from RHA for each of these partnerships for small businesses that included 224 unique small business customers from Fresno, 73 customers from Merced/Atwater, and 144 customers from Stockton. These tracking data included company name, address, phone number, the programs the customer was referred to, the referral mechanism, referral date, and in most cases, a contact name. Referrals from these partnerships ranged from November 2007 through September 2008. RHA indicated that the process for referrals was to transfer the list of referrals to the third-party program using CDs or Google Docs. There was no process in place to follow-up with third-party program managers or customers to determine the outcomes of the referrals. Great information to know here – the records that are and should be kept.

Redwood Coast Energy Watch Partnership

The Redwood Coast Energy Watch refers small business customers to PG&E core programs through the partnership's small business and residential customer energy audit reports and commercial building energy assessments.

According to a partnership representative from PG&E, these referrals from the partnership are generally informal and are currently not tracked. Redwood Coast plans to start tracking non-residential referrals in 2009 and is considering supplying small business customers with informative packets on PG&E programs as they currently do with residential sweeps.

South San Joaquin Energy Watch Partnership

The San Joaquin Partnership, implemented by PG&E and Intergy Corporation, refers non-residential customers to appropriate PG&E programs through audit reports provided to small businesses, municipal, small industrial, and non-profits. For this evaluation, PA received referral-tracking data consisting of three non-residential customers, but none matched with the utility participant data. A San Joaquin representative met with and referred one of these customers to both the HVAC Tune-Up Program and the Duct Sealing Incentive Program. San Joaquin referred a second customer to the HVAC Tune-Up Program and no information was given on the referral to the third customer. For the two customers where referral and contact information was tracked, the data included company name, address, phone number, programs the customer was referred to, the referral mechanism, referral date, and contact name. One referral was made in December of 2007 and the other was made in January of 2008.

South Bay Partnership

The South Bay Partnership, run through Energy Savings Center, conducts audits of municipal facilities and refers these customers to utility resource programs. In the 4th quarter of 2007, they added a dedicated person to follow-up with customers to inquire about their audits and if they had made any energy or water efficiency changes. The South Bay Energy Savings Center is continuing to place additional emphasis on the funneling of businesses to Southern California Edison (SCE) and Southern California Gas(SCG) account representatives through its outreach programs. A number of the outreach efforts are conducted in conjunction with city council meetings of participating local governments.

PA received a list of 48 small business referrals to SCE programs through the South Bay Partnership, ranging from October of 2006 through October of 2008. These tracking data included the firm, a contact person, address, phone number, referral date, an indication of the program the business was referred to, and documentation of follow-up calls.

Bakersfield-Kern County Partnership

The City of Bakersfield and Kern County are partnered with PG&E, SCE, and SCG. The Bakersfield-Kern Partnership includes the Home Buyer Program that includes an energy audit and direct install of some measures. There is also a small business direct install and municipal facility program with technical assistance. All three components make referrals to investor owned utility (IOU) incentive programs, however the referrals-tracking system covers referrals made at events.

We received data on 782 referrals from Staples Marketing, the implementer of the Home Buyer Program. These referrals were tracked by month and the tracking data included customer name, address, phone number, the event at which the referral was made, and the date of the event. Event dates ranged from April of 2008 through October 2008.

According to Staples representatives, the customers in these tracking data are those who stopped at Bakersfield-Kern Partnership's booth at the listed event and put their name down expressing interest in energy efficiency programs. While Staples primarily made general referrals to IOU web sites, they also reported offering flyers and other literature on specific IOU rebate and incentive programs, but did not track what type of literature was supplied to each customer.

PA also requested data from the Bakersfield-Kern Partnership on referrals from the Municipal Facility Retrofit Program, a non-resource element of the partnership. SCE reported that there are currently no referrals from the Municipal Facility Retrofit Program.

LGEAR/City of Ridgecrest Partnership

The City of Ridgecrest is directly partnered with SCE as part the Local Government Energy Action Resources (LGEAR) network. Unlike many other partnerships, Ridgecrest does not have direct-savings goals and is solely focused on providing marketing and outreach and directing customers to SCE and third-party efficiency programs. The Ridgecrest partnership refers residential customers to the Ducted Evaporative Cooler Rebate Program (a component of SCE's Home Energy Efficiency Rebate Program (HEER) through newspaper and radio advertisements. The Partnership will offer an additional incentive to Ridgecrest residents to broaden participation in the program.

PA received tracking data from the Ridgecrest Partnership consisting of 269 customers who participated in the Ducted Evaporative Cooler Rebate Program and live in the Ridgecrest partnership service territory.

Because of their radio and newspaper marketing campaign, the Partnership claimed all of these customers as referrals, even though there was no tracking of how these customers heard of the program. These data included dates ranging from April 2008 through October 2008, and referred customer's name, address, and in most cases, a phone number. These tracking data also included a field for the mechanism by which the referral was made, which was recorded as "Newspaper/Radio Ads, Flyers, Radio Ads" for all records.

LGEAR/Mammoth Lakes Partnership

The Mammoth Lakes Partnership is also under the LGEAR umbrella, and its marketing efforts are implemented through the High Sierra Foundation. Like Ridgecrest, the Mammoth Lakes Partnership has no specific resource goals. This program has two key initiatives that refer constituents into resource programs: 1) the ENERGY STAR® refrigerator initiative covers delivery costs to participants in the resource program since ENERGY STAR refrigerators are not stocked by stores in this area and 2) the Municipal Facility Retrofits initiative funnels municipal facilities into lighting incentive programs

One component of their non-resource efforts is referring residential customers to the ENERGY STAR Refrigerator Rebate Program (a component of HEER) and the Refrigerator Round-Up Program (part of the Appliance Recycling Program (ARP)) through newspaper and radio advertisements. The partnership also provides rebates to help customers with the delivery costs associated with these activities.

Similar to Ridgecrest, PA received two lists of tracking data of all residential customers that participated in other resource programs and lived in the Mammoth Lakes Partnership service area. One list contained 30 participants of the ENERGY STAR Refrigerator Rebate Program (a component of HEER), while the second list included 19 participants of the Refrigerator Round-Up Program (part of the ARP). Like Ridgecrest, the Partnership claimed all of these customers as referrals, even though there was no tracking of how these customers heard of the program. The data we received consisted of primarily the same information and were in the same format as the referrals from the Ridgecrest Partnership. However, the referrals-tracking data for the Round-Up Program did not include any customer phone numbers, while the tracking data for the Refrigerator Rebate Program did not include any referral dates. Referrals to the Round-Up Program were all listed as being made in August of 2007.

City of San Diego Partnership

Through its Project Facilitation component, The City of San Diego along with its partner, San Diego Gas & Electric (SDG&E) refers municipal facilities into other SDG&E resource programs outside of the partnership. The partnership has funneled a number of museums into energy efficiency projects. Balboa Park has 25 museums and the City of San Diego has helped peer-to-peer outreach with the museum officials.

SDG&E staff did not provide the City of San Diego's referral-tracking data in time for this analysis.

APPENDIX D: EFFECTIVE USEFUL LIFE (EUL) ASSUMPTIONS

To estimate the lifecycle savings, it is necessary to assign an estimated effective useful life value to each of the program-induced actions taken. Table D-1 details the effective useful life (EUL) for each measure included in the study.

Please note that EULs related to behavior are estimated at five years. While there is a considerable amount of literature around effective information and education programs and persistence of behavioral changes, the literature is quick to report that the industry is lacking stringent and reliable studies to estimate the EUL of behaviors.

One study indicated that the persistence of behavioral changes lasted 12 to 18 months. This study was related to a home energy display pilot, which provided continuous signals to customers. This program is more aggressive in its approach to consumer information and education than what is offered through walk-through audits.[36]

Another study, conducted by the Alliance to Save Energy, estimated the persistence of behavioral changes as a result of educational efforts, combined with weatherization services to low-income populations. This study concluded that 85% of the savings (or behaviors) persisted three years after the intervention, indicating that an EUL for behavioral changes could exceed three years. However, the treatment group within this study received a higher level of contact and follow-up than that offered through audits such as the AMBAG audit.[37]

A third study tied a time period onto the point when a behavioral change becomes habitual. This study asserted that if behavior changes persist three months then the behavior becomes a habit, and this could be unrecognizable, as a change, to households as well. If the change persisted for three months then the EUL could be a person's lifetime; however, the report did not discuss what percentage of households studied continued their behavioral changes beyond the first three months.[38]

Given the level of uncertainty of the EULs related to behavioral changes, and wide range of findings presented in the literature, we assumed an EUL of five years for behavioral changes. We are open to further discussion with the CPUC and Master Evaluation Contractor on appropriate values.

We projected a stream of annual energy savings using a survival curve that results in 50% of the savings persisting in the final year of the measures' EUL. We then summed the stream of savings to report lifecycle savings, as seen in the tables below.

[36] Carroll, Ed, E. Hatton, M. Brown. 2009. "Residential Energy Use Behavior Change Pilot." Presented to Minnesota Department of Commerce. Franklin Energy.

[37] Harrigan, Merrilee, J. Gregory. June 1994. "Do Savings from Energy Education Persist?" Alliance to Save Energy.

[38] Darby, Sarah. "The Effectiveness of Feedback on Energy Consumption - A Review of the Literature on Metering, Billing, and Direct Displays." Environmental Change Institute, University of Oxford.

Table D-1. AMBAG Audit EUL Value Assumptions

	EUL	Source
Replace refrigerator	14	DEER 2009-2011 Planning
Install water heater blanket	11	Used high efficiency WH - gas
Install window caulking	5	Assumed
Install weather-stripping	2	Assumed
Replace windows	20	DEER 2009-2011 Planning
Replace water heater	11	DEER 2009-2011 Planning
Replace clothes washer	11	DEER 2009-2011 Planning
Replace dishwasher	11	DEER 2009-2011 Planning
Replace heating system	20	DEER 2009-2011 Planning
Install CFLS	6.6	DEER 2009-2011 Planning, assumes 10,000 hours of annual use
Install low-flow showerheads and aerators	10	DEER 2009-2011 Planning
Install solar screens	20	Used windows value
Other - Clothes Dryer	11	Used clothes washer value
Turn down thermostat during heating season	5	Behavior assumption
Use fans instead of air conditioning	5	Behavior assumption
Lower hot water temperature	5	Behavior assumption
Turn off lights when not in use	5	Behavior assumption
Replace heating filter	5	Behavior assumption
Close shades	5	Behavior assumption
Take shorter showers	5	Behavior assumption
Use cold water in clothes washer	5	Behavior assumption
Use full load in clothes washer	5	Behavior assumption
Use refrigerator's energy saving setting	5	Behavior assumption
Reduce household water pressure	5	Behavior assumption
Unplug electronics when not in use	5	Behavior assumption
Swap Two Lights for One	5	Behavior assumption
Full Load Dishwashing	5	Behavior assumption

Table D-2. CEP Small Business Audit EUL Value Assumptions

Measure	EUL	Source
Install tinted window film	10	DEER 2009-2011 Planning
Add interior shades/drapes	10	Assumed
Add weather stripping	5	Assumed
Add door shoe	10	Assumed
Replace water heater	15	DEER 2009-2011 Planning
Replace cooling system	15	DEER 2009-2011 Planning (using HVAC - air conditioning)
Add or retrofit lighting	8	DEER 2009-2011 Planning, EUL varies by building type so do not provide an EUL specific for retrofits, values provided range up to 12 for CFL fixtures, assume 8
Lower heating thermostat	5	Behavior assumption
Increase AC setting	5	Behavior assumption
Turn off lights	5	Behavior assumption
Clean refrigerator coils and gasket	5	Behavior assumption
Replace or clean the AC filter	5	Behavior assumption
Other - Wrap Hot water heater	7	DEER 2009-2011 Planning
Other - Replace vending machine	10	DEER 2009-2011 Planning details vending machine controller was a 5, downgraded from 10 from previous years. Assume controller has less EUL than the machine itself, keep at original 10.

Table D-3. CEP Residential Audit EUL Value Assumptions

Measure	EUL	Source
Installed energy efficient refrigerator	14	DEER 2009-2011 Planning
Installed weather stripping	2	Assumed
Installed windows	20	DEER 2009-2011 Planning
Installed water heater	11	DEER 2009-2011 Planning
Installed CFLs	6.6	Assumes 10,000 hours of annual use
Less heating	5	Behavior assumption
Less cooling	5	Behavior assumption
Lower hot water temperature	5	Behavior assumption
Retire refrigerator	5	DEER 2009-2011 Planning
Retire freezer	4	DEER 2009-2011 Planning
Turn off lights	5	Behavior assumption
Unplug electronics	5	Behavior assumption
Clean refrigerator coil and gaskets	5	Behavior assumption
Clean/replace AC filter	5	Behavior assumption
Clean/replace furnace filter	5	Behavior assumption

Table D-4. CYES Audit EUL Value Assumptions

Measure	EUL	Source
Installed energy efficient refrigerators	14	DEER 2009-2011 Planning
Installed weatherstripping	2	Assumed
Installed windows	20	DEER 2009-2011 Planning
Installed energy efficient clothes washer	11	DEER 2009-2011 Planning
Installed CFLs	6.6	DEER 2009-2011 Planning, assumes 10,000 hours of annual use
Installed/improved insulation	20	DEER 2009-2011 Planning
Installed faucet aerators/low flow showerheads	10	DEER 2009-2011 Planning
Turn down thermostat during heating season	5	Behavioral assumption
Turn up thermostat during cooling season	5	Behavioral assumption
Turn off lights when not in use	5	Behavioral assumption
Take shorter showers	5	Behavioral assumption
Use cold water for clothes washing	5	Behavioral assumption
Use clothesline	5	Behavioral assumption
Turn on energy saving button in refrigerator	5	Behavioral assumption
Reduce refrigerator temperature setting	5	Behavioral assumption
Reduce water pressure	5	Behavioral assumption
Unplug electronics	5	Behavioral assumption

Table D-5: Equipment Training EUL Value Assumptions for Commercial Measures

Measure	EUL	Source
Refrigerator	10	DEER 2009-2011 Planning
Tinted Window Film	10	DEER 2009-2011 Planning
Interior Shades	10	Assumed
Awning	5	Assumed
Weatherization	20	Vermont Electric Efficiency Potential Study
Dishwasher	10	FY07 FOE Interim Benefit-Cost Analysis
Insulation	20	DEER 2009-2011 Planning
White Roof	15	DEER 2009-2011 Planning
Windows	20	DEER 2009-2011 Planning
Water Heater	15	DEER 2009-2011 Planning
Controls	11	DEER 2009-2011 Planning
HVAC System	15	DEER 2009-2011 Planning
Pre-Rinse Spray Valve	5	CEE commercial kitchens initiative
Solar PVs	20	Multiple internet sources
Lighting	8	DEER 2009-2011 Planning
HVAC Tuneup	3	ENERGIZING VIRGINIA: EFFICIENCY FIRST (ACEEE Sept 2008)
Motors	15	DEER 2009-2011 Planning
Fans	10	ENERGIZING VIRGINIA: EFFICIENCY FIRST (ACEEE Sept 2008)
Turn Off Lights	5	Behavior assumption

APPENDIX E: GROSS ANALYSIS METHODS

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Introduction

This section describes the methods used by Summit Blue Consulting ("Summit Blue") to estimate gross energy (kWh and therm) and demand (coincident peak kW) savings for respondents of select LGP non-resource program surveys. Energy and demand measures identified by respondents included equipment replacement, maintenance, and behavior change. Savings methods leveraged core California-based secondary resources (e.g., DEER, CEUS, reports on CALMAC.org) and models (eQUEST) wherever possible. Where data from these sources was not adequate, not reflective of the range of participant conditions, or was internally inconsistent, additional secondary sources and engineering calculations were used. Gross impact analyses were coordinated with those from the CPUC Marketing and Outreach – Energy Centers contract, which Summit Blue also conducted the gross impact analysis for.

The five surveys analyzed were:

- Equipment Training
- California Youth Energy Services (CYES) Residential Audit
- Association of Monterey Bay Area Governments (AMBAG) Residential Audit
- Community Energy Partnerships (CEP) Residential Audit
- Community Energy Partnerships (CEP) Small Business Audit

This report categorizes these measures into the following nine end-use categories:

- Appliances
- Building envelope
- HVAC
- Laundry
- Lighting
- Motors
- Refrigeration
- Water
- Other

Table E-1 summarizes the measures covered in the surveys and the key data source(s) used to estimate savings for measures identified by respondents.

The first subsections of this chapter describe general methods applied to measures across multiple end-use categories. Latter subsections describe the specific methods applied to measures, categorized by end-use. The final subsection examines uncertainty in these estimates and discusses techniques for addressing this uncertainty in future analyses.

Table E-1. Summary of non-resource measures analyzed

	MEASURE TYPE				SURVEY						
MEASURE	Equipment	Maintenance	Behavior		AMBAG RES / AUDIT	CYES RES / AUDIT	CEP RES / AUDIT	CEP SMALL COMM / AUDIT	Equipment Training COMM / TRAINING		Primary Reference
APPLIANCES											
Install an energy efficient dishwasher	X				X			X	X		**Energy Star**
Unplug electronics when not in use or use power strips			X		X	X	X	X			***various***
BUILDING ENVELOPE											
Add a white roof	X							X	X		**DEER**
Add window caulking	X				X	X		X	X		**eQUEST**
Add weather stripping	X				X	X	X	X	X		**eQUEST**
Replace windows	X				X	X	X	X	X		**eQUEST**
Solar screens or film	X				X			X	X		**eQUEST**
Insulation	X					X		X	X		**DEER**
Add interior shades/drapes	X							X	X		**eQUEST**
Add exterior awnings	X							X	X		**eQUEST**
Add door shoe	X							X			**eQUEST**
Close shades in the summer			X		X	X					**eQUEST**

	MEASURE TYPE				SURVEY						
MEASURE	Equipment	Maintenance	Behavior		AMBAG RES / AUDIT	CYES RES / AUDIT	CEP RES / AUDIT	CEP SMALL COMM / AUDIT	Equipment Training COMM / TRAINING		Primary Reference
HVAC											
Install attic exhaust fan	X							X	X		*various*
Replace heating system	X				X			X	X		**eQUEST**
Replace cooling system	X						X	X	X		**DEER**
Had an HVAC tune up		X							X		**CEUS and Piper (2009)**
Other - better cooler maintenance (cleaning condenser coils)		X							X		**DEER**
Clean/replace AC Filter		X					X	X			**CEUS (commercial), eQUEST (residential), and EERE (2009)**
Replace or clean the heater filter		X			X		X	X			**CEUS (commercial), eQUEST (residential), and KEMA Inc. (2003)**
Replace the AC window seal		X						X			***[not reported]***
Lower heating thermostat			X		X	X	X	X			**eQUEST**
Use fans instead of air conditioning			X		X			X	X		**eQUEST**
Raise cooing thermostat (less cooling)			X			X	X	X			**eQUEST**

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
LAUNDRY											
Clothesline	**X**					**X**					***engineering algorithm***
Other - Clothes Dryer	**X**				**X**						**DEER**
Install an energy efficient clothes washer	**X**				**X**	**X**					**EnergyStar**
Wash and dry clothes with a full load only			**X**		**X**	**X**					**RASS, *engineering algorithm***
Wash clothes in cold waters			**X**		**X**	**X**					***various***
Less clothes dryer			**X**			**X**					***savings computed in clothesline measure***
LIGHTING											
Install CFLs	**X**				**X**	**X**	**X**				**DEER**
Add or retrofit lighting	**X**							**X**	**X**		**DEER**
Lighting controls	**X**							**X**			**DEER**
Replace two light bulbs for one higher output bulb	**X**				**X**						**KEMA (2005)**
Turn off lights when not in use			**X**		**X**	**X**	**X**	**X**	**X**		***engineering algorithm***

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
MOTORS											
Added or replaced motors	**X**								**X**		**CEE, *engineering algorithm***
REFRIGERATION											
Retire Refrigerator	**X**						**X**	**X**			**DEER**
Retire Freezer	**X**						**X**	**X**			**DEER**
Install an energy efficient refrigerator	**X**				**X**	**X**	**X**	**X**	**X**		**DEER**
Other - Replace vending machine	**X**							**X**			**EnergyStar**
Replace the refrigerator gasket		**X**						**X**			**DOE (1996)**
Perform refrigeration maintenance		**X**						**X**			**Carbon Trust (2009), Focus on Energy (2009)**
Clean Refrigerator Coil and Gaskets		**X**				**X**	**X**	**X**			**Home Energy Magazine (Bos, W. 1993)**
Use energy savings button on refrigerator			**X**		**X**	**X**					**DOE (2005)**

	MEASURE TYPE				SURVEY						
MEASURE	Equipment	Maintenance	Behavior		AMBAG RES / AUDIT	CYES RES / AUDIT	CEP RES / AUDIT	CEP SMALL COMM / AUDIT	Equipment Training COMM / TRAINING		Primary Reference
WATER											
Install water heater blanket	X				X	X					**DOE (2009)**
Install faucet aerators/low-flow showerheads	X				X	X					**Schuldt and Tachibana (2008)**
Other - Wrap hot water heater	X							X			**DOE (2009)**
Replace water heater	X				X	X	X	X	X		**DEER**
Add pre-rinse spray valves	X							X	X		**CUWCC**
Reduce water pressure		X			X	X					**Schuldt and Tachibana (2008), Watts Regulator Company (1998)**
Repair faucet leaks		X				X	X				**RetroFIT (n.d.), American Water Works Association (n.d.)**
Run full loads in dishwasher			X		X						**RASS**
Lower water heater temperature			X		X	X	X	X			**EPRI (Jacobs 1993), *engineering algorithm***
Take shorter showers			X		X	X					***engineering algorithm***
Turn off faucets			X		X	X					***engineering algorithm***

	MEASURE TYPE				SURVEY						
MEASURE	**Equipment**	**Maintenance**	**Behavior**		**AMBAG RES / AUDIT**	**CYES RES / AUDIT**	**CEP RES / AUDIT**	**CEP SMALL COMM / AUDIT**	**Equipment Training COMM / TRAINING**		**Primary Reference**
OTHER											
Other	**X**					**X**					**base on other measures**
Added Photovoltaics	**X**								**X**		**California Solar Initiative (CPUC 2009), PVWatts (NREL)**
Added controls (EMS, Prog therm, sensors, timer, dimmer, cycle mgr, VSD)	**X**								**X**		***savings captured in lighting section***
Reduce energy use at peak times			**X**					**X**	**X**		***no respondents reported taking this action***

1.1 General Methods - Residential HVAC Interaction Factors

Through extensive use of the DEER database it was determined that, in certain residential appliances, lighting, and refrigeration measures, the implied HVAC interaction (savings whole-building/savings end-use) was unreasonably high. Additionally, many respondents stated heating and cooling system combinations not available in DEER (e.g., electric heating) or did not provide heating and cooling system information. In order to correct for these limitations in the DEER HVAC interactions, a set of custom HVAC interaction factors was created. These interaction factors were multiplied by end-use savings to determine whole-building impact.

Custom interaction factors were created as follows:

- For AC/heating combinations available in DEER 2008 (Central AC/Gas Heat, No AC/Gas Heat), energy interaction factors were assigned an average of DEER values over all climate zones.
- For electric heat/no AC, kWh interactions were calculated according to an ASHRAE method found in "Calculating Lighting and HVAC Interactions" (Rundquist Nov 1993).
- For electric heat w/AC, kWh interaction attributable to electric heat (the difference between the values for electric and gas heat, no AC) was added to the value for that type of AC w/ gas heat.
- For AC types (room, evaporative) which were not available in DEER, kWh interaction was found using weighted averages based on assumed energy use of alternate cooling options relative to central AC.[39]
    - For kW factors, engineering judgment was used to estimate values for central AC, and scaled down for room and evaporative AC based on corresponding kWh interaction factors.[40]
- For "Don't Know" cooling values, weighted averages of factors for central AC and no AC were used, based on the CA RASS (KEMA-XENERGY, Itron and RoperASW 2004).
- For "Don't Know" heating values, weighted averages of factors for electric and gas were used, based on the CA RASS (KEMA-XENERGY, Itron and RoperASW 2004).

Table E-2 and Table E-3 below show the assumed residential HVAC interaction factors assumed for this analysis.

[39] Room AC was assumed to use 37% of the energy of a central AC on an annual basis based on the US Residential Energy Consumption Survey (EIA 2005a). Evaporative AC was assumed to use 40% of the energy of a central AC, based on the CA RASS (KEMA-XENERGY, Itron and RoperASW 2004).

[40] For refrigeration measures, a demand interaction factor of 1.3 was assumed. For lighting and electronics measures, the assumed factor was 1.2.

Table E-2. Residential Refrigeration HVAC Interaction Factors

AC Type	Heating Type	kWh Interaction (kWh building/kWh end-use)	Peak kW Interaction (kW building/kW end-use)	Therms Interaction (therms building/kWh end-use)
Central AC	Gas	1.11	1.30	-0.0019
Central AC	Electric	1.07	1.30	0
Central AC	Both	1.09	1.30	0.00
Central AC	Don't know	1.10	1.30	-0.0017
Central AC	None	1.11	1.30	0
Room AC	Gas	1.04	1.11	-0.0019
Room AC	Electric	1.00	1.11	0
Room AC	Both	1.02	1.11	0.00
Room AC	Don't know	1.04	1.11	-0.0017
Room AC	None	1.04	1.11	0
Evap AC	Gas	1.06	1.16	-0.0019
Evap AC	Electric	1.02	1.16	0
Evap AC	Both	1.04	1.16	0.00
Evap AC	Don't know	1.05	1.16	-0.0017
Evap AC	None	1.06	1.16	0
No AC	Gas	1	1	-0.0019
No AC	Electric	0.96	1	0
No AC	Both	0.98	1.00	0.00
No AC	Don't know	0.995	1	-0.0017
No AC	None	1	1	0
Don't know	Gas	1.05	1.13	-0.0019
Don't know	Electric	1.01	1.13	0
Don't know	Both	1.03	1.13	0.00
Don't know	Don't know	1.04	1.13	-0.0017
Don't know	None	1.05	1.13	0

Table E-3. Residential Lighting and Electronics HVAC Interaction Factors

AC Type	Heating Type	kWh Interaction (kWh building/kWh end-use)	Peak kW Interaction (kW building/kW end-use)	Therm Interaction (therm building/kWh end-use)
Central AC	Gas	1.07	1.20	-0.0019
Central AC	Electric	1.03	1.20	0
Central AC	Don't know	1.07	1.20	-0.0017
Central AC	None	1.07	1.20	0
Room AC	Gas	1.03	1.07	-0.0019
Room AC	Electric	0.99	1.07	0
Room AC	Don't know	1.02	1.07	-0.0017
Room AC	None	1.03	1.07	0
Evap AC	Gas	1.04	1.11	-0.0019
Evap AC	Electric	1.00	1.11	0
Evap AC	Don't know	1.03	1.11	-0.0017
Evap AC	None	1.04	1.11	0
No AC	Gas	1	1	-0.0019
No AC	Electric	0.96	1	0
No AC	Don't know	0.995	1	-0.0017
No AC	None	1	1	0
Don't know	Gas	1.03	1.09	-0.0019
Don't know	Electric	0.99	1.09	0
Don't know	Don't know	1.03	1.09	-0.0017
Don't know	None	1.03	1.09	0

1.2 General Methods – Building Energy Simulation

Where significant interactions were expected to take place for building envelope and HVAC measures, savings estimates were determined by modeling in the building energy simulation tool eQUEST (James J. Hirsch n.d.), which provides default parameters for many commercial building types in California.

For commercial measures, a separate building model was developed for each respondent, based on their responses and using eQUEST default values (by building type and size) for all other building details. Each eQUEST baseline model's energy consumption was verified to be consistent with California Commercial End-Use Survey (CEUS) data for the same building type, size, heating, ventilation and air-conditioning (HVAC) system and fuel type (Itron Inc. 2006b).

For residential measures, representative residential eQUEST models were developed by Summit Blue and calibrated to typical consumption data in several climate zones representing the range of California climates. The models were divided into three general climate zones (*Northern Coastal*, *Southern Coastal*, and *Inland*) and calibrated to electric and gas Unit Energy Consumption (UEC) data from the California Residential Appliance Saturation Survey (KEMA-XENERGY, Itron and RoperASW 2004). Calibration was achieved by varying heating and cooling equipment efficiencies, window area, wall and ceiling insulation, lighting and equipment power densities, and heating and cooling thermostat setpoints. Models were calculated to within 2% of the relevant UEC values. In order to meet the heating and cooling UEC targets, heating and cooling setpoints were set out of reasonable range in many cases. This compensates for the observed phenomenon of households using AC and heating intermittently, even when conditions would suggest continuous usage.

The peak demand savings for measures simulated in eQUEST were estimated as the average of the three largest monthly kW demand savings occurring between May and October.

1.3 General Methods – Heated Water

To determine the energy savings associated with reduced consumption of heated water, the following algorithm was used to convert gallons of heated water into water heater energy savings:

$$Savings = \frac{HotWaterGallons \times Conv}{EF}$$

Where

- *Savings* is the annual energy savings of the measure (in therms for respondents with natural gas water heaters and kWh for respondents with electric water heaters)
- *HotWaterGallons* is the heated water saved annually (in gallons) as a result of the measure
- *Conv* is the conversion factor for converting gallons of heated water into energy usage (therms or kWh), which is calculated using the following algorithm:

$$Conv = \frac{(TankWaterTemp - InletWaterTemp) \times 8.29 Btu/°F/gallon}{BtuConversion}$$

Where

- *TankWaterTemp* is the water temperature (°F) in the water heater tank, which is assumed to be 130°F (Lutz 2005).
- *InletWaterTemp* is the water temperature (°F) entering the water heater, which is assumed to be 58°F (Lutz 2005).
- 8.29 Btu/°F/gallon is the empirical number of Btus needed to raise the temperature of a gallon of water one degree Fahrenheit
- *BtuConversion* is the conversion factor used to convert Btus to either kWh for respondents with electric water heaters (1 kWh = 3413 Btus) or therms for respondents with gas water heaters (1 therm = 100,000 Btus)

- *EF* is the energy factor for the respondent's water heater, represented as fractional value between 0 and 1 (e.g. an energy factor rating of 86 would have and EF value of 0.86) which was determined from survey responses or assumptions[41] regarding water heater tank type (standard tank or tankless), capacity (in gallons), efficiency level, fuel type (gas or electric), and vintage (see Table E-4)

Table E-4. Sources Used to Determine Water Heater Energy Factors Based on Water Heater Age and Efficiency

Water Heater Age	Water Heater Efficiency	Source of Assumed Energy Factor
<5 years	Energy Efficient	DEER 2008 for efficient residential water heaters (Itron Inc. 2009)
<5 years	Standard Efficiency	DOE 2004 Energy Conservation Standards for Water Heaters (DOE 2001)
>=5 years	Energy Efficient	DOE 2004 Energy Conservation Standards for Water Heaters (DOE 2001)
>=5 years	Standard Efficiency	DOE 1991 Energy Conservation Standards for Water Heaters (DOE 2001)
Age unknown	N/A	Age calculated as the average of the 1991 and 2004 DOE standards, weighted using data on age distribution of water heaters in PG&E terittory (KEMA-XENERGY, Itron and RoperASW 2004)

[41] If the water heater's type, size, or efficiency was unknown, it was assumed to be standard tank, 50 gallon, or standard efficiency water heater, respectively. If the fuel type was unknown, savings were calculated using a blended fuel mix. For the respondent's climate zone, the relative percentages of water heaters fueled by gas, electric, and propane were used to determine the respondent's savings (KEMA-XENERGY, Itron and RoperASW 2004). For example, if 90% of the water heaters in the respondent's climate zone are fueled by natural gas and 10% are fueled by electricity, then 90% of the savings related to water heating would be gas savings and 10% would be electricity savings.

1.4 Appliances

The following subsection describes energy savings estimate methods used for appliance measures. Demand savings for residential appliances were particularly challenging to develop. In many cases, the ratio of peak coincident demand (kW) to annual kWh for residential lighting measures in DEER was used as a proxy for unknown demand to energy ratios for other residential appliances.

Install an energy efficient dishwasher

Average savings for installing an energy efficient dishwasher were derived from the Energy Star Consumer Dishwasher Calculator, which compares the typical annual energy consumption of an Energy Star rated dishwasher to a similar conventional dishwasher. The calculation accounts for water heater fuel type and assumed usage based on DOE efficiency testing standards.[42] The Calculator did not provide peak load savings; the ratio of kW to kWh savings developed for lighting measures were multiplied by dishwasher kWh savings to estimate dishwasher demand savings.

Unplug electronics when not in use or use power strips

To determine the savings from this measure, it was assumed that unplugging electronics or using power strips reduced the amount of time the respondent's electronics were in non-use modes, such as idle, standby, or off, but still drawing load.

Energy savings were calculated using the following equation:

$$kWh = \sum_{i=1}^{n} NonUseWattage_i \times NonUseHours_i \times \%AttributableToBehavior_i \times IF_{kWh,i}$$

Where

- *kWh* is the annual electricity savings of this measure
- *n* is the number of electronic devices considered – users were asked about TV, DVD player, cell phone chargers, computers, electronic games, stereo equipment, and "other" equipment.
- $NonUseWattage_i$ is the wattage consumed by electronic type *i*, averaged across the typical non-use modes for each electronic, based on data collected by LBNL (LBNL n.d.)
- $NonUseHours_i$ is the total number of hours in a month (assumed to be 730 hours) minus the average number of hours that electronic type *i* is used in a month (Consumers Power, Inc. n.d.) (APS), (Public Service of New Hampshire n.d.), (City of Miami n.d.).
- $\%AttributableToBehavior_i$ is the percent of time that the respondent unplugs electronic *i* or uses a power strip and eliminates the non-use wattage as a result of the module, based on survey responses (see Table E-5 for the percent of time assumed in each combination of responses regarding the frequency that electronics were unplugged or used in a power strip before and after the audit).
- $IF_{kWh,i}$ is the electricity interaction factor, as determined through the approach presented in Section General Methods - Residential HVAC Interaction Factors1.1.

[42] DOE Federal Test Procedure 10 CFR 430

Table E-5. Frequency of action interpreted from response

Percent of time measure implemented		Frequency implemented BEFORE audit		
		"Always"	"Sometimes"	"Rarely"
Frequency implemented AFTER audit	"Always"	0%	50%	100%
	"Sometimes"	0%	0%	50%
	"Rarely"	0%	0%	0%

Demand savings for this measure were calculated by using the equation below:

$$kW = \sum_{i=1}^{n} NonUseWattage_i \times CF \times IF_{kW}$$

Where

- *kW* is the coincident peak demand savings.
- *n* is the number of electronic devices considered.
- *kW* is the coincident peak demand savings associated with the measure.
- *CF* is the coincidence factor used for all electronic types, assumed to be the same as the coincidence factor of 0.081 assigned to CFLs in KEMA 2005 CFL Metering Study (KEMA 2005).
- IF_{kW} is the peak demand interaction factor, as determined through the approach presented in Section 1.1.

If the respondent has gas heating, the calculations for this measure also reflected an increase in natural gas consumption due to the interactive effects between the reduced electronics usage and the respondent's heating system. These effects are reported as negative therm savings and quantified as the product of the end-use kWh savings times the appropriate interaction factor (see Section 1.1 for interaction factor values).

1.5 Building Envelope

Savings estimates were determined by modeling in the building energy simulation tool eQUEST (James J. Hirsch n.d.), described in Section 1.2.

Because all building envelope measures are directly correlated to building size, a significant contribution to uncertainty in this analysis was that some respondents in the Training Equipment survey did not provide (or provided multiple) building size information. In cases where of no size provided, building sizes were assumed based on building-type averages from the EIA Commercial Building Energy

Consumption Survey (CBECS) 2003 – averaged over the Western US only (EIA 2004). In cases where different building sizes were reported, the building size most often specified by the respondent was used.

Because the energy savings from building envelope measures are not additive, total savings for each respondent were determined by modeling all respondent reported measures at once. For each respondent, the attribution of savings to individual measures was then done by modeling a single measure at a time and determining the relative impact of each measure. The following equation summarizes this approach:

$$Savings_i = Savings\_Total * \frac{Savings\_eQUEST_i}{\sum_{j=1}^{n} Savings\_eQUEST_j}$$

Where:

- $Savings_i$ is the reported savings (kWh/kW/therms) for measure *i*.
- *Savings_Total* is the total reported savings (kWh/kW/therms) for all measures, as determined from modeling all measures together in a single eQUEST model.
- $Savings\_eQUEST_i$ is the savings for implementing a single measure, *i*, as determined by modeling measure *i* individually in eQUEST.
- $\sum_{j=1}^{n} Savings\_eQUEST_j$ is sum of savings from all (measures 1 though *n*) single-measure runs of eQUEST

The peak demand savings were estimated as the average of the three largest monthly kW demand savings occurring between May and October. The approach to attributing energy savings described above was also used for demand savings.

Because the demand savings from building envelope measures are not additive, demand savings for each respondent were determined by estimating the average demand savings for all respondent reported measures at once. For each respondent, the attribution of demand savings to individual measures was then done by modeling a single measure at a time and determining the relative impact of each measure.

The following subsections state the unique pre- and post-measure assumptions by measure.

Add a white roof

Savings for adding a white roof were estimated based on DEER data for the appropriate climate zones, building types and roof areas. Savings were adjusted to account for the impact of changing from old roof type to new roof type – DEER assumes an absorbance change from 0.80 to 0.45. For example, one respondent changed from a silver roof to a white roof, which resulted in no net impact.

Three respondents reported taking this action, all in the Equipment Training survey and all in Climate Zone 16, which represents the mountainous regions of California. For the two of these respondents for which there was a non-zero impact, the increase in natural gas consumption for heating was as significant or more than the reduction in electricity for air conditioning.

Add window caulking

eQUEST was used to simulate the impacts of adding window caulking by adjusting the air changes per hour (ACH) [43].

- For commercial respondents that reported taking this action in the Training Equipment survey, default commercial eQUEST models were used as the initial condition and ACH was reduced by 0.05 for the post-measure conditions.
- For residential respondents that reported taking this action in the AMBAG survey, Summit Blue's calibrated residential eQUEST models were used as the initial condition and ACH was reduced by 0.025 for the post-measure conditions.

Add weather stripping

Surveys: CYES, CEP-Residential, AMBAG

eQUEST was used to simulate the impacts of adding weather stripping by adjusting the air changes per hour (ACH) [44]. For residential respondents who reported taking this action, Summit Blue's calibrated residential eQUEST models were used as the initial condition and ACH was reduced by 0.1 for the post-measure conditions.

Replace windows

eQUEST was used to simulate the impacts of replacing windows by adjusting window type to match respondents specifications. The following selections from the eQUEST window library and relevant assumptions were used:

- Single Pane = Glass Type 1000
- Double Pane = Glass Type 2000
- Double Low-e, cooling climate = Glass Type 2630
- Double Low-e, heating climate = Glass Type 2640
- Aluminum Frame U-Value = 1
- Wood Frame U-Value = 0.4
- Vinyl Frame U-Value = 0.3
- If no detail was given, an upgrade from single pane glass with aluminum frames to double low-e glass, vinyl frames was assumed.

Survey: Training Equipment

[43] The DEER 2005 infiltration reduction increment is -0.1 ACH. This assumes the following weatherization measures, attic access weather-stripping, caulking, door weather-stripping, and installation of outlet gaskets (Itron Inc. 2006). The window caulking measure is assumed to achieve ½ of this reduction in commercial buildings and ¼ of this reduction in residential buildings.

[44] The DEER 2005 infiltration reduction increment is -0.1 ACH. This assumes the following weatherization measures, attic access weather-stripping, caulking, door weather-stripping, and installation of outlet gaskets (Itron Inc. 2006). The weather stripping measure is assumed to be broad enough to achieve the majority of this reduction in residential buildings.

For the Equipment Training survey, baseline windows were specified but no information was given on the improved windows. For this survey, it was assumed that windows were upgraded by one level of efficiency (e.g. single pane to double pane, double clear to double low-e, etc).

Solar screens or film

eQUEST was used to simulate the impacts of using solar screens or film. No specific information was provided by the respondents on the screens or films installed; Summit Blue assumed that window solar transmittance was reduced by 75% from June to September and that 80% of the time that the heating system was operating, screens would be rolled up and out of the way.

Insulation

Insulation was the one building envelope measure that was adequately addressed in DEER. Therefore, DEER savings were used; the DEER savings were preferable to using default eQUEST models, even though the non-additive effects of simultaneous building envelope measures could not be captured. Savings from insulation measures were added to eQUEST-determined savings for all other building envelope measures. Savings were based on DEER data by climate zone and building type and adjusted for indicated respondent building area.

Add interior shades/drapes

eQUEST was used to simulate the impacts of adding interior shades and drapes by adjusting the *shading* parameter values. For commercial buildings, default eQUEST commercial models with no shading were assumed as the baseline. For the post-measure case, "movable interior" shades were specified on select windows, with a specified shading schedule.

In the Equipment Training survey, respondents were asked to specify what percentage of windows had shades installed, but not which facades. To provide a conservative estimate: for a specified percentage greater than 10 percent, it was assumed that interior shades were installed on the specified percentage of windows (as a percentage of total window area) on each façade. For 10 percent and less, it was assumed that interior shades were installed on the specified percentage of windows on the south façade only.

In the CEP Small Business survey, the single respondent the reported taking this action specified the percentage of windows that had shades installed, but did not provide a detailed schedule. Instead, the respondent stated that "Blinds are closed whenever it's sunny on that side." As such, the following schedule was defined in eQUEST: East facade shades drawn 8-12pm, west facade 12-5pm, north/south 10-2pm.

For residential respondents that reported taking this action in the AMBAG survey, Summit Blue's calibrated residential eQUEST models were used as the initial condition. No specific information was provided on when shades would be used; we assumed that window solar transmittance was reduced by 40% from June to September and that 80% of the time that the heating system is operating, the shades were open.

Add exterior awnings

For commercial respondents that reported taking this action in, default commercial eQUEST models with "no shading" were used for the baseline and "overhang" for the post-measure case. Dimensions of the overhang were obtained from survey responses.

For the Equipment Training survey, respondents were asked to specify what percentage of windows had awnings installed, but not which facades. To provide a conservative estimate, it was assumed that awnings were installed on the specified percentage of windows (as a percentage of total window area) on each façade.

Add door shoe

eQUEST was used to simulate the impacts of adding door shoes by adjusting the air changes per hour (ACH)[45]. For commercial respondents that reported taking this action in the CEP Small Business survey, default commercial eQUEST models were used as the initial condition and ACH was reduced by 0.05 for the post-measure conditions[46].

Close shades in the summer

The same approach as described for "Add interior shades/drapes" (Section 0) was used for respondents who reported closing shades in the summer.

1.6 HVAC

DEER was used to determine energy and demand savings from HVAC measures when possible: unit savings values given in DEER were scaled by quantities given in survey responses to arrive at overall savings figures. Preference was given to the updated DEER 2008 (Itron Inc. 2009) values when applicable; DEER 2005 (Itron Inc. 2006) values were used for measures not found in the 2008 update.

Where DEER measures were not applicable, percent savings values sourced from secondary literature review were applied to baseline energy intensities from the CEUS (Itron Inc. 2006b) to determine overall savings.

Where significant interactions were expected to take place, savings estimates were determined by modeling in the building energy simulation tool eQUEST (James J. Hirsch n.d.), described in Section 1.2.

In order to avoid double counting, zero savings were assigned to all but one measure in a number of cases in which it appeared that a respondent answered questions for multiple measures based on one action.

Because all HVAC system size is directly correlated to building size, a significant contribution to uncertainty in this analysis was that some respondents in the Training Equipment survey did not provide or provided multiple building size information. In the case of no size provided, building sizes were assumed based on building-type averages from CBECS 2003 – averaged over the Western US only (EIA 2004). In cases where multiple building sizes were reported, the building size most often specified by the respondent was used.

[45] The DEER 2005 infiltration reduction increment is -0.1 ACH. This assumes the following weatherization measures, attic access weather-stripping, caulking, door weather-stripping, and installation of outlet gaskets (Itron Inc. 2006). The window caulking measure is assumed to achieve ½ of this reduction in commercial buildings and ¼ of this reduction in residential buildings.

[46] The DEER 2005 infiltration reduction increment assumes the following weatherization measures, attic access weather-stripping, caulking, door weather-stripping, and installation of outlet gaskets (Itron Inc. 2006). The assumption here is that door weather-stripping accounts for a significant portion but not all of the infiltration reduction.

The following subsections describe the savings estimate approach for each of the actions reported by respondents.

Install attic exhaust fan

Studies of attic exhaust fans have consistently shown that the savings from attic exhaust fans are equal to or less than the increase in energy needed to power the fan[47]. As such, no energy savings were attributed to this action.

Replace heating system

Savings for replacing residential heating systems were determined from eQUEST simulations, using the calibrated residential models described in Section 1.2. Respondents did not provide information about the replacement (efficient) unit; it was assumed to be a 90 AFUE gas furnace, which is the middle of the range of efficiencies for Energy Star furnaces (EnergyStar 2009).

Savings for replacing commercial heating systems were determined from DEER 2008 and are based on survey responses including climate zone, building vintage, system type, fuel, size and efficiency.

Where base unit efficiency was not specified, code minimum baselines were used to produce the most conservative estimate. Where the efficiency of the efficient unit was not specified, the least efficient of the efficient units specified in DEER was used (Itron Inc. 2009).

Cooling system

Savings estimates for replacing (or installing new) cooling systems were determined from DEER 2008 and are based on survey responses including climate zone, building vintage, system type, fuel, size and efficiency.

- Respondents in the CEP Small Business survey were not asked to provide base unit efficiency. A single respondent reported replacing an old unit that no longer worked; the DEER code minimum baseline was assumed. Cooling capacity was not a specific question for this section; to determine capacity, respondents were assigned cooling capacity based on a tons-per-square-foot average.[48]
- Where base unit efficiency was not specified, code minimum baselines were used to produce the most conservative estimate. Where the efficiency of the efficient unit was not specified, the least efficient of the efficient units specified in DEER was used (Itron Inc. 2009).

Had an HVAC tune up

Savings from HVAC tune-ups were estimated based on the fractional contributions of various "tune up" activities toward a maximum HVAC Tune Up savings percentage.[49] Various activities which contributed to the total maximum savings percentage were indicated by survey respondents and summed. The final

[47] Sources include: "Fundamentals of Residential Attic Ventilation" (Wolfert and Hinrichs 1974); "Venting of attic cathedral ceilings", ASHRAE 2002; (Rose and TenWolde 2002); and "Performance Assessment of Photovoltaic Attic Ventilator Fans" (Parker and Sherwin 2007).

[48] 30 BTUs per square foot or 500 square feet per ton.

[49] Based HVAC Maintenance and Energy Savings" (Piper 2009), which suggests a maximum of 15% savings. The extensive list of tune-up actions in this survey warranted a higher maximum savings (20%). The maximum savings estimated for any respondent was 13.5%.

percentage savings for each respondent was multiplied by the HVAC energy and peak load intensities from the California Commercial End Use Survey (CEUS) for the specified building type.

Each maintenance change action was given a weighting factor, based on relative importance in optimizing overall system maintenance[50]. Respondents were assigned points for each action which was reported to be done more frequently after the course than before. Total savings were then calculated by scaling the 20% of total HVAC load by the ratio of assigned maintenance change points to total possible points. Table E-6 states the points assigned to each possible action.

Table E-6. HVAC Maintenance Change Points

Action	Priority	Points
Adjust bypass dampers	Medium	2
Clean or replace the filters	High	3
Check fan blades for tightness	Medium	2
Lubricate fan motor	Low	1
Adjust operating pressures	High	3
Evaluate vent system	Medium	2
Clean blower wheel	Low	1
Inspect valves	Medium	2
Tighten electrical connections	Low	1
Evaluate safety controls	Low	1
Measure temperature difference	High	3
Adjust thermostat calibration	High	3
Check start and run capacitors	Low	1
Check start and run delays	Medium	2
Measure voltage differences	Low	1
Measure amperage draw	Low	1
Test fan limit switch	Low	1
Test thermocouple	Medium	2
Check evaporator coil	Medium	2
Monitor expansion valve	Low	1
Clean evaporator drain	Low	1
Clean condenser coil	High	3
Clean condenser coil	High	3
Monitor refrigerant level	Medium	2
Clean and adjust burners	Medium	2
Set burner adjustment	Medium	2

[50] Estimate, no secondary source found.

Action	Priority	Points
Measure gas input	Medium	2
Clean combustion chamber	High	3
Clean heat exchanger	Medium	2
Maximum Maintenance Points		***55***

Demand savings were scaled by a coincidence factor of 0.85 to determine coincident peak savings.[51]

Other - Better cooler maintenance (cleaning condenser coils)

Savings for cleaning condenser coils were estimated based on typical cooling requirements (tons) and DEER data savings per ton cooling from the DEER 2005 measure "Dirty Air-cooled condenser coils are cleaned" by climate zone and building type. Respondent building cooling requirements were based on typical area covered per ton of cooling (400sqft/ton) and the survey respondent building area.

Clean/replace AC Filter

For respondents who reported cleaning or replacing air conditioner filters, a 5% savings was applied to baseline energy consumption data from CEUS (for commercial sites) or eQUEST (residential sites).[52] The same percent value was applied to the baseline demand to estimate demand savings.[53] For commercial sites, coincident peak demand savings were scaled by a coincidence factor of 0.85 to produce coincident peak savings (CEUS baseline demand is non-coincident).[54]

Replace or clean the heater filter

For respondents who reported cleaning or replacing heater filters, a percent savings was applied to baseline electric energy consumption data from CEUS (for commercial sites) or eQUEST (residential sites). A 2 percent value was used for replacing the heating filter.[55] Peak demand savings were assumed to be zero, due to the CA summer peak.

Replace the AC window seal

This measure was mentioned in the CEP Small Business survey, but no respondents reported taking this action.

Lower heating thermostat

For residential respondents (CYES, CEP Residential, and AMBAG surveys) who reported lowering the heating setpoint on their thermostat, baseline energy consumption was determined from eQUEST

[51] Estimate, based typical coincidence factor for HVAC measures in California.

[52] Assumes 2% from reduced fan energy, 3% from reduced coil fouling over the lifetime of the equipment, based on the lower bound estimate from EERE (EERE 2009). This estimate is supported by a 5% of the total heating and cooling energy savings estimate for optimizing air filters (Matela 2007).

[53] See Section 1.2 for details on how peak demand savings was estimated using eQUEST.

[54] Estimate, based on high coincidence of HVAC use with CA summer peak.

[55] Based on average energy savings (KEMA 2003). This estimate is supported by a 5% of the total heating and cooling energy savings estimate for optimizing air filters (Matela 2007).

simulation, and a percent savings from a literature review was taken from this baseline. Due to the out-of-range heating setpoints used in the residential eQUEST models (see discussion in Section 1.2), directly changing the thermostat setpoints in the model resulted in unreasonably large savings. Instead, savings percentages per degree decrease in heating setpoint were assumed to be 8.33% for gas heat and 6.19% for electric heat, based on the EIA's "Household Energy Consumption and Expenditures 1997" (EIA 1997). Peak demand savings were assumed to be zero, since California has a summer peak. Where no information on the magnitude of the change in heating setpoint was given, a 2 °F decrease was assumed.[56]

For commercial respondents (CEP Small Business) baseline annual cooling energy consumption was determined through eQUEST simulation, as was energy consumption after changes to the heating thermostat settings were made. The respondent that reported lowering heating setpoints provided neither pre- nor post-measure heating setpoints. As such, the eQUEST default setpoints were assumed.[57] A 2 degree day-long decrease in the thermostat setpoint was assumed for the measure.

Respondents were not asked to specify heating capacity: eQUEST system size defaults were used.

Use fans instead of air conditioning

For respondents who reported using fans instead of air conditioning, it was assumed that respondents applied a 4 °F thermostat setback savings[58] and that 30% of the energy savings from this setback were consumed by the fans[59]. Energy consumption for the baseline and setback cases were determined from eQUEST simulation[60].

Respondents were not asked to specify the amount of time the cooling system operation was reduced, or to what temperature, so it was assumed that a 4 °F setback was deployed during the occupied time period.

The savings estimate was then multiplied by the estimated frequency change. Based on responses to the question of fan use pre/post fan-use frequency, a matrix was created to estimate the impact of the measure. This matrix is provided in Table E-7. This same process was used to determine the peak demand and natural gas savings.

Table E-7. Frequency Change Matrix

		Frequency implemented before audit			
		Always	**Sometimes**	**Rarely**	**Unsure**
Frequency implemented after the audit	**Always**	0%	50%	100%	100%
	Sometimes	0%	0%	50%	50%
	Rarely	0%	0%	0%	0%

[56] This is assumed to be the same as the default change in cooling setpoint. See cooling setpoint section for details.

[57] eQUEST default heating thermostat settings are 74 and 72 °F during the occupied and unoccupied settings respectively (James J. Hirsch n.d.).

[58] Assumed allowable increase in thermostat setting (Ruiz n.d.) (DOE 2001).

eQUEST default cooling thermostat settings are 76 and 78 °F during the occupied and unoccupied settings respectively (James J. Hirsch n.d.).

[59] Estimate, no secondary source found.

[60] Each eQUEST baseline model energy consumption was verified to be consistent with CEUS data for the same building type, size, HVAC system and fuel type (Itron Inc. 2006b).

Raise cooling thermostat (less cooling)

For commercial respondents, baseline and post-measure annual cooling energy consumption was determined from eQUEST simulations. Two respondents reported raising the cooling setpoint on their thermostat. However, neither respondent provided pre- or post-measure cooling setpoints. As such, the eQUEST default setpoints were assumed.[61] A 2°F daylong increase in the thermostat setpoint was assumed for the measure.

Respondents were not asked to specify cooling capacity: eQUEST system size defaults were used.

For residential respondents, baseline energy consumption was determined from eQUEST simulation. Due to the out-of-range cooling setpoints used in the residential eQUEST models (see Section 1.2), directly changing the thermostat setpoints in the model resulted in unreasonably large savings. Instead, savings percentages per degree increase in cooling setpoint were taken as 2%, the middle of the range given by the California Energy Commission Consumer Energy Center (CEC 2009). Peak demand percent savings were assumed to be the same as percent energy savings. Where no information on the magnitude of the change in cooling setpoint was given, a 2 °F increase was assumed.[62]

1.7 Laundry

This section describes the methods used for estimating savings from laundry measures.

Several of these measures where behavioral in nature; respondents were asked how frequently they took this action, both before and after the home audit. Table E-8 summarizes the assumptions made about frequency based on responses.

Table E-8. Frequency Change Matrix

		Frequency implemented before audit			
		Always	**Sometimes**	**Rarely**	**Unsure**
Frequency implemented after the audit	**Always**	0%	50%	100%	100%
	Sometimes	0%	0%	50%	50%
	Rarely	0%	0%	0%	0%

[61] eQUEST default cooling thermostat settings are 76 and 78 °F during the occupied and unoccupied settings respectively (James J. Hirsch n.d.).

[62] This was the median result from the CA Flex Alert Program for changes in AC setting (Summit Blue Consulting 2008).

Clothesline

For respondents who reported using clotheslines instead of dryers, engineering algorithms were used to estimate demand and energy (kWh and therm) savings. For units with an unknown fuel type, a blend was estimated between electric and gas heating; therefore, these units resulted in both electric and gas savings.

The following algorithm was used to determine energy savings:

$$Savings_{kWh/therms} = EUPL \times LineDriedLoads \times AnnualOccupancyWeeks \times IF$$

Where

- $Savings_{kWh/therms}$ is the annual energy savings, in kWh for respondents with electric dryers and therms for respondents with natural gas dryers.
- *EUPL* is the average dryer energy use per load assumed to be 2.33 kWh/load for electric dryers and 0.10 therms/load for gas dryers, from DEER 2005 (Itron Inc. 2006)
- *LineDriedLoads* is the number of loads line-dried per week from the survey responses
- *AnnualOccupancyWeeks* are the number of weeks the residence is occupied per year, assumed to be 50 weeks per year (Schuldt and Tachibana 2008)
- *IF* is the interaction factor, assumed to be zero for this measure based on engineering judgment[63]

Demand savings from electric dryers was then calculated as:

$$Savings_{kW} = \frac{kWh \times PeaktoEnergyFactor}{1{,}000}$$

Where

- $Savings_{kW}$ is the coincident peak demand savings
- *kWh* is the energy savings from the equations below
- *PeaktoEnergyFactor* is assumed to be 0.371 W/kWh based on a DEER 2005 (Itron Inc. 2006).

Other - Clothes Dryer

Savings estimates for gas and electric clothes dryers were determined from DEER 2005. Because the type of fuel for the dryers was not indicated by respondents, a weighted average of savings for dryers based on penetration of gas and electric dryers in the appropriate climate zones was created according to the DEER 2005 data and the California Residential Appliance and Saturation Survey (RASS). Weighted average savings were assigned to each respondent.

Install an energy efficient clothes washer

Electricity and gas savings for installing an efficient clothes washer were determined using the Energy Star Calculator for Clothes Washers (EPA 2009). The number of loads washed per week and water heater fuel type specified by the respondent were used.[64]

[63] The heat from a dryer is typically vented outside of a single-family home.

[64] If the water heater fuel type for a respondent was unknown, savings were calculated using a blended fuel mix. For the respondent's climate zone, the relative percentages of water heaters fueled by gas, electric, and propane were

To find the demand savings, the analysis assumed that the demand-to-energy ratio (kW/kWh) for a clothes washer is similar to that ratio for lighting. Using the demand-to-energy ratio determined from DEER 2008 (Itron Inc. 2009) for CFLs, the electricity savings for each respondent were converted into demand savings.

Wash and dry clothes with a full load only

Energy savings for only washing and drying clothes with a full load were based only on annual electricity consumption by the washer. No hot water reductions were assumed since water usage for clothes washers is proportional to the load size. The washer electricity consumption reductions were based on unit energy electricity consumption (UEC) values for single family residences in the California Residential Appliance Saturation Survey (RASS). Usage changes were based on qualitative survey data for prior and post frequency of full load clothes washing ("always", "sometimes", "rarely", "unsure"). The assumed frequencies of taking this action are summarized in Table .

Demand savings were determined by applying the demand-to-energy ratio determined from DEER 2008 (Itron Inc. 2009) for CFLs to the electricity savings for each respondent.

Wash clothes in cold waters

Savings from washing clothes in cold (rather than warm or hot) water were estimated using the following formula, with inputs taken from survey responses and literature review:

$$Savings = \frac{(\%Less_{HotLoad} \times \%HW_{HotLoad} + \%Less_{WarmLoad} \times \%HW_{WarmLoad}) \times GPL \times LPW \times WPY \times Conv}{EF}$$

Where

- *Savings* is the annual energy savings of the measure (in therms for respondents with natural gas water heaters and kWh for respondents with electric water heaters).
- $\%Less_{HotLoad}$ is the percent of loads washed in cold water instead of hot water after the audit based on the frequency that the measure is implemented before and after the audit, assumed from survey responses (see Table).
- $\%HW_{HotLoad}$ is the percent of water that is heated in a hot load of laundry, assumed to be 100% for this analysis.
- $\%Less_{WarmLoad}$ is the percent of loads washed in cold water instead of warm water after the audit based on the frequency that the measure is implemented before and after the audit, assumed from survey responses (see Table).
- $\%HW_{WarmLoad}$ is the percent of water that is heated in a warm load of laundry, assumed to be 50% for this analysis.
- *GPL* is the gallons of water used per load of laundry, assumed to be 40 gallons per load for conventional washers (CEC 2009) and 14.77 gallons per load for efficient washers (EPA 2009).
- *LPW* is the loads per week of laundry done in the respondent's household, based on survey responses provided or assumed to be 3.8, which is the weighted average number of loads washed per week in PG&E territory (KEMA-XENERGY, Itron and RoperASW 2004).
- *WPY* is the weeks per year that the respondent does laundry, assumed to be 50 weeks (Schuldt and Tachibana 2008).

used to determine the respondent's savings (KEMA-XENERGY, Itron and RoperASW 2004). For example, if 90% of the water heaters in the respondent's climate zone are fueled by natural gas and 10% are fueled by electricity, then 90% of the savings related to water heating would be gas savings and 10% would be electricity savings.

- *Conv* is the conversion factor for converting gallons of heated water into energy usage, which is calculated using the approach described in Section 1.3.
- *EF* is the energy factor for the respondent's water heater, which is based on survey responses or assumptions regarding water heater tank type (standard tank or tankless), capacity (in gallons), efficiency level, fuel type (gas or electric), and age (see Section 1.3).

The pre- and post-event frequency of taking this action were Savings were not calculated for respondents that reported no increase or change in the frequency that they wash their clothes in cold water.

Coincident peak demand savings were calculated for the respondents with an electric water heater by applying the demand-to-energy ratio (kW/kWh) used in DEER 2008 for its residential water heater replacement measures (Itron Inc. 2009) to the kWh savings.

No interactive effects were quantified for this measure: it was assumed that the respondent's water heater was most likely located in an unconditioned portion of the house.

Less clothes dryer usage

No savings were quantified for this measure because all of the respondents who reported taking this action also reported that they used a clothesline. Savings were only quantified for using a clothesline (Section 0) to avoid double-counting savings.

1.8 Lighting

Lighting savings values were obtained from DEER 2008 (Itron Inc. 2009). These savings estimates were adjusted by reported hours of operation and other details provided by respondents. The following subsections describe the savings estimate approach for each of the actions reported by respondents.

Install CFLs

Residential Lighting - Replaced existing incandescent light bulbs with CFLs

Energy and demand end-use savings from upgrading from incandescent to CFL light bulbs were calculated by scaling DEER savings values per annual hour of operation by the annual hours of use reported by respondents. DEER end-use savings were scaled by the custom derived HVAC interaction factors described in Section 1.1 to determine whole-building savings. The following equations were used to calculate annual energy savings (kWh and therms) and peak coincident demand savings (kW):

$$Savings_{kWh} = SavingsPerLamp_{kWh} * NumberOfLamps * \frac{HoursPerYear_{respondent}}{HoursPerYear_{DEER}} * InteractionFactor_{kWh}$$

$$Savings_{kW} = SavingsPerLamp_{kW} * NumberOfLamps * InteractionFactor_{kW}$$

$$Savings_{therms} = SavingsPerLamp_{kWh} * NumberOfLamps * \frac{HoursPerYear_{respondent}}{HoursPerYear_{DEER}} * InteractionFactor_{therms}$$

Where:

- $Savings_{kWh}$ is the annual electric energy savings (kWh).
- $SavingsPerLamp_{kWh}$ is the annual end-use energy savings (kWh) per lamp, obtained from DEER.
- *NumberOfLamps* is the number of lamps, obtained from the survey.
- $HoursPerYear_{respondent}$ is the annual hours of operation, obtained from the survey.
- $HoursPerYear_{DEER}$ is the annual hours of operation assumed in DEER.
- $InteractionFactor_{kWh}$ is the derived kWh HVAC interaction adjustment factor (kWh whole-building/kWh end-use).
- $Savings_{kW}$ is the coincident peak demand (kW) savings.
- $SavingsPerLamp_{kW}$ is the end-use coincident peak demand savings (kW) per lamp, obtained from DEER.
- $InteractionFactor_{kW}$ is the kW HVAC interaction adjustment factor (kW whole-building/kW end-use).
- $Savings_{therms}$ is the annual gas energy savings (therms).
- $InteractionFactor_{therms}$ is the therm HVAC interaction adjustment factor (therms whole-building/kWh end-use).

Table E-9 states the data requirements and their sources for this measure.

Table E-9. Data Requirements for Residential Lighting Incandescent to CFL Analysis

Data Requirements	Source	Treatment of Missing/Irregular Data
CFL Wattage	Survey	used the DEER assumption for equivalent CFL wattage to convert incandescent wattage from survey.
Number of Lamps	Survey	cap number of lamps at a ratio of one lamp per 100 square feet
Hours per Year	Survey	cap hours per day at DEER assumption of 2.18, assume 6.7 days per week, 49 weeks per year (average of other responses) for missing data
Home Vintage	Survey	assume pre-1970 because 58% of CA homes were built prior to 1975 (KEMA 2004)
Square Footage of Home	Survey	for missing data, use average square footage by home vintage from RASS
Energy Savings per Lamp (kWh)	DEER (based on CFL wattage & home vintage - blended AC and climate zones)	
Energy Savings per	DEER (based on CFL	Note these are actually negative savings (the

Data Requirements	Source	Treatment of Missing/Irregular Data
Bulb (therms)	wattage & home vintage - blended AC and climate zones)	result of increased heating requirements due to more efficient lighting).
Demand Savings per Lamp (kW)	DEER (based on CFL wattage & home vintage - blended AC and climate zones)	

Commercial Lighting – Add or retrofit lighting - replaced existing incandescent light bulbs with CFLs

Savings from upgrading from incandescent to CFL lamps were calculated for three commercial respondents out of a total of five who reported switching to CFLs (two respondents did not provide enough information to calculate savings).

Energy and demand savings were calculated by scaling DEER 2008 savings values per annual hour of operation by the annual hours of use reported by respondents (Itron Inc. 2009). The following equations were used to calculate annual energy savings (kWh and therms) and peak coincident demand savings (kW):

$$Savings_{kWh} = SavingsPerLamp_{kWh} * NumberOfLamps * \frac{HoursPerYear_{respondent}}{HoursPerYear_{DEER}}$$

$$Savings_{kW} = SavingsPerLamp_{kW} * NumberOfLamps$$

$$Savings_{therm} = SavingsPerLamp_{therm} * NumberOfLamps$$

Where:

- $Savings_{kWh}$ is the annual energy savings (kWh).
- $SavingsPerLamp_{kWh}$ is the annual savings (kWh) per lamp, obtained from DEER.
- $NumberOfLamps$ is the number of lamps, obtained from the survey.
- $HoursPerYear_{respondent}$ is the annual hours of operation, obtained from the survey.
- $HoursPerYear_{DEER}$ is the annual hours of operation assumed in DEER.
- $Savings_{kW}$ is the coincident peak demand (kW) savings.
- $SavingsPerLamp_{kW}$ is coincident peak demand savings (kW) per lamp, obtained from DEER.
- $Savings_{therm}$ is the annual natural gas (therm) savings.

$SavingsPerLamp_{therm}$ is the annual natural gas savings (therm) per lamp, obtained from DEER. Table E-10 states the data requirements and their sources for this measure.

Table E-10. Data Requirements for Commercial Lighting Incandescent to CFL Analysis

Data Requirements	Source	Treatment of Missing/Irregular Data
CFL Wattage	Survey	Assumed 20 W when wattage was not specified.
Number of Lamps	Survey	n/a
Hours per Year	Survey	n/a
Building Type	Survey	n/a
Energy Savings per Lamp (kWh)	DEER (based on CFL wattage & building type - blended AC and climate zones)	
Energy Savings per Bulb (therms)	DEER (based on CFL wattage & building type - blended AC and climate zones)	Note these are actually negative savings (the result of increased heating requirements due to more efficient lighting).
Demand Savings per Lamp (kW)	DEER (based on CFL wattage & building type-blended AC and climate zones)	

Add or retrofit lighting

Savings per fixture for T5, T8, CFL's and exit sign lighting retrofits were obtained from DEER by climate zone and building type. For these measures, peak load reduction was estimated from DEER.

- Savings from "de-lamping" were based on the number of lamps removed, the wattage of removed lamps, and the previous typical annual usage of the removed lamps.
- Savings from "changed operation of lighting" were based on the number of lamps affected, the wattage of affected lamps, and the annual reduction in usage of the affected lamps.

Lighting controls

Because survey respondents specified that occupancy sensors, lighting timers and daylighting sensors were installed to control different lights in different areas of the building, the lighting measures were analyzed separately. Additionally, some respondents only reported implementing some, but not all three, of these lighting control measures.

For all measures, savings were estimated by applying a measure-specific percent savings (determined from DEER (Itron Inc. 2006)) to the baseline energy consumption assumed for each respondent (determined from CEUS (Itron Inc. 2006b)). Energy savings for this module were computed from the following equations:

$$kWh = SquareFootage * PercentAffected * EndUseIntensity_{electric} * PercentSavings_{measure}$$

$$kW = kWh * DEER_{kWperkWh}$$

$$therms = kWh * DEER_{thermsperkWh}$$

Where:

- *kWh* is the annual electric energy savings
- *SquareFootage* is the average building size.
- *PercentAffected* is the percent of conditioned floor area affected by the measure, which was obtained from survey response if available or otherwise assumed 90% (based on average of responses given for this question).
- $EndUseIntensity_{electric}$ is the baseline annual electric load intensity (kWh/square foot), for the end-uses affected by the measure. These values were obtained from CEUS (Itron Inc. 2006b).
- $PercentSavings_{measure}$ is the measure-specific percent energy savings from baseline consumption. Obtained from DEER 2005 (Itron Inc. 2006).
- *kW* is the coincident peak demand savings.
- $DEER_{kwperkWh}$is the ratio of demand savings to energy savings (kW/kWh) for specific end-uses and climate zones; these ratios were derived from DEER 2005 measures (Itron Inc. 2006).
- *therms* is the annual natural gas savings.
- $DEER_{kwperkWh}$is the ratio of therm to kWh savings (therms/kWh) for specific end-uses and climate zones; these ratios were derived from DEER 2005 measures (Itron Inc. 2006).

Replace two light bulbs for one higher output bulb

A single respondent reported replacing two light bulbs with a single, higher output bulb. The respondent reported installing 12 x 60W replacement bulbs; it was assumed that these 12 bulbs replaced 24 x 40W bulbs. Energy savings were estimated from the average annual CFL usage time per room in a typical home based on "Illuminating Current CFL Usage Patterns: Results from a CFL Metering Study" (Rasmussen, Gaffney and Rubin 2006) and the indicated change in power consumption of lighting. End-use savings were multiplied by appropriate interaction factors (see Section 1.1) to calculate whole building savings.

Peak load savings were estimated by multiplying kWh savings by the kW to kWh ratio derived from residential lighting measures in DEER.

Turn off lights when not in use

Survey respondents were asked to provide information about the rooms in which they began turning off lights and how many additional hours per day they began turning off the lights in that room as a result of the audit. In order to quantify savings from these actions, assumptions were made regarding the total number of lights and light fixture wattage typically found in each room type. Thus, savings were calculated for each room that respondents mentioned and then aggregated over the entire house. The following equations were used to calculate the savings ***in each room:***

$$kW = FixturesPerRoom \times WattsPerFixture \times CF \times IF_{kW}$$

$$kWh = \frac{FixturesPerRoom \times WattsPerFixture \times HoursOffPerDay \times DaysPerYear \times IF_{kWh}}{1000}$$

Where

- *kW* is the coincident peak demand savings as a result of the measure
- *FixturesPerRoom* is the average number of light fixtures assumed for each room type, as shown in Table E-11.

Table E-61. Average Number of Light Fixtures Per Room By Room Type[65]

Room Type	Number of fixtures per room (estimate)
Living/family room	6.5
Dining room	3.5
Den/office	1
Kitchen	3.5
Bedrooms	8
Bathrooms	7
Hallways	2

- *WattsPerFixture* is the average number of watts per light fixture, assumed to be a 40-watt incandescent bulb.
- *CF* is the coincidence factor, assumed to be 0.081 based on "CFL Metering Study: Peak Hour Load Share" (KEMA 2005).
- IF_{kW} is the peak demand interaction factor, as determined through the approach presented in Section 1.1.
- *kWh* is the annual energy savings as a result of the measure.
- *HoursOffPerDay* is the incremental hours per day that the lights are turned off in a room as a result of the measure.
- *DaysPerYear* is the number of days per year that occupants are at home, assumed to be 350 days per year.
- IF_{kWh} is the electricity interaction factor, as determined through the approach presented in Section 1.1.

If the respondent has gas heating, the calculations for this measure also reflect an increase in natural gas consumption due to the interactive effects between the reduced lighting usage and the respondent's heating system. These effects are reported as negative therm savings and quantified as the product of the

[65] Source: (Rasmussen, Gaffney and Rubin 2006) and (KEMA-XENERGY, Itron and RoperASW 2004).

end-use kWh savings times the appropriate interaction factor, as discussed in Section 1.1. Aside from these interactive effects, there were no natural gas savings identified for this measure.

If the respondent did not provide information about the additional number of hours per day that they turned the lights off in a room, they were assigned an average number of hours of use, based on "Illuminating Current CFL Usage Patterns: Results from a CFL Metering Study" (Rasmussen, Gaffney and Rubin 2006) (see Table E-2), and assumed to have reduced their hours of use by 50% as a result of the audit.

Table E-12. Assumed Number of Hours Lights Turned Off for Respondents That Did Not Provide This Information

Room Type	Assumed average hours of use per day before the audit	Assumed additional hours turned off per day after the audit
Living/family room	2.5	1.25
Dining room	2	1
Den/office	2	1
Kitchen	3.5	1.75
Bedrooms	1.6	0.8
Bathrooms	1.5	0.75
Hallways	1.6	0.8

1.9 Motors

Added or replaced motors

Engineering calculations were used to estimate energy and demand savings for adding efficient motors and/or replacing motors with efficient motors. For each respondent and measure, the base annual energy consumption of the original motor configuration was calculated; then depending on the measure type, either 1) the same equation was used to calculate the new motor's energy consumption (which was subtracted from the base consumption to obtain savings) or 2) a percentage reduction was applied to the base consumption.

The equation used to calculate annual energy (kWh) consumption was:

$$Savings_{kWh} = Number\_of\_Units * HP * Conversion_{HPtoKW} * Hours * Loading * \frac{1}{\eta}$$

Where:

- $Savings_{kWh}$ is the annual kWh savings the measure
- *Number_of_Units* is the number of units (motors or pump motors) affected by the measure, as reported by the respondent.

- *HP* is the average horsepower of the units replace, as reported by the respondent.
- $Conversion_{HPtoKW}$ is the conversion factor for converting horsepower to kilowatts (0.745).
- *Hours* is the annual runtime hours the units, as reported by the respondent.
- *Loading* is the motor loading factor, i.e. the percentage of total operating hours that the units run on full load (assumed to be 0.68).[66]
- η is the efficiency of the units, based on the horsepower and age of the compressor as reported by the respondent (Table E-73).

If the unit efficiency was not specified in the survey data, the assumptions specified in Table E-73 were used.

Table E-73. Assumptions Used for Unknown Efficiencies

Horsepower	Assumed Baseline Motor Efficiency (EPAct Efficiency Standard)	Assumed New Motor Efficiency (NEMA Efficiency Standard)
1	80.1%	81.7%
1.5	83.8%	85.8%
2	84.7%	86.7%
3	86.3%	87.7%
5	87.2%	88.8%
7.5	88.7%	90.3%
10	89.5%	91.0%
15	90.4%	91.7%
20	90.6%	92.0%
25	91.6%	92.8%
30	91.8%	93.0%
40	92.6%	93.5%
50	92.8%	93.9%
60	93.4%	94.4%
75	93.6%	94.4%
100	93.9%	94.8%
125	94.2%	95.0%
150	94.6%	95.3%
200	94.8%	95.6%

Source: Consortium for Energy Efficiency (CEE) *Premium Efficiency Motors Initiative Efficiency Specifications*, (CEE 2009).

[66] The motor loading factor assumption of 0.68 was obtained from Regional Technical Forum submittal, *Quality Motor Rewinding an Energy Efficiency Measure* (Green Motors Practices Group 2008).

Demand savings were estimated similarly, by calculating the difference between the peak demand of the original motor(s) and the peak demand of the more efficient motor(s). The following equation was used to estimate coincident peak demand:

$$kW = Number\_of\_Units * HP * Conversion_{HPtoKW} * Loading * \frac{1}{\eta} * Coincidence$$

Where:

- *kW* is the system coincident peak kW demand from the motor(s).
- *Number_of_Units*, *HP*, $Conversion_{HPtoKW}$, *Loading*, and η are the same as in the *kWh* equation above.
- *Coincidence* is the peak coincidence factor, which was assumed to be 75%.[67]

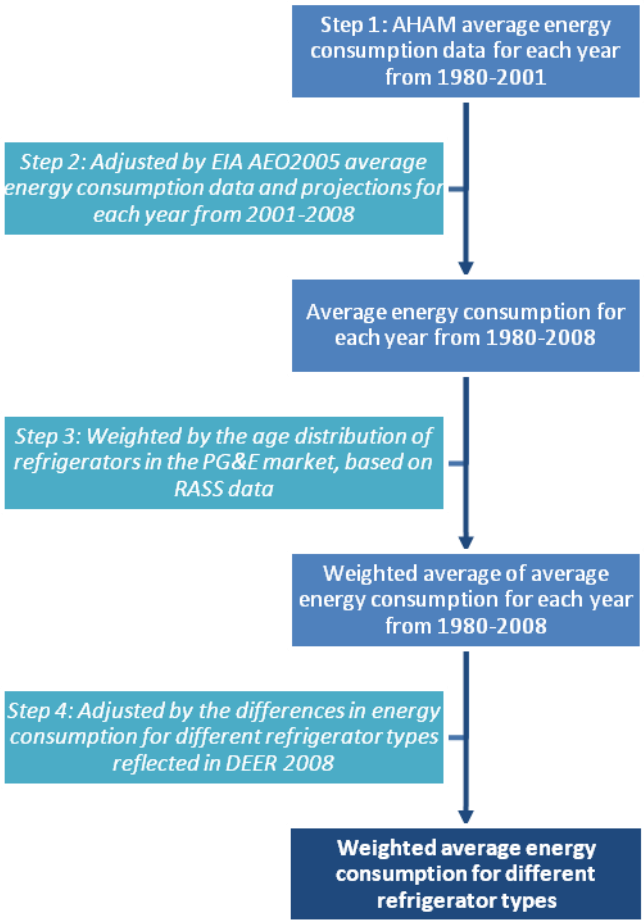
Because the number of motors replaced was not specified by survey respondents, one motor was assumed for "replacement," one motor was assumed for "new install," and two motors was assumed for "both replacement and new install."

1.10 Refrigeration

This subsection describes savings estimates for refrigeration measures. For several of these measures, the procedure illustrated in Figure E-1 was used.

[67] Based on the average coincidence factor for industrial equipment in (Brown and Koomey 2002).

Figure E-1. Process and Data Sources for Determining Baseline Energy Consumption (kWh/year) for Different Refrigerator Types



The process consisted of taking the average historical energy consumption data (in kWh/year) for all refrigerator types from the American Home Appliance Manufacturers (Step 1), supplementing it with Energy Information Administration data projections (Step 2), and changing it from yearly data to a single weighted average by applying an age distribution of the refrigerators in the PG&E territory found through a recent Residential Appliance Saturation Study (Step 3). This single weighted average for the energy consumption of an average refrigerator was then adjusted to reflect the energy consumption of different types of refrigerators using DEER 2008 data (Step 4). These different energy consumptions are shown in Table E-14 by refrigerator type.[68]

[68] Sources - "The High Costs of Federal Energy Efficiency Standards for Residential Appliances" (Sutherland 2003); "Residential Sector Equipment Stock and Efficiency" (EIA 2005); "California Statewide Residential Appliance Saturation Study (RASS)" (KEMA-XENERGY, Itron and RoperASW 2004); DEER 2008 , (Itron Inc. 2009).

Table E-14. Energy Consumption (kWh/year) Assumed for Different Refrigerator Types

	With Through-the-door-ice	Without Through-the-door-ice
Bottom Freezer (kWh/year)	597	645
Side Freezer (kWh/year)	750	730
Top Freezer (kWh/year)	503	551
Type Unknown (kWh/year)	564	

Using respondents' survey responses regarding freezer location and whether or not they have through-the-door-ice in their refrigerator, the data in Table E-14 was applied as the respondents' baseline refrigerator energy consumption.

If the respondent did not indicate the location of their freezer or whether or not they have through-the-door-ice, then they were assigned the weighted average of the energy consumptions for each refrigerator type (see "Type Unknown" column in Table E-). The weighting was adapted from RASS survey results on the market penetration of different refrigerator types.

Retire refrigerator

End-use savings for retiring an old refrigerator were taken directly from DEER 2008 (Itron Inc. 2009), and were scaled with the custom HVAC interaction factors (see Section 1.1) to determine whole-building savings. Where no information was given on the location of the retired refrigerator, the average of the savings for retiring a refrigerator in conditioned and unconditioned space was used.

Retire freezer

End-use savings for retiring an old freezer were taken directly from DEER 2008 (Itron Inc. 2009), and were scaled with the custom HVAC interaction factors (see Section 1.1) to determine whole-building savings. Where no information was given on the location of the retired freezer, the average of the savings for retiring a freezer in conditioned and unconditioned space was used.

Install an energy efficient refrigerator

The analysis for installing an energy efficient refrigerator used the annual energy and demand savings from the DEER 2008 residential Energy Star refrigerator measures, based on the refrigerator type provided by the respondent. For respondents that replaced an existing refrigerator, the analysis used DEER 2008's assumption for Customer Average as the baseline. For respondents that indicated installing a new refrigerator, the analysis used DEER 2008's assumption for Code Baseline as the baseline. Interactive effects with heating and cooling equipment were accounted for as described in Section 1.1.

Other - Replace vending machine

The single respondent (from the CEP Small Business survey) that reported replacing a vending machine did not provide any information as to the level of efficiency or size of the new or old vending machine.

To produce a conservative savings estimate, a conventional unit and the smallest Energy Star model with no energy saving software enabled were assumed to be the baseline and energy efficient unit respectively.

Annual energy consumption for the baseline and efficient unit were obtained from "Life Cycle Cost Estimate for 1 ENERGY STAR Qualified Vending Machine(s)" (LBNL 2009). No demand savings were assumed because energy savings come primarily from after-hours setbacks.[69]

Replace the refrigerator gasket

Energy and demand savings for commercial respondents who reported replacing a refrigerator gasket were calculated as a five percent savings,[70] applied to typical annual refrigerator energy consumption.[71]

Perform refrigeration maintenance

Energy and demand savings for commercial respondents who reported performing refrigeration maintenance were assumed to be 10% of base consumption.[72] The residential-style refrigerator energy consumption value is the blended weighted average based on energy savings in "The High Costs of Federal Energy Efficiency Standards for Residential Appliances" (Sutherland 2003) and refrigerator stock in the EIA's "Annual Energy Outlook 2005" section on "Residential Sector Equipment Stock and Efficiency" (EIA 2005).

Coincident peak demand savings for the residential-style refrigerator were derived from the savings values using a peak (W)/energy (kWh) ratio of 0.17 and a kilowatt interaction factor of 1.3.[73] Natural gas (therm) savings were estimated by applying a therm interaction factor of -0.00195 to the total kWh savings.[74]

Clean refrigerator coil and gaskets

Energy savings for this measure were quantified using the following calculation:

$$kWh = Baseline \times \%Savings \times IF_{kWh}$$

Where

- *kWh* is the annual electricity savings (in kWh) for this measure

[69] DEER 2005 assumes no peak demand savings for vending machine controls (Itron Inc. 2006).

[70] Estimate, no secondary source found. Estimate based in part on the *Energy Savings Potential for Commercial Refrigeration Equipment* (DOE 1996), which suggests that adding insulation to a refrigerator saves 2.2%, averaged across types of refrigerators. It was assumed that savings from replacing the refrigerator gasket would be greater.

[71] The display refrigerator (glass door refrigerated beverage display) energy consumption value comes from DOE 1996.

The walk-in cooler energy consumption (NRCAN 2009).

[72] Based on estimates of up to 50% (Carbon Trust 2009) and 5-10% (Focus on Energy 2009).

[73] The peak (W)/energy (kWh) ratio comes from the "2005-2004 Database for Energy Efficiency Resources (DEER) Update Study: Final Report", (Itron Inc. 2006).

The kW interaction factor comes from DEER 2008 (Itron Inc. 2009).

[74] Therm interaction factor comes from DEER 2008 (Itron Inc. 2009) .

- *Baseline* is the annual baseline energy usage of the refrigerator, as determined through the methodology explained at the beginning of Section 1.10.
- *%Savings* is the percent of energy savings achieved through cleaning the refrigerator coils and gaskets, assumed to be 3% in this analysis (Bos, W. 1993)
- IF_{kWh} is the electricity interaction factor, as determined through the approach presented in Section 1.1.

Coincident peak demand savings were calculated by applying the peak demand-to-energy ratio (0.17 W/kWh) used for the residential refrigerator measures in DEER 2005 to the calculated energy savings for each respondent (Itron Inc. 2006).

If the respondent has gas heating, the calculations for this measure also reflected an increase in natural gas consumption due to the interactive effects between the reduced refrigerator usage and the respondent's heating system. These effects are reported as negative therm savings and quantified as the product of the end-use kWh savings and the appropriate interaction factor, as discussed in Section 1.1.

Use energy savings button on refrigerator

Energy savings for this measure were quantified using the following calculation:

$$kWh = Baseline \times \%Savings \times IF_{kWh}$$

Where

- *kWh* is the annual electricity savings (in kWh) for this measure.
- *Baseline* is the annual baseline energy usage of the refrigerator, as determined through the methodology explained at the beginning of Section 1.10.
- *%Savings* is the percent of energy savings achieved through using the energy savings button, assumed to be 7.5%, based on the DOE's "Energy Savers Booklet" (DOE 2005).
- IF_{kWh} is the electricity interaction factor, as determined through the approach presented in Section 1.1.

Coincident peak demand savings were calculated by applying the peak demand-to-energy ratio (0.17 W/kWh) used for the residential refrigerator measures in DEER 2005 to the calculated energy savings for each respondent (Itron Inc. 2006).

If the respondent has gas heating, the calculations for this measure also reflect an increase in natural gas consumption due to the interactive effects between the reduced refrigerator usage and the respondent's heating system. These effects are reported as negative therm savings and quantified as the product of the end-use kWh savings and the appropriate interaction factor, as discussed in 1.1.

1.11 Water

Install water heater blanket

The analysis for installing a water heater blanket used engineering calculations and information from the Department of Energy. Energy savings for this measure used the following equation:

$$EnergySavings = F * ABEU$$

Where

- *EnergySavings* is the total energy savings (in therms if the water heater uses gas and kWh if the water heater uses electricity).
- *F* is the fractional energy savings. This value is estimated to be 6% (EERE 2009).
- *ABEU* is the annual base energy usage (in therms/year if the water heater uses gas and kWh/year if the water heater uses electricity). ABEU was estimated at 254 therms/year.[75]

All respondents who reported taking this action have gas water heaters. Only therms savings were estimated: demand (kW) savings were not applicable.

Install faucet aerators/low-flow showerheads

The engineering calculations used to estimate energy savings from installing faucet aerators/low-flow showerheads are described in the following subsections.

For electric water heating, coincident demand savings were estimated by using a kW to kWh ration of 0.0001, based on residential water heater replacement measures in DEER 2008.

Low-flow showerheads

$$EnergySavings = \frac{mC\Delta T}{EnergyFactor}$$

Where

- *EnergySavings* is the annual kWh or therm savings, depending on the water heater fuel type.
- *m* is the mass of water saved. The mass saved is estimated for low flow showerheads as the multiplication of the following factors (Schuldt and Tachibana 2008)[76]
    - showerhead flow reduction (gallons/minute), estimated at 0.6 gallons/minute (Biermayer 2006)
    - Ratio of user settings to full throttle flow rate, estimated at 0.95

[75] This estimate is based on the 2006 federal minimum standards for 50 gallon gas water heaters.

[76] This is the source for all of the listed factors, unless otherwise noted.

- Shower duration (minutes), estimated at 7.84 minutes
- Percent of water that is hot, estimated at 68%
- Number of persons/home, directly taken from the survey
- Showers/person/day, estimated at 0.64
- Annual occupancy (days), estimated at 350

- *c* is the specific heat of water (0.002 kWh//°F-gallon or 8.3 BTU/°F-gallon)
- ΔT is change in temperature of the water, assumed to be 72°F (Lutz 2005).
- *EnergyFactor* is the energy factor for water heaters, based on the fuel source, type of tank, volume of tank and age of water heater (see Table E-85).

Table E-85. Sources Used to Determine Water Heater Energy Factors Based on Water Heater Age and Efficiency

Water Heater Age	Water Heater Efficiency	Source of Assumed Energy Factor
<5 years	Energy Efficient	DEER 2008 for efficient residential water heaters (Itron Inc. 2009)
<5 years	Standard Efficiency	DOE 2004 Energy Conservation Standards for Water Heaters (DOE 2001)
>=5 years	Energy Efficient	DOE 2004 Energy Conservation Standards for Water Heaters (DOE 2001)
>=5 years	Standard Efficiency	DOE 1991 Energy Conservation Standards for Water Heaters (DOE 2001)
Age unknown	N/A	Age calculated as the average of the 1991 and 2004 DOE standards, weighted using data on age distribution of water heaters in PG&E territory (KEMA-XENERGY, Itron and RoperASW 2004)

Faucet aerators only

Electricity savings (kWh) per faucet aerator from "Energy-Related Water Fixture Measurements: Securing the Baseline for Northwest Single Family Homes" (Schuldt and Tachibana 2008) were used. These savings were adjusted by appropriate factors to estimate therm savings, as expressed in the following equation:

$$Savings_{therms} = Savings_{kWh} \times \frac{EF}{GF} \times 0.034 therms/kWh \times \%Gas$$

Where

- *ThermsSavings* is the estimated annual natural gas energy savings (therms) for a natural gas-fired water heater.
- $Savings_{kWh}$ is the estimated annual energy savings from installing a faucet aerator for an electric-fired water heater, assumed to be 50 kWh (Schuldt and Tachibana 2008).
- *EF* is the average electric energy factor, estimated at 0.9 (DOE 2001).
- *GF* is the average gas energy factor, estimated at 0.57 (DOE 2001).
- *%Gas* is the amount of water heat that is from a gas source

For units with an unknown fuel type, a blend was estimated between electric and gas heating was used; therefore, these units resulted in both electric and gas savings.

Other - Wrap hot water heater

For respondents who reported taking an "other" action and stated "wrap hot water heater", the savings approach in Section 0 was used.

Replace water heater

Savings for replacing a water heater were obtained from DEER 2008, based on respondent-specified parameters: water heater type (tank, tankless), fuel type (electricity, natural gas, propane), and size (<30 gallons, 30-39 gallons, 40 to 59 gallons, ≥ 60 gallons).

Add pre-rinse spray valves

Savings from pre-rinse spray valves (PRSV) were obtained from the evaluation of California Urban Water Conservation Council's 2004-2005 PRSV program (SBW Consulting, Inc. 2007). A savings of 28 therms per PRSV was assumed.

Reduce water pressure

The following algorithms were used for demand and energy savings:

$$Savings_{kWh\_or\_therms} = EnergyPerPerson \times NumberofPeople \times \%Savings$$

$$Savings_{kW} = \frac{Savings_{kWh} \times PeaktoEnergyFactor}{1{,}000}$$

Where

- $Savings_{kWh\_or\_therms}$ is the annual energy savings (therms for gas water heating, kWh for electric water heating)
- *EnergyPerPerson* is the electric (kWh) or gas (therm) water heater energy per person, assumed to be 895 kWh/person and 63 therms/person (KEMA-XENERGY, Itron and RoperASW 2004)
- *NumberofPeople* is the number of people in the residence, assumed to be 2.89 people (KEMA-XENERGY, Itron and RoperASW 2004)
- *%Savings* is the percentage savings for reduction in water pressure, assumed to be 11% based on a blend of sources (Schuldt and Tachibana 2008) and (Watts Regulator Company 1998)
- $Savings_{kW}$ is the coincident peak demand savings
- $Savings_{kWh}$ is the annual electric energy savings
- *PeaktoEnergyFactor* (W/kWh) is respondent specific and is based on the DEER 2008 measure "Residential Appliance: Water Heating."[77]

For units with an unknown fuel type, a blend was estimated between electric and gas heating; therefore, these units resulted in both electric and gas savings.

Repair faucet leaks

The following algorithms were used to estimate demand and energy (kWh and therm savings) for repairing faucet leaks:

$$Savings_{kWh\_or\_therms} = \frac{GallonsSaved \times \%HotWater \times EnergyIntensity}{EnergyFactor}$$

$$Savings_{kW} = \frac{Savings_{kWh}}{8{,}760}$$

Where

- $Savings_{kWh\_or\_therms}$ is the annual energy savings (therms for gas water heating, kWh for electric water heating)
- *GallonsSaved* is the water gallons saved by fixing leaks, estimated to be 3,650 gallons/year (RetroFIT n.d.) and (American Water Works Association n.d.).[78]
- *%HotWater* is the percentage of water saved that is heated by the water heater/hot, assumed to be 50%.
- *EnergyIntensity* is the electric or gas scale factor, assumed to be 0.17 kWh/gallon and 0.01 therms/gallon (Schuldt and Tachibana 2008).
- *EnergyFactor* is the water heater energy factor, based on age and efficiency (see Table E-8, in Section 0).
- $Savings_{kW}$ is the coincident peak demand savings.
- $Savings_{kWh}$ is the annual electric energy savings.
- *8,760* is for 8,760 hours per year.

For units with an unknown fuel type, a blend was estimated between electric and gas heating; therefore, these units resulted in both electric and gas savings.

[77] "W/kWh Ratio" in DEER 2008 for replacement water heaters assumed to have the same coincidence factor as the water heater usage in this measure

[78] Value in "RetroFIT" is given as savings "up to 7000"; thus, taking 50% to be conservative.

Run full loads in dishwasher

Energy savings for respondents who reported running full loads (rather than partial loads) in the dishwasher were based on two components – reduced annual electricity consumption by the dishwasher and reduced annual consumption of hot water. The dishwasher electricity consumption reductions were based unit energy electricity consumption (UEC) values for single family residences in the California Residential Appliance Saturation Survey (RASS). Hot water energy savings were based on a typical hot water temperature rise of 72 °F (Lutz 2005) and water heater efficiency as discussed in Section 1.3. Usage changes were based on qualitative survey data for prior and post frequency of full load dishwashing. The maximum reduction of dishwasher use for this measure was conservatively assumed at 33%.[79]

Peak load savings were estimated by multiplying kWh savings by a kW to kWh ratio derived from DEER residential lighting measures.[80]

Lower water heater temperature

Savings for reducing water heater temperature were calculated using the engineering algorithm in EPRI's "Engineering Methods for Estimating the Impacts of Demand-Side Management Programs, Volume 2" (Jacobs 1993). All respondents reporting taking this action reported having gas water heaters: all savings are in therms and there are no peak demand savings. The following equation was used:

$$Savings_{therms} = \frac{UA_{tank} * (T_i - T_f) * 8760 * Conversion}{EF}$$

Where:

- $Savings_{therms}$ is the annual energy savings in therms.
- UA_{tank} is the heat loss coefficient for the tank in Btu/hr-°F.[81]
- T_i is the temperature setpoint before the change, assumed to be 130 °F where not given (Lutz 2005).
- T_f is the temperature setpoint after the change, assumed to be 120 °F where not given.[82]
- *8760* is the number of operating hours per year.[83]
- *Conversion* is 0.00001, the conversion factor from Btus to therms.
- *EF* is the water heater energy factor, a measure of efficiency. Where EF was not given, a standard assumption was determined using the method described in Section 1.3.

[79] Based on washing all dishes in full loads versus washing half of the dishes in half loads and the other half in full loads

[80] kW to kWh ratios for residential appliances were not available; this ratio for lighting measures was considered a reasonable proxy.

[81] Calculated as the EF of an equivalent electric water heater and adjusted for tank insulation based on a method in the EPRI DSM manual (Jacobs 1993).

[82] Based on the recommendation from the DOE EERE (EERE 2009b).

[83] Assumed continual operation.

Take shorter showers

This measure was evaluated using the following formula, with inputs taken from survey responses and literature review:

$$Savings = \frac{(SPD \times Time_{before}) - (SPD \times Time_{after}) \times DPY \times GPM \times \%Hot \times Conv}{EF}$$

Where

- *Savings* is the annual energy savings of the measure (in therms for respondents with natural gas water heaters and kWh for respondents with electric water heaters)
- *SPD* is the average number of showers taken each day at the respondent's household, based on one of the following:
    - Survey response about the number of showers taken each day
    - Survey response about the number of people in the respondent's household and the average number of showers each person takes each day, assumed to be 0.64, from "Energy-Related Water Fixture Measurements: Securing the Baseline for Northwest Single Family Homes" (Schuldt and Tachibana 2008).
    - If the respondent did not give any of the above information, two showers per household per day was assumed based on "Potential Water and Energy Savings from Showerheads" (Biermayer 2006).
- $Time_{before}$ is the average shower length (in minutes) before the audit, based on survey responses.
- $Time_{after}$ is the average shower length (in minutes) after the audit, based on survey responses.
- *DPY* is the number of days per year that occupants are at home and using their shower, assumed to be 350 days per year for this analysis.
- *GPM* is the gallons of water used in the shower per minute, assumed to be 2.2 gallons per minute (Schuldt and Tachibana 2008).
- *%Hot* is the percent of water used in the shower that is heated, assumed to be 68% (Schuldt and Tachibana 2008).
- *Conv* is the conversion factor for converting gallons of heated water into energy usage, which is calculated using the approach described in Section 1.3.
- *EF* is the energy factor for the respondent's water heater, which is based on survey responses or assumptions regarding water heater tank type (standard tank or tankless), capacity (in gallons), efficiency level, fuel type (gas or electric), and age (see Section 1.3).

Savings were not calculated for respondents that reported no reduction or change in their shower length before and after the audit.

Coincident peak demand savings were calculated for the respondents with an electric water heater by applying the demand-to-energy ratio (kW/kWh) used in DEER 2008 for its residential water heater replacement measures (Itron Inc. 2009).

No interactive effects were quantified for this measure: it was assumed that the respondent's water heater was most likely located in an unconditioned portion of the house.

Turn off faucets

Respondents who reported turning off faucets were assumed to turn off the faucets for a portion of time during at least one of the following hot water uses: shaving, washing dishes, or showering. The savings assigned to each hot water use and assumptions regarding typical usage are given below:

$$HotWaterSaved_i = TimeTurnedOff_i \times FaucetFlow \times UPW_i \times WPY \times Adjust_i \times \%Hot_i$$

$$Savings = \frac{(HotWaterSaved_{shaving} + HotWaterSaved_{dishes} + HotWaterSaved_{showering}) \times Conv}{EF}$$

Where

- $HotWaterSaved_i$ is the hot water (in gallons) saved annually from turning off faucets for hot water use *i* (shaving, washing dishes, and showering), assumed to be an aggregated amount of 942 gallons per year per respondent, as calculated using the algorithm above and inputs listed in Table E-96.
- $TimeTurnedOff_i$ is the average time per hot water use that the faucet used to be turned on for use *i* before the audit, but is now turned off as a result of the audit, as shown in Table E-916
- *FaucetFlow* is the average faucet flow rate (gallons per minute), assumed to be 2.2 gallons per minute (Biermayer 2006).
- UPW_i is the average number of uses per week for hot water use *i*, as shown in Table E-96
- *WPY* is the weeks per year that the respondent does is in the residence using hot water, assumed to be 50 weeks (Schuldt and Tachibana 2008).
- $Adjust_i$ is a percent adjustment assumed for hot water use *i* that reflects portion of the respondents that said "yes" to turning off faucets that turned off faucets for the specific hot water use *i*, because it is assumed that respondents did not necessarily turn off water while shaving, washing dishes, *and* showering (see Table E-96).
- $\%Hot_i$ is the percent of water assumed to be heated water for hot water use *i*, as shown in Table E-96.
- *Savings* is the annual energy savings of the measure (in therms for respondents with natural gas water heaters and kWh for respondents with electric water heaters).
- *Conv* is the conversion factor for converting gallons of heated water into energy usage, which is calculated using the approach described in Section 1.3.
- *EF* is the energy factor for the respondent's water heater, which is based on survey responses or assumptions regarding water heater tank type (standard tank or tankless), capacity (in gallons), efficiency level, fuel type (gas or electric), and age (see Section 1.3).

Table E-96. Inputs Used to Determine Annual Hot Water Saved (gallons)

Hot Water Uses	Average Time of Use (min/use)	Average Time Faucet Turned Off (min/use)	Water Saved (gal/use)	Uses Per Week (use/wk)	Annual Water Saved (gal)	% Adjustment for "Yes" Respondents Turning Off Faucet	% Hot Water	Annual Hot Water Saved (gal)
Shaving	3	2	4.4	3	660	50%	50%	165
Washing dishes	10	5	11	5	2750	50%	50%	687.5
While showering	10	2	4.4	6	1320	10%	68%	89.76
Total								**942.26**

Source: (Biermayer 2006), (Schuldt and Tachibana 2008) , (Water Use It Wisely), (FEMP).

Coincident peak demand savings were calculated for the respondents with an electric water heater by applying the demand-to-energy ratio (kW/kWh) used in DEER 2008 for its residential water heater replacement measures (Itron Inc. 2009).

No interactive effects were quantified for this measure, because it was assumed that the respondents' water heaters were located in unconditioned spaces.

1.12 Other

Other

In addition to the listed measures, the survey included an option to state other measures that were installed. The other responses and the action taken for each response for estimating demand and energy savings are listed in Table E-107.

Table E-107. Other responses and savings methods

Other Responses	Savings Applicable and Quantifiable
Stopped watering lawn	No. No energy savings from measure.
Changing the windows	No. Additional information needed for quantification.
Reduce yard watering	No. No energy savings from measure.
Faucet aerators	Yes. Savings based on responses from "Install faucet aerators/low-flow showerheads" measure.
Bought new shower heads	Yes. Savings based on responses from "Install faucet aerators/low-flow showerheads" measure.
Toilet	No. No energy savings from measure.
I don't remember.	No. Not clear measure.
Recommended changing shower head	No. Response does not indicate that action was taken.
Weather stripping around doors	No. Additional information needed for quantification.
Low flow toilet	No. No energy savings from measure.

Added photovoltaics

Savings were estimated based on average solar installation size documented in the CPUC Annual Program Assessment: California Solar Initiative 2009 (residential and small commercial systems average) and geographic insolation from NREL's PV Watts calculator.

Peak savings were assumed to be the average kW output during coincident peak hours (3PM to 6PM) on days with high insolation (assumed to correlate with peak demand days).

Added controls - EMS, programmable thermostat, occupancy sensors, timer, dimmer, cycle manager, VSD

Table E-8 lists the five quantifiable controls measures and the source of the percentage savings estimate for each.

Table E-18. Controls/EMS Module – Summary of Quantified Measures

Quantified Measures	Source
Installed occupancy sensors	DEER 2005
Installed lighting timers	DEER 2005
Installed daylighting controls	DEER 2005
Install a programmable thermostat	Matthews (n.d.), Summit Blue 2008 & eQUEST
Install Variable-Speed Drives (VSDs) on motors	DEER 2008

A significant contribution to uncertainty in this analysis was that some respondents in the Training Equipment survey did not provide or provided multiple building size information. In the case of no size provided, building sizes were assumed based on building-type averages from CBECS 2003 – averaged over the Western US only (EIA 2004). In the case where different building sizes were reported, the building size most often specified by the respondent was used. If building vintage was unknown, it was assumed to be 1982 (based on average of responses given for this question).

Uncertainty in savings estimates from controls measures is also due to the fact that actual savings depend in large part on the applicability of a measure and the specifics of the implementation. Many of the measures reported here have some overlap; while effort was taken to discount savings for particular measures to avoid double counting, this still adds another level of uncertainty.

Commercial Lighting - installed lighting controls

See Section 0 for the lighting controls impact estimate methodology.

Energy management systems

Although two respondents claimed to have installed energy management systems (EMS), neither one's responses implied savings besides lighting savings, which were captured in the lighting controls measure.

- One respondent indicated that their installed system only controlled lights (i.e. "Prevent the lights from being turned on if there was light thru [sic] the skylights"); to avoid double counting, no EMS saving were counted for this respondent, who also installed lighting timers, occupancy and daylight sensors.
- The other respondent supplied measure specific data which specified that no action was taken. Data from this respondent was not included in the analysis of this measure.

Programmable thermostat

For respondents who installed a programmable thermostat, percentage savings per degree setback and per weekly hour were applied to CEUS energy use intensity data (Itron Inc. 2006b).[84] Peak demand savings were scaled by a coincidence factor of 0.85 to estimate coincident peak savings.[85]

Survey respondents did not supply information regarding the pre-/post-measure thermostat setpoints or hours of operation. A 2 °F change in heating and cooling setpoints was assumed, as was five hours per week of reduced heating and cooling use.[86]

Variable speed drives on motors

Savings from installing variable speed drives (VSDs) on motors were estimated based on DEER data and scaled by the nameplate motor horsepower provided by each respondent.

[84] Percent saving value (Matthews n.d.).

Percent savings per weekly hour reduced based on representative eQUEST runs for a small office in CZ 6.

[85] Estimate, based on high coincidence of HVAC use with CA summer peak.

[86] Roughly the median setback observed by Summit Blue in similar studies.

Reduce energy use at peak times

No respondents reported taking this action.

1.13 Types of Uncertainty

There is a considerable level of uncertainty in estimating energy and peak-load savings for non-resource measures. The uncertainty stems from the survey data, the estimation methodologies and values of parameters. Four types of uncertainty may affect savings estimation:

- **Value uncertainty (stochastic)** – an inability to know an outcome due to natural random variation in a system.
- **Value uncertainty (epistemic)** – a lack of knowledge or low confidence in the appropriate value or distribution of values of a parameter. This may result from missing, inaccurate or non-representative data or from poorly-known inapplicable or changing model parameters.
- **Structural uncertainty** – an application of inappropriate or insufficient methodologies to evaluate results. This may result from inadequate or incomplete model structure, ambiguous system boundaries, relationships wrongly or insufficiently specified, or competing conceptual frameworks.
- **Unpredictability** – an inability to know the future state of a system due to behavior that is chaotic or not well understood (e.g. future human behavior).

These four types of uncertainty are inherent in estimating savings from survey data. However, if planned for in the early stages of survey design, this uncertainty can be evaluated and minimized.

1.14 Sources of Uncertainty in Non-Resource Savings Estimation

Uncertainty stems from each step of the savings estimation process including gathering data, developing estimation methodology, and establishing values of parameters. This section describes in further detail the specific sources of uncertainty in each of these steps.

Survey Data

One source of epistemic uncertainty results from unavailability of data needed to implement a particular methodology. The data may not be available for two primary reasons, either the appropriate question for the adopted methodology was not asked, or it was not answered. The appropriate question not being asked may be a result of the estimation methodology not being applied to the survey design or a result of the methodology changing after design of the survey. It could also result from inadequate implementation of the survey. The question not being answered may result from the survey respondent not understanding or knowing the answers to survey questions. When data was unavailable, average values were typically used.

Another source of epistemic value uncertainty may result from inaccuracy of survey response data. Responses may be erroneous for several reasons:

- The respondent may believe he/she knows the answer, but is incorrect.
- The respondent may not know the answer, but responds anyway.
- The respondent may misinterpret the question.

Selecting savings estimation methods before designing the survey, and integrating the methods into the survey design process, will help ensure that the appropriate questions are asked. Analyzing the questions for clarity and likelihood of receiving an accurate response will minimize questions not being answered. Allowing respondents to indicate a high or low level of confidence would enable analysis to filter low confidence responses from the analysis, reducing uncertainty in the data.

Methods

The primary type of uncertainty associated with the estimation methodology is structural uncertainty. This results from the inability of methodologies to accurately evaluate future energy and peak demand savings. Simple methods allow estimates to be arrived at quickly with less work, but do not capture some complexities that may impact the estimate. For example, most estimates were based upon methods that only considered the steady state (or the time-independent state) of a system and do not consider dynamic states. Also, occasionally system interactions and interdependencies were not considered if they substantially increased the complexity and timeline of the analysis.

One of two general methodological approaches were used to create savings estimates, engineering calculation applying appropriate average values for parameters from studies and databases, and modeling of the built environment and simulating efficiency measures using eQuest. Engineering calculations were used unless analysis of the efficiency measure included:

- Dependency upon weather conditions;
- Complex interaction effects;
- Complex algorithms that would require excessive time for implementation.

The primary source of uncertainty in both the eQuest modeling and engineering calculation is parameter uncertainty discussed below. However the application of a specific methodological approach itself may result in different savings estimates from alternative reasonable approaches, leading to structural uncertainty. Studies have shown that structural uncertainty tends to be underestimated by experts (Morgan 1990).

Another type of uncertainty associated with methodology is unpredictability. This results from applying a retrospective consumption approach to future consumption reductions. Although it is reasonable to assume that future energy consumption will be consistent with past consumption patterns, this nevertheless introduces an aspect of uncertainty.

Parameters

The parameter values used in estimation are probably the best candidate for estimating and reducing uncertainty. Wherever possible, values were used from reliable public sources such as studies or databases. Occasionally values were selected based on engineering judgment and consensus from internal review. Uncertainty exists for all parameter values.

Publicly available studies and databases may seem better candidates for data selection than judgment, but this is not necessarily true. There are a variety of sources of uncertainty associated with applying data sources, and the following questions should be asked:

- **Validity** – Is the study or database valid? Errors can cause additional epistemic uncertainty. Structural uncertainty may result from insufficiency in applied methods.

- **Applicability** – Is the study appropriate? It may not be appropriate to apply a study to estimate savings that occur under conditions that are beyond the scope of the study. This may cause additional epistemic and structural uncertainty.
- **Availability** – Is statistical data presented in the study, or only average values? If statistical information (e.g. standard deviation) is available, stochastic uncertainty may be modeled and accounted for in the estimation. If not, addition epistemic uncertainty exists pertaining to the level of confidence of the savings estimate.
- **Fidelity** – Can specific criteria be used to filter data, or is data presented as aggregate? If data can be filtered by the conditions being estimated, then uncertainty may be reduced.

If the validity, applicability, and fidelity of the study and databases used are low, then judgment may provide a more accurate estimate. Judgment has its own issues with uncertainty and confidence. Particularly, effort should be taken to include high numbers of experts and diversity among experts when soliciting judgment or seeking expert consensus.

1.15 Treating Uncertainty

Treating uncertainty of energy and peak-load savings analysis requires consideration at the early stages of M&V planning activities. Implementation of an uncertainty guidance plan ensures a consistent approach in reducing and evaluating uncertainty. Methods for treating uncertainty are outlined below.

- **Data collection and analysis** – allows for quantification of stochastic uncertainty and shifting from epistemic uncertainty to stochastic uncertainty. For parameter uncertainty can then be treated with Monte Carlo simulation. Data collection and analysis may be applied to reduce uncertainty in gathering data, applying methods and selecting values for parameters.
- **Expert judgment or consensus** – may be used to increase estimation confidence, or to specify the likelihood of outcomes based on the distribution of expert judgment. Expert judgment and consensus are typically applied when data is largely unavailable and may be applied to reduce uncertainty in gathering data, applying methods and selecting values for parameters.
- **Sensitivity analysis** – may be used to increase estimation confidence or to indicate parameters whose quantification justifies further investigation. Sensitivity analysis may only be applied to understand sensitivities in parameter values.
- **Scenarios** – may be applied to show a range of outcomes when information on likelihood of occurrence is unavailable. Scenarios may only be applied to understand the range of outcomes associated with a range of parameter values.

These methods for treating uncertainty require integration throughout the M&V process and are often untenable as afterthoughts.

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APPENDIX F: NON-RESOURCE ACTIVITY TRACKER INFORMATION

Non-Resource Prioritization Summary Tables

This appendix provides details regarding the elements that were initially prioritized for the Local Government Partnerships (LGP) non-resource activities review. After PA prioritized program elements (discussed in detail in the Introduction chapter), we reviewed each program primarily based on program activity and data availability. During this review, PA determined whether the program evaluation was feasible before moving on with the evaluation process. Some of the programs that made it through the review process were removed from the evaluation, due to a lack of data.

Table F-1 below shows summaries of non-resource prioritization actions by utility. This table includes all program activities that were initially included in the evaluation scope (audits, trainings, referrals, outreach, and other non-resource activities). Of the programs reviewed, 20% were included in the evaluation.

Table F-1. Prioritization Summary by Utility [a]

Utility	Elements Prioritized	Elements Reviewed	Elements Not Evaluated due to a Lack of Data	Evaluated Elements	Percent Evaluated (of Reviewed)	Percent Evaluated (of Prioritized)
PGE	184	64	54	10	15.6%	5.4%
SCE	80	52	36	16	30.8%	20.0%
SDGE	11	9	9	0	0.0%	0.0
SCG	2	2	2	0	0.0%	0.0
Total	277	127	101	26	20.5%	9.4%

[a] This table includes Other and Outreach elements that were removed from the evaluation

Table F-2 also summarizes non-resource prioritization actions by utility; however, these calculations do not include outreach and other non-resource activities, all of which were removed from the evaluation effort. Of the audit, training, and referral programs reviewed, 42.6% were included in the evaluation.

Table F-2. Prioritization Summary by Utility (Limited) [b]

Utility	Elements Prioritized	Elements Reviewed	Elements Not Evaluated due to a Lack of Data	Evaluated Elements	Percent Evaluated (of Reviewed)	Percent Evaluated (of Prioritized)
PGE	113	33	23	10	30.3%	8.8%
SCE	40	25	9	16	64.0%	40.0%
SDGE	3	2	2	0	0.0	0.0
SCG	1	1	1	0	0.0	0.0
Total	157	61	35	26	42.6%	16.6%

[a] This table excludes the Other and Outreach elements that were removed from the evaluation

Table F-3. Data Status by Element Type - All Programs [c]

Review Status	Audit		Other		Outreach		Referral		Training		Grand Total	
Ongoing	6	23%	0	0%	0	0%	8	31%	12	46%	26	100%
Not Tracked	0	0%	0	0%	0	0%	4	100%	0	0%	4	100%
Cancelled	7	7%	24	25%	42	43%	11	11%	13	13%	97	100%
No Evaluation	50	33%	21	14%	33	22%	14	9%	32	21%	150	100%

[a] This table includes Other and Outreach elements that were removed from the evaluation

Table F-3 and F-4 provide count totals of review statuses for each element type. Table F-3 includes other and outreach non-resource activities, whereas Table F-4 includes only audits, trainings, and referrals. As seen in Table F-4, of evaluated, or ongoing, activities, audit, referral, and training evaluations constituted 23 %, 31%, and 46%, respectively.

Table F-4. Data Status by Element Type - All Programs (Limited) [d]

Review Status	Audit		Referral		Training		Grand Total	
Ongoing	6	23%	8	31%	12	46%	26	100%
Not Tracked	0	0%	4	100%	0	0%	4	100%
Cancelled	7	23%	11	35%	13	42%	31	100%
No Evaluation	50	52%	14	15%	32	33%	96	100%

[a] This table excludes Other and Outreach elements that were removed from the evaluation

Table F-5 below provides the evaluation status for each the prioritized programs, including program ID, secondary ID (for cross-cutting activities), program name, element type, element, and non-resource (NR) evaluation status. The above tables (Table F-1 through F-4) are high-level summaries of the information found below.

Table F-5. Non-Resource Evaluation Status by Program Element (All Element Types)

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2015		ABAG	Referral	Referrals to PG&E Programs	Not Tracked
PGE2015		ABAG	Outreach	Presentation at workshops	Cancelled
PGE2015		ABAG	Outreach	Participation in community events	Cancelled
PGE2015		ABAG	Training	Implementing Energy Efficiency Projects Workshop	Cancelled
PGE2015		ABAG	Other	Policy Assistance	Cancelled
PGE2015		ABAG	Other	New technologies and street lighting	Cancelled
PGE2015		ABAG	Audit	Energy Audit, Energy Assessment, and Action Plan	Ongoing

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2015		ABAG	Other	New Technologies and Street Lighting	Under Review
PGE2015		ABAG	Other	Policy Assistance	Under Review
PGE2015		ABAG	Training	Policy Assistance	No NR Eval
PGE2016		AMBAG	Training	PEC classes (check against ODC list)	Cancelled
PGE2016		AMBAG	Audit	Municipal Direct Install	No NR Eval
PGE2016		AMBAG	Audit	SB Direct Install	No NR Eval
PGE2016		AMBAG	Audit	SF/MF Turnkey	No NR Eval
PGE2016		AMBAG	Training	Commercial and Business Refrigeration	Ongoing
PGE2016		AMBAG	Outreach	Outreach efforts via previous experience	Cancelled
PGE2016		AMBAG	Training	Advanced Framing for Resource and Energy Efficiency	Ongoing
PGE2016		AMBAG	Outreach	Direct mailings promoting audits	Cancelled
PGE2016		AMBAG	Referral	Referrals to PG&E Programs	Cancelled
PGE2016		AMBAG	Audit	Free home energy audit	Ongoing
PGE2016		AMBAG	Other	Energy Assessment Report	Cancelled
PGE2016		AMBAG	Outreach	Tabling/canvassing at community events	Cancelled
PGE2016		AMBAG	Referral	Referrals from Energy Assessment Report	Cancelled
PGE2018		CCC	Outreach	One-on-one Outreach	Cancelled
PGE2019		CDCR	Other	MOU Support	No NR Eval
PGE2020		East Bay	Other	Time of Sale Ordinance – may be addressed in '09-'11 cycle.	Cancelled
PGE2020		East Bay	Audit	CYES SF/MF direct install audits	Ongoing
PGE2020		East Bay	Referral	Building tune-up	Cancelled
PGE2020		East Bay	Referral	Sustainable Berkeley	No NR Eval
PGE2020		East Bay	Audit	Energy Wi$e	No NR Eval
PGE2020		East Bay	Audit	Building Tune-Up	No NR Eval
PGE2020		East Bay	Audit	BEST and Smart Light Direct Install	No NR Eval
PGE2021		Fresno	Outreach	CAA Luncheons	No NR Eval

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2021		Fresno	Referral	Schools EE Program	No NR Eval
PGE2021		Fresno	Referral	CA Dairy EE Program	No NR Eval
PGE2021		Fresno	Outreach	Fresno Energy & Clean Air Expo	No NR Eval
PGE2021		Fresno	Outreach	Fresno Home and Garden Show	No NR Eval
PGE2021		Fresno	Outreach	Website	No NR Eval
PGE2021		Fresno	Training	Zoning Design—2008	No NR Eval
PGE2021		Fresno	Training	Refrigeration (14 partic. In 2007)	No NR Eval
PGE2021		Fresno	Training	Res. Lighting (9 partic. in 2007)	No NR Eval
PGE2021		Fresno	Audit	Muni Direct Install (50 audits)	No NR Eval
PGE2021		Fresno	Audit	SBA Direct Install (130 DI projects in 2008)	No NR Eval
PGE2021		Fresno	Audit	MF Direct Install	No NR Eval
PGE2021		Fresno	Audit	SF Direct Install	No NR Eval
PGE2021		Fresno	Referral	3rd Party Progs/IOU Rebates & Incentives	Ongoing
PGE2021		Fresno	Outreach	Valley Business Conference	Cancelled
PGE2021		Fresno	Training	PEC/ETC and AEE Trainings	No NR Eval
PGE2021		Fresno	Outreach	Business and Technology Expo	No NR Eval
PGE2023		LGEAR	Outreach	Website	No NR Eval
PGE2023		LGEAR	Referral	Municipal assessments	No NR Eval
PGE2023		LGEAR	Outreach	Community fairs	No NR Eval
PGE2023		LGEAR	Outreach	Relationship-building	No NR Eval
PGE2023		LGEAR	Outreach	Brochures	No NR Eval
PGE2024		Madera	Other	Website	No NR Eval
PGE2024		Madera	Referral	No referrals listed by RHA	No NR Eval
PGE2024		Madera	Audit	SF Direct Install	No NR Eval
PGE2024		Madera	Audit	MF Direct Install	No NR Eval
PGE2024		Madera	Audit	SBA Direct Install	No NR Eval
PGE2024		Madera	Audit	Municipal Facilities Direct Install	No NR Eval
PGE2024		Madera	Outreach	Madera Bus. EC-Travaganza	Cancelled
PGE2024		Madera	Training	Madera Title 24 update	No NR Eval
PGE2025		Marin County	Other	Energy Checkup/Energy Wi$e	Cancelled

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2025		Marin County	Audit	Energy Wi$e	No NR Eval
PGE2025		Marin County	Outreach	Peer Network Lunches	Cancelled
PGE2025		Marin County	Other	CYES with MWD and MarinEMT Distribution of Low-Flow Showerheads, Faucet Aerators, and Test Flow Levels	No NR Eval
PGE2025		Marin County	Audit	Building Tune-Up	No NR Eval
PGE2025		Marin County	Audit	Realtors	No NR Eval
PGE2025		Marin County	Other	Time of Sale Conservation Ordinance	Cancelled
PGE2025		Marin County	Audit	CYES SF/MF direct install	Ongoing
PGE2025		Marin County	Referral	Small Business Energy Alliance (Direct install program)	Not Tracked
PGE2025		Marin County	Audit	Energy Check-up	Cancelled
PGE2026		Merced/Atwater	Audit	SF Direct Install	No NR Eval
PGE2026		Merced/Atwater	Outreach	Website	No NR Eval
PGE2026		Merced/Atwater	Outreach	PG&E Res. Construction Program	No NR Eval
PGE2026		Merced/Atwater	Outreach	City Staff Development Day	No NR Eval
PGE2026		Merced/Atwater	Outreach	Senior Seminar	No NR Eval
PGE2026		Merced/Atwater	Training	Going Green with Food Service	No NR Eval
PGE2026		Merced/Atwater	Training	Basics of PV	No NR Eval
PGE2026		Merced/Atwater	Training	PEC/ETC and AEE Trainings	No NR Eval
PGE2026		Merced/Atwater	Audit	Muni Retrofit (16 audits)	No NR Eval
PGE2026		Merced/Atwater	Audit	MF Direct Install	No NR Eval
PGE2026		Merced/Atwater	Outreach	Change a Light	No NR Eval
PGE2026		Merced/Atwater	Audit	SBA Direct Install	No NR Eval
PGE2026		Merced/Atwater	Referral	3rd Party Progs/IOU Rebates & Incentives	Ongoing
PGE2027		Motherlode	Training	Small business education on de-lamping	Cancelled
PGE2027		Motherlode	Audit	Municipal Building Energy Assessments and Audits	No NR Eval
PGE2027		Motherlode	Outreach	Community events	Cancelled
PGE2027		Motherlode	Audit	Municipal Audits	Cancelled
PGE2027		Motherlode	Referral	Program referrals	Cancelled
PGE2027		Motherlode	Audit	Multi-family audits	No NR Eval

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2027		Motherlode	Outreach	Direct mailing	Cancelled
PGE2027		Motherlode	Training	Training Activities at ETC	Cancelled
PGE2027		Motherlode	Audit	Small Business Audits for direct install	No NR Eval
PGE2027		Motherlode	Training	Auditor training seminars Multi-family audits	No NR Eval
PGE2027		Motherlode	Training	Tenant education	No NR Eval
PGE2027		Motherlode	Outreach	Email mailing	No NR Eval
PGE2027		Motherlode	Outreach	Meetings with facilities	No NR Eval
PGE2027		Motherlode	Outreach	ETC outreach	No NR Eval
PGE2028		Redwood	Outreach	SF Direct Install "Neighborhood Sweeps"	Cancelled
PGE2028		Redwood	Training	Education and training (Motor Eff. Workshop)	Ongoing
PGE2028		Redwood	Referral	SB Direct Install	Cancelled
PGE2028		Redwood	Other	Redwood Coast Energy Center	Cancelled
PGE2028		Redwood	Outreach	Tabling	Cancelled
PGE2028		Redwood	Referral	Commercial Build Energy Assessments	No NR Eval
PGE2028		Redwood	Other	Industrial Water Pump Service	No NR Eval
PGE2028		Redwood	Referral	Industrial Water Pumps	No NR Eval
PGE2028		Redwood	Outreach	Annual Solar Home Tour	No NR Eval
PGE2028		Redwood	Training	Education and training	No NR Eval
PGE2028		Redwood	Audit	Municipal direct install	No NR Eval
PGE2028		Redwood	Audit	Community Energy Assessments	No NR Eval
PGE2028		Redwood	Audit	SB Direct Install	No NR Eval
PGE2028		Redwood	Audit	SF direct install	No NR Eval
PGE2028		Redwood	Other	Codes and standards	Cancelled
PGE2029		San Francisco	Audit	Small Business Direct Install	No NR Eval
PGE2029		San Francisco	Training	Education and training (Codes and Standards)	Cancelled
PGE2029		San Francisco	Audit	Commercial Plus	No NR Eval
PGE2029		San Francisco	Audit	MF Plus	No NR Eval
PGE2029		San Francisco	Outreach	Tabline	No NR Eval
PGE2029		San Francisco	Outreach	LEED audit outreach	No NR Eval

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2029		San Francisco	Outreach	Vendor-driven outreach	No NR Eval
PGE2029		San Francisco	Other	Codes and Standards	No NR Eval
PGE2030		San Joaquin	Referral	Referrals to PG&E programs as a result of audits	Cancelled
PGE2030		San Joaquin	Training	On-Site Education	No NR Eval
PGE2030		San Joaquin	Audit	MF Direct Install	No NR Eval
PGE2030		San Joaquin	Outreach	Community Events Tabling	Cancelled
PGE2030		San Joaquin	Training	PEC trainings	Cancelled
PGE2030		San Joaquin	Audit	Municipal Building and Non-Profit Building Audits	No NR Eval
PGE2030		San Joaquin	Other	Codes and Standards Training	No NR Eval
PGE2030		San Joaquin	Other	Real Property Time of Sale Program	No NR Eval
PGE2030		San Joaquin	Other	New Construction Outreach and Education	No NR Eval
PGE2030		San Joaquin	Audit	SB Direct Install	No NR Eval
PGE2031		Santa Barbara	Audit	Municipal Facility Direct Install	No NR Eval
PGE2031		Santa Barbara	Audit	Residential Direct Install	No NR Eval
PGE2031		Santa Barbara	Referral	Municipal Facility Retrofits	No NR Eval
PGE2031		Santa Barbara	Referral	Small Business Direct Install	No NR Eval
PGE2031		Santa Barbara	Training	Solar and HVAC Trainings	Cancelled
PGE2031		Santa Barbara	Audit	Small Business Direct Install	Cancelled
PGE2031		Santa Barbara	Training	Operations & Maintenance	No NR Eval
PGE2031		Santa Barbara	Other	Green Business	Cancelled
PGE2031		Santa Barbara	Training	Codes & Standards	No NR Eval
PGE2033		Stockton	Outreach	Stockton EW Eff. Workshops	Cancelled
PGE2033		Stockton	Referral	Third Party Program Referrals (Cool Biz, Cool Control Plus, etc)	Ongoing
PGE2033		Stockton	Audit	SF Direct Install	No NR Eval
PGE2033		Stockton	Audit	MF Direct Install	No NR Eval
PGE2033		Stockton	Audit	SBA Direct Install	No NR Eval
PGE2033		Stockton	Audit	Municipal Facilities Direct Install	No NR Eval
PGE2033		Stockton	Training	PEC/ETC and AEE Trainings	No NR Eval
PGE2033		Stockton	Outreach	Website	No NR Eval

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2033		Stockton	Outreach	Asparagus Festival, Stockton Ag Expo, Chamber of Commerce	No NR Eval
PGE2033		Stockton	Outreach	CFL Distribution	No NR Eval
PGE2034		SVEW	Training	PEC/ETC classes (check against ODC list)	Cancelled
PGE2034		SVEW	Outreach	Community Outreach	Cancelled
PGE2034		SVEW	Training	City of San Jose Housing Dept. Municipal Training	No NR Eval
PGE2034		SVEW	Other	Public Housing Rehab Inspectors	Cancelled
PGE2034		SVEW	Audit	Residential self-audit	Cancelled
PGE2034		SVEW	Other	Advisory Services	No NR Eval
PGE2034		SVEW	Training	Off calendar workshop	No NR Eval
PGE2034		SVEW	Outreach	Advisory Services	No NR Eval
PGE2034		SVEW	Outreach	Community Outreach/hard to reach targets	No NR Eval
PGE2034		SVEW	Referral	SVEW On calendar workshops	No NR Eval
PGE2034		SVEW	Outreach	Campus presentation	No NR Eval
PGE2035		SVLG	Referral	Referrals	No NR Eval
PGE2035		SVLG	Outreach	Outreach	No NR Eval
PGE2035		SVLG	Training	MBCx Trainings	No NR Eval
PGE2035		SVLG	Other	Codes and Standards	No NR Eval
PGE2035		SVLG	Audit	Retrofits	No NR Eval
PGE2035		SVLG	Audit	Energy Assessments	No NR Eval
PGE2035		SVLG	Audit	MBCx	No NR Eval
PGE2088		DGS State-leased facilities	Other	State financing - Possible SPS issue	Cancelled
PGE2088		DGS State-leased facilities	Audit	DGS Audits	Cancelled
PGE2095		San Luis Obispo	Training	Codes & Standards	No NR Eval
PGE2095		San Luis Obispo	Audit	Small Business Informational “audits”	Cancelled
PGE2095		San Luis Obispo	Training	Operations & Maintenance	No NR Eval
PGE2095		San Luis Obispo	Training	Solar Training	No NR Eval
PGE2095		San Luis Obispo	Referral	Small Business Direct Install	No NR Eval
PGE2095		San Luis Obispo	Referral	Municipal Facility Retrofits	No NR Eval

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
PGE2095		San Luis Obispo	Audit	Residential Informational "audits"	No NR Eval
SCE2519	SCG3521	Ventura County	Training	AB32	Cancelled
SCE2519	SCG3521	Ventura County	Outreach	Kiosks at Public Agencies	No NR Eval
SCE2519	SCG3521	Ventura County	Other	City Planning Goals	No NR Eval
SCE2519	SCG3521	Ventura County	Other	Plan Reviews	No NR Eval
SCE2519	SCG3521	Ventura County	Training	Title 24	Ongoing
SCE2519	SCG3521	Ventura County	Referral	Referrals from Audits Conducted by Full-time Energy Manager	Cancelled
SCE2519	SCG3521	Ventura County	Outreach	Info Tables at Community Events	Cancelled
SCE2519	SCG3521	Ventura County	Other	Resource Center	Cancelled
SCE2520	SCG3522	South Bay	Other	Web Site	No NR Eval
SCE2520	SCG3522	South Bay	Other	CFL Giveaway	No NR Eval
SCE2520	SCG3522	South Bay	Other	Hiring of contract engineers	Cancelled
SCE2520	SCG3522	South Bay	Outreach	Info tables at community events	Cancelled
SCE2520	SCG3522	South Bay	Training	Business Training	No NR Eval
SCE2520	SCG3522	South Bay	Training	Public Sector Training	No NR Eval
SCE2520	SCG3522	South Bay	Other	Energy Center as a resource	Cancelled
SCE2520	SCG3522	South Bay	Training	Residential Training	No NR Eval
SCE2520	SCG3522	South Bay	Outreach	Community sweeps	Cancelled
SCE2520	SCG3522	South Bay	Other	Gas Kit Giveaway	Cancelled
SCE2520	SCG3522	South Bay	Referral	Energy Efficiency Plus Project	Ongoing
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Training	Food Service	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Training	Solar PV Systems	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Referral	SB Direct Install	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Audit	SB Direct Install	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Audit	Home Buyer Program	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Training	City inspectors/Planners/FM	Cancelled
SCE2521	SCG3523,	Bakersfield-Kern	Training	HVAC	Ongoing

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
	PGE2017				
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Outreach	Low Volume Events	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Outreach	High Volume Events	No NR Eval
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Referral	Municipal Facility Retrofit	Ongoing
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Referral	Home Buyer Program	Ongoing
SCE2521	SCG3523, PGE2017	Bakersfield-Kern	Audit	Municipal Facility Retrofits	No NR Eval
SCE2522		South Coast	Outreach	Architecture 2030	Cancelled
SCE2522		South Coast	Training	Title 24	Cancelled
SCE2522		South Coast	Outreach	Info tables at community events	Cancelled
SCE2522		South Coast	Referral	Appliance Turn-In	Cancelled
SCE2522		South Coast	Referral	Small Business Outreach	Not Tracked
SCE2522		South Coast	Referral	Mobile Home Retrofit	Not Tracked
SCE2522		South Coast	Outreach	Trade Ally Relationship Building (e.g. Santa Barbara Contractors Assoc)	Cancelled
SCE2522		South Coast	Outreach	Santa Barbara Contractors Assoc	Cancelled
SCE2523		CEP	Outreach	Other Outreach	No NR Eval
SCE2523		CEP	Outreach	Meeting Outreach	No NR Eval
SCE2523		CEP	Training	PEAK	Cancelled
SCE2523		CEP	Training	Small Business Energy WS	No NR Eval
SCE2523		CEP	Audit	Small Business Tune-ups	Ongoing
SCE2523		CEP	Audit	Residential Tune-ups	Ongoing
SCE2523		CEP	Outreach	Info tables at community events	Cancelled
SCE2523		CEP	Outreach	Presentations/small group outreach	Cancelled
SCE2523		CEP	Training	Student Energy Task Force	No NR Eval
SCE2523		CEP	Training	Youth Leadership Audit Training	No NR Eval
SCE2525		San Gabriel Valley	Outreach	Chamber of Commerce outreach	Cancelled
SCE2525		San Gabriel Valley	Training	Advanced Energy Efficiency	Ongoing
SCE2525		San Gabriel Valley	Training	Title 24	Ongoing

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
SCE2525		San Gabriel Valley	Outreach	Info tables	Cancelled
SCE2525		San Gabriel Valley	Other	Energy Action Plans	Cancelled
SCE2525		San Gabriel Valley	Other	Retrofit/ Recommissioning - Role of additional incentives in project implementation	Cancelled
SCE2525		San Gabriel Valley	Audit	City Facility Audits	No NR Eval
SCE2526	SDGE3001, PGE2018, SCG3518	CCC	Outreach	Facility Coalition and Sustainability Conferences	Cancelled
SCE2526	SDGE3001, PGE2018, SCG3518	CCC	Training	Maintenance practices	No NR Eval
SCE2527		CDCR	Other	MOU Support	No NR Eval
SCE2528		County of LA	Other	City Planning Goals	No NR Eval
SCE2528		County of LA	Other	Green Purchase Program	No NR Eval
SCE2529		County of Riverside	Other	Retrofit/Recommissioning - Role of additional incentives in project implementation	Cancelled
SCE2529		County of Riverside	Audit	County Facilities Audits	No NR Eval
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Other	Data Labs Software	No NR Eval
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Audit	Student Audits	No NR Eval
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Other	Fume Hoods	No NR Eval
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Outreach	Facilities Manager and Sustainability Conferences	Cancelled
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Training	Commissioning	Ongoing
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Training	MBCx	Ongoing
SCE2530	SDGE3026, PGE2036, SCG3520	UC/CSU	Training	EE Procurement	Ongoing
SCE2530	SDGE3026, PGE2036,	UC/CSU	Other	Curriculum Development	Cancelled

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
	SCG3520				
SCE2566		Palm Desert Partnership	Other	General outreach activities	No NR Eval
SCE2567		LGEAR/Mammoth Lakes	Training	Title 24	Ongoing
SCE2567		LGEAR/Mammoth Lakes	Outreach	Monthly Media EE Campaign	Cancelled
SCE2567		LGEAR/Mammoth Lakes	Referral	Energy Star Refrigerators delivery subsidy and Refrigerator Roundup	Ongoing
SCE2567		LGEAR/Mammoth Lakes	Referral	Municipal Facility Retrofit	Cancelled
SCE2567		LGEAR/Mammoth Lakes	Outreach	Info tables at community events	Cancelled
SCE2567		LGEAR/Mammoth Lakes	Outreach	High Sierra Energy Summit	Cancelled
SCE2568		LGEAR/Ridgecrest	Outreach	Monthly Media EE Campaign	Cancelled
SCE2568		LGEAR/Ridgecrest	Referral	Ducted Evaporative Cooler Rebate Program	Ongoing
SCE2568		LGEAR/Ridgecrest	Outreach	High Sierra Energy Summit	Cancelled
SCE2568		LGEAR/Ridgecrest	Outreach	Info tables at community events	Cancelled
SCE2568		LGEAR/Ridgecrest	Training	Title 24	Ongoing
SCG3524		Energy Coalition - PEAK	Audit	Student audits	Cancelled
SCG3524		Energy Coalition - PEAK	Outreach	PEAK outreach/ net impacts	Cancelled
SCG3533		Alliance Partners	Other	Commitments of corporate and government agencies, developers	Cancelled
SCG3533		Alliance Partners	Referral	Participation of "enrolled" organizations in resource programs	Cancelled
SCG3533		Alliance Partners	Other	Development and dissemination of Best Practice Materials	Cancelled
SDGE3002		Chula Vista	Outreach	Internal outreach	Cancelled
SDGE3002		Chula Vista	Other	Building codes and standards	Cancelled
SDGE3002		Chula Vista	Other	Green Infill	No NR Eval
SDGE3002		Chula Vista	Training	Code compliance relative to current code	Cancelled
SDGE3002		Chula Vista	Outreach	City conferences on energy	Cancelled

ID	Secondary ID	Program Name	Element Type	Element	NR Evaluation Status
				efficiency	
SDGE3002		Chula Vista	Training	Code compliance relative to future code	No NR Eval
SDGE3005		City of San Diego	Outreach	Build It Green workshops	Cancelled
SDGE3005		City of San Diego	Referral	Municipal Facilities	Cancelled
SDGE3005		City of San Diego	Outreach	Project facilitation activities	Cancelled
SDGE3005		City of San Diego	Outreach	City conferences on energy efficiency	Cancelled
SDGE3005		City of San Diego	Outreach	Internal outreach	Cancelled

APPENDIX G: NON-RESOURCE PRIORITIZATION SLIDES

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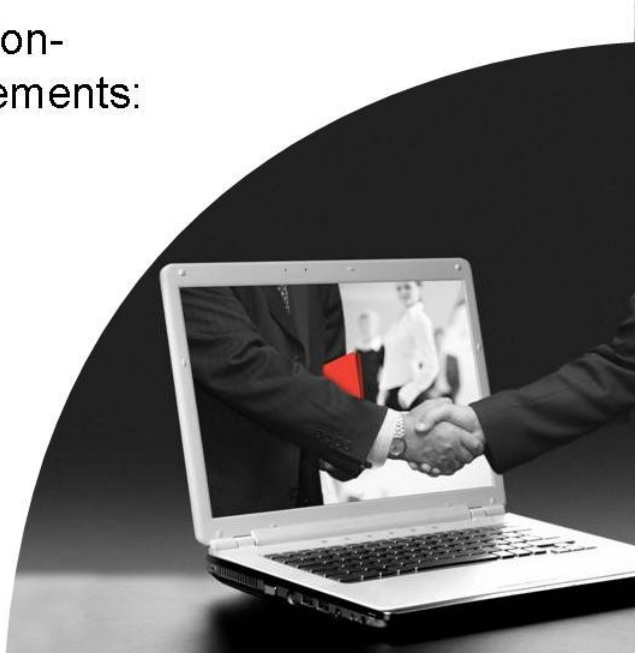
CPUC Evaluation of Non-Resource Program Elements: PGE

Local Government Programs
Evaluation Contract Group



Overview - Policy/Strategy decision support

ID	Program	Element Type	Element	Data Status
PGE2015	ABAG	Other	Policy Assistance	
PGE2015	ABAG	Other	New technologies and street lighting	
PGE2016	AMBAG	Other	Energy Assessment Report	
PGE2020	East Bay	Other	Time of Sale Ordinance – may be addressed in '09-'11 cycle	
PGE2025	Marin County	Other	Energy Checkup/Energy Wi$e	
PGE2025	Marin County	Other	Time of Sale Conservation Ordinance	
PGE2028	Redwood	Other	Codes and standards	
PGE2028	Redwood	Other	Redwood Coast Energy Center	
PGE2031	Santa Barbara	Other	Green Business	
PGE2034	SVEW	Other	Public Housing Rehab Inspectors	
PGE2036	UC-CSU	Other	Curriculum Development	N/A
PGE2088	DGS State-leased facilities	Other	State financing - Possible SPS issue	

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PG&E LGP Programs – Non-Resource Elements Evaluation

Program ID	Program Name	Audits	Training	Outreach	Referrals	Other
PGE2015	Association of Bay Area Governments					
PGE2016	AMBAG					
PGE2017	Bakersfield and Kern County					
PGE2018	CCC					
PGE2019	CDCR					
PGE2020	East Bay Energy Watch (EBEW)					
PGE2021	Fresno Energy Watch (FEW)					
PGE2023	Local Government Energy Action Resources					
PGE2024	Madera Energy Watch		*			
PGE2025	Marin County Energy Watch					
PGE2026	Merced/Atwater Energy Watch					
PGE2027	Motherlode Energy Watch		*		*	
PGE2028	Redwood Coast Energy Watch					
PGE2029	San Francisco Energy Watch (SFEW)					
PGE2030	South San Joaquin (SSJ) Energy Watch					

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E LGP Programs – Non-Resource Elements Evaluation

Program ID	Program Name	Audits	Training	Outreach	Referrals	Other
PGE2031	Santa Barbara County Energy Watch					
PGE2033	Stockton Energy Watch					
PGE2034	Silicon Valley Energy Watch (SVEW)					
PGE2035	Silicon Valley Leadership Group					
PGE2036	UC/CSU *					
PGE2088	DGS State-leased facilities *					
PGE2095	San Luis Obispo					

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PG&E 2015 ABAG (Bay Area) - Overview

1. This partnership, with Energy Solutions being the implementation contractor, provides a one-stop shop for energy efficiency needs for city, county, and special districts in the San Francisco Bay area. Resource components include facility services, (retrofits (lighting and HVAC), retro-commissioning, and computer power management), direct install lighting to municipal facilities and private senior facilities, and street lighting.

   Program goals are: 20 million kWh, 4.6 MW, and 275,000 therms. Sixty-two government agencies are enrolled in ABAG Energy Watch.

   The program provides five elements: facility services, community education, development, and training, policy assistance.

2. Partnership has four NR elements: audits, outreach, referrals, and training and education. There is more pressure to succeed in direct install elements than indirect elements.
   a. Audits are offered via three steps:
      i. Energy assessment reports, which provides an analysis of overall energy use and expenditures for agency facilities, thereby prioritizing opportunities. Also provides a benchmark against other facilities.
      ii. Action plan
      iii. Preliminary energy audits, provides more specific recommendation and tech assistance
   b. Training and education includes:
      i. Workshops targeted to government employees. Two workshops completed to-date ("Implementing Energy Efficiency Projects and Developing Climate Action Plans").
      ii. Policy assistance
   c. Outreach by contacting participants of the 2004-05 Local Government Energy Partnership (LGEP), participating in task forces (e.g., San Mateo Utilities & Sustainability Task Force (USTF)) and other events.
   d. Referrals into other PG&E programs to complete the resource elements aside from direct install

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PG&E 2015 ABAG (Bay Area) – NR Element Activities

A	To support the resource components (retrofit, retro-commissioning, and direct install), complete: - Energy assessment reports - Action plan - Energy audit	Energy assessment Action plan Energy audit	
T	Workshops offered by ABAG: "Implementing Energy Efficiency Projects and Developing Climate Action Plans" (2) Policy Assistance	Implementing Energy Efficiency Projects Workshop Policy Assistance	
O	Presentation at workshops (Alameda County Climate Protection workshop, ABAG Power Annual Board Meeting, etc.) Participation in Community Events and Task Forces (e.g., USTF)	Presentation at workshops Participation in community events	
R	Referral to incentive programs as a result of the audit	Referrals to PG&E Programs	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PG&E 2015 ABAG (Bay Area) – NR Element Activities

X	Policy Assistance • Residential Energy Conservation Ordinance for the City of Berkeley – writing and engineering assistance • City of Pleasanton - Energy Element of the General Plan for The City of Pleasanton • City of San Jose – retro-commissioning policy package for the City of San Jose • County of San Mateo – policy assistance on a Utility and Sustainability Task Force. They are also prepared to assist agencies on such topics as green building guidelines and procurement guidelines.	Policy Assistance	
	New technologies and street lighting • Assist City of Oakland in their efforts to pilot new streetlight technologies. • Initiated an LED street median/landscaping lighting project with the City of San Jose. Project Utilized PG&E's NRR application process (although rebate will be paid from program's incentive budget).	New technologies and street lighting	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2016 AMBAG (Monterey Area) - Overview

1. Partnership focuses on mass markets, multifamily residential, small business and publicly-funded buildings. It is coordinated by Staples Marketing Communications and intends to replicate their success in Bakersfield-Kern County. It is largely a resource program with some non-resource components. 2006-2008 program cycle goals for PG&E are – 19,689 MWh, 5.679 MW, 404,350 therms. Program is close to meeting kWh and peak kW savings goals, but is falling short of the therm savings goals.
   a. Single and Multi-family Direct Install ("Turnkey" – American Synergy)
   b. Small Hospitality Business Direct Install (Staples and American Synergy) – hotels and motels. FSTC covers restaurants – targets lighting, automatic controls, vending misers.
   c. Energy Efficiency Services and Incentives for Municipal Buildings (Staples Marketing)
2. Partnership has four NR elements: audits, training and education, outreach, and referrals
   a. Audits
      i. Provided in support of the resource components
      ii. Free home energy audit (previously the Home Buyers Component)
   b. Training and education
      i. City and County staff and trade allies (HVAC classes, refrigeration)
      ii. Energy assessment report, offered to municipalities provides a detailed analysis of the past 2 years of energy use for the jurisdiction's municipal buildings. The report graphically compares and benchmarks the buildings on various metrics (overall energy use, energy/square foot, etc).
   c. Outreach – Tabling and canvassing such as booths at community events (e.g., "Go for the Green" event sponsored by Monterey and Salinas Chamber of Commerce); direct mailings to realtors for the home energy audit; coordination with Building Owners and Mangers Association to promote Lighting Class
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate

PG&E 2016 AMBAG (Monterey Area) – NR Element Activities

A	SF/' MF Direct Install – audit, free measures to "qualified" homes, rebate assistance (American Synergy) Small Hospitality Business Direct Install - audits and direct install (lighting, automated controls, vending misers, etc. (Staples and American Synergy) Energy Efficiency Services and Incentives for Municipal Buildings Free home energy audit / survey (also known as the "Home Buyer Component" or "Home Owner Program") offered to 800 households (goal is 1,200 by year-end) . Administered strictly through AMBAG.	SF/MF Turnkey SB Direct Install Municipal direct install Free home energy audit	
T	PEC courses ("on-calendar") – (trade allies – designers, engineers, contractors, large commercial customers) Classes include Residential New Construction Program, LED lighting class, and Hi-Bay Lighting Class. Workshops offered outside of PEC by AMBAG for residential and small commercial customers (15 conducted since 2006). Workshops are similar in subject matter as those offered by the PEC, but modified per customer request. Examples include: Commercial and Business Refrigeration (17 attendees) Energy Efficient Lighting and Appliances for Homes (13 attendees) Not Your Plain Vanilla Lighting Retrofit (37 attendees) Advance Framing for Energy and Resource Efficiency (49 attendees)	PEC classes (check against ODC list) Workshops designed and conducted by AMBAG	
O	AMBAG provides outreach through audits, previous conservation education and rebate assistance to clients. Santa Cruz Home Show, Monterey Spring Home Show, Aptos Realtor Meeting (Spr07) = 300 energy audits requested Santa Cruz Lodging Association (20 businesses signed up for audits) Go for the Green – joint Monterey and Salinas Chambers of Commerce Green Building Expo - Monterey Tabling and canvassing - ~10 events	Outreach efforts via previous experience Santa Cruz Home Show Santa Cruz Lodging Association Go for the Green Green Building Expo Other Tabling and Canvassing	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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IOU Partner Programs

PG&E 2016 AMBAG (Monterey Area) – NR Element Activities

R	The energy analyses associated with the multi-family buildings, small business direct install, and municipal energy efficiency programs provide referrals to applicable PG&E incentive programs. Referrals resulting from the Energy Assessment Report, discussed below	Referrals to PG&E Programs Referrals from Energy Assessment Report	
X	Energy Assessment Report – provides AMBAG's municipalities a detailed analysis of the past 2 years in energy use – overall energy use, energy/sq. ft, highest use in therms or kWh. Benchmarking is also provided for each building	Energy Assessment Report	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		

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IOU Partner Programs

SCE2521 SCG3523

PG&E 2017 Bakersfield-Kern Co - Overview

1. Partnership has considerable resource component: 2006-2008 program cycle goals for SCE are – 3,508 MWh and .46 MW during summer peaking. However with incentive funding depleted by December 2007, all marketing and outreach activities were suspended pending further funding. Some restarted in May 2008.
   a. Single-Family and Multifamily Direct Install
   b. Home-Buyer Program – some minor measures distributed
   c. Small Business Direct Install Program:
   d. Municipal Facility Retrofits – "Direct Delivery" of measures
   e. CFL give-aways
2. Partnership has four NR elements: Audits, Training, Outreach, and Referrals.
   a. Audits – exist in some form (energy analysis, site audit, mail-in survey audit, technical review) for each of the resource components
   b. Trainings – Shift in approach to train contractors, designers, installers and inspectors rather than end-users.
   c. Outreach – most of the outreach for this program is marketing the resource components, especially the Single-Family and Multifamily direct install, which are targeted to specific (hard-to-reach) residents
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
   e. CFL give-aways are being captured in verification studies

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IOU Partner Programs

SCE2521 SCG3523

PG&E 2017 Bakersfield-Kern Co. – NR Element Activities

A	SF/MF Direct Install – no audit, free measures to "qualified" homes Home Buyer Program – energy analysis and install 25 CFLs – referred to incentive programs SB Direct Install – site audit – "qualifying" can receive free measures - referred to incentive programs Municipal Facility Retrofits – technical consultant survey major energy consuming system – refer to incentive programs	Home Buyer (see R) SB Direct Install Municipal Facility (see R)	
T	Between 2006 and 2007, 120 trades people attended various HVAC related trainings. These included 4 classes Oct-Dec 2007 put on by ETC-Stockton staff. Topics covered include - Overview of ACCA quality installation standards, equipment sizing and selection using ACCA manual J, zoning design, advanced ACCA Manual D (may be additional training coordinated through the Energy Centers) – Questions in course eval to help quantify potential energy savings – this was a pilot effort to potentially be expanded IOUs coordinate with the city/county to identify and provide education/training to city inspectors, planners, and facility managers. (In one case the city employees were paid overtime wages to attend energy efficiency training seminars on a Saturday.)	Food Service 1 HVAC 8 Solar/PV Systems 1 City Inspectors/Planners/FM ? NOTE: We are coordinating with Bill Norton of ODC to ensure we are not duplicating efforts with their Energy Center evaluation.	
O	95 CFL give away and literature distribution events through Dec 2007 at area home improvement stores, libraries, churches and other locations Bakersfield & Kern County Energy Watch "Big Top" at the 2007 Bakersfield Fall Home Show	Low volume events 95 High volume events 1	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PG&E 2017 Bakersfield-Kern Co. – NR Element Activities

R	The energy analyses associated with the home-buyer, small business direct install, and municipal retrofit programs all provide referrals to applicable IOU incentive programs.	Home Buyer SB Direct Install Municipal Facility	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2018 CCC - Overview

1. The California Community Colleges program is a state-wide program patterned after the UC/CSU/IOU Partnership program. The program offers incentives for retrofit and new construction projects, continuous commissioning, and educational training for the community colleges. The California Community College (CCC) system includes 110 campuses, each of which is responsible for its own energy use. These facilities consume vast quantities of energy and make up a significant portion of both the electric and natural gas loads in the State of California. However, unlike the UC/CSU systems in which all the campuses coordinate closely with the UCOP and Chancellor's offices, California's community colleges have full autonomy over their campuses and facilities, with little to no central coordination.
2. Statewide, the program is on track to meet its goals, which it will do by exceeding them in SCE's territory, but not in others.
3. The utilities often conduct audits on CCC campuses because there is no campus energy manager, and also provide support for completing rebate forms. The audits lead directly into resource acquisition.
4. While the incentives offered are higher in this program than in the UC/CSU program, CCCs do not have the same motivation to participate. They have over $8 billion in funding for renovation and new construction, of which the money offered by the Partnership is just a small drop.
5. The primary non-resource activities for this partnership have been minimal maintenance training conducted early on, and participation in a number of sustainability conferences. (CCCs are now referred to other IOU training programs, rather than participating in customized workshops.)

IOU Partner Programs

SCE2526 SCG3516
SDGE3001

PG&E 2018 CCC – NR Element Activities

A	Audits are to identify measures for the resource component of the program		
T	The only one training initiative is a maintenance practices course that got started but has not really been rolled out, although there does appear to be interest.	Maintenance practices ?	
O	The only outreach has been three conferences, two of which were on the topic of sustainability. One-on-one meetings with facilities managers and cross functional meetings with local PG&E account manager—talk about their programs audit and finance – to introduce the districts usually we include the chief business officer, director of facilities, and thing to establish a top down buy in.	Facility Coalition Conference 1 UC/CSU/CCC Sustainability Conference 1 Ute College Sustainability Conference One-on-one Outreach	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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IOU Partner Programs

SCE2527 SCG3519
SDGE3003

PG&E 2019 - California Department of Corrections and Rehabilitation (CDCR) - Overview

- CDCR's Energy Management Section (EMS) is 18 years old. All EE activities for the CDCR are centralized in the EMS. This centralization is unique among the Statewide Partnerships. 33 adult, 8 youth and hundreds of parole and regional accounting offices are under the EMS's responsibility
- Prior to the CDCR Partnership, there was an Energy Bond Program which were loans of 7-12 years, paid back with the energy savings. The Energy Bond Program expired 6 years and they have struggled to find replacement funding through the capital outlay process.
- Late 2005-early 2006, the Partnership structured the RFQ for ESCOs. Those selected were qualified as of June 2006. Financing finally approved 2007 but the first round projects are not yet fully funded.
- Projects were identified by in-house staff and any ESCO who offered to perform the audit.
- While training is a planned component, and "would be nice," according to interview with the lead partner, it has not been implemented (as of Jan 11, 2008).

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PG&E 2019 - California Department of Corrections and Rehabilitation (CDCR)

SCE2527 SCG3519 SDGE3003

A	Audits are conducted at two stages – first as a feasibility audit to attract and assign the ESCOS, and secondly by the ESCOs themselves to define the work scope. There are no non-resource elements from these audits.		
T	Energy Efficiency Education and Best Practices Development and Training- will provide information on best practices for energy efficiency management and conservation practice that targets not only the maintenance and operations staff but also the wardens and other end-users at each of the facilities.	None have been done to date.	
X	Related to the CDCR program is an MOU being finalized between the State of California (through the Department of General Services under PG&E 2088 that will provide the overarching framework for management and funding for all State of California/IOUs projects at State buildings. The SCE manager said that the CDCR program will in effect be an early pilot for this relationship. **This is a major policy initiative that will have far-reaching impacts on ALL state buildings. Team to examine qualitatively and gauge potential long term impact under SP study. See DGS also.**	MOU Support	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PG&E 2020 East Bay Energy Watch - Overview

1. Partnership focuses on residential, small business and large commercial. It has resource and non-resource components. 2006-2008 program cycle goals for PG&E are – 25,168 MWh and 4.567 MW during summer peaking and 476,722 therms of savings. QuEST is the overall implementing agency. East Bay Energy Watch Program currently exceeding MW and MWh goals. Steam traps replaced pre-rinse valves as preferred savings measure for therms. Program continues to fall short on therm savings target.
   a. Single-Family and Multifamily Direct Install - audit, education, rebate assistance (CYES)
   b. Energy Wise Realtor Program – audits at Time of Sale, some minor measures distributed. Involved training Realtors and inspectors. Program was discontinued, funding shifted to other resource programs (Geopraxis)
   c. Business Energy Service Team and Smart Lights - small business direct install program including audits and referrals. BEST is lighting retrofits (70%) and refrigeration (30%) – gaskets and curtains.
   d. Building Tune-Up : Audits for large complex buildings (including governmental facilities) (QuEST)
2. Partnership has three NR elements: Audits, Referrals and Other
   a. Audits – exist in some form (energy analysis, technical review) for each of the resource components
   b. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
      - Sustainable Berkeley – referral program targeting food service and hospitality sectors – (Community Energy Services)
   c. Time of Sale Energy Conservation Ordinance

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PG&E 2020 East Bay Energy Watch – NR Element Activities

A	SF/MF Direct Install – audit, free measures to "qualified" homes, rebate assistance (CYES) CYES provides information through audits, conservation education and rebate assistance to residential clients. Educational component will include rebate assistance, implementation support for behavioral strategies and information dissemination for EBEW and applicable offerings (referrals) BEST (Business Energy Services Team) and SmartLights – comprehensive auditing and direct install program including Property management companies (Smart Lights). Of 1750 Smart Light surveys, 800 have implemented "some or all of the measures". Smart Lights audit followed by audit report a week later. (BEST – KEMA, SmartLights – Community Energy Services). Both refer to other programs. (Post) inspection forms are specific to project. No other leave behind. Developing Customer Satisfaction Survey Card as leave behind. KEMA has yet to submit draft version to PG&E. BEST has lower administration costs and thus higher incentive levels than Smart Lights. However Smart Lights offers slightly more comprehensive audit package but lower incentives. KEMA post-install inspects 100% of jobs. They have about 2 months of funding left with current leads/project backlog Energy Wise Realtor Program – energy analysis and home rating by trained home inspector, install 4 CFLs (+2 flood CFL's) in "qualified" homes (GEOPRAXIS). Program was discontinued in East Bay due to poor results Building Tune-Up - Large Commercial Retrofits (both governmental and private buildings) - technical consultant survey of control systems, mechanicals and lighting – referral to incentive programs for RCx assistance (QuEST)	SF/MF direct install audits BEST and Smart Light Direct Install Energy Wi$e Building Tune-Up	~3000 ~ 40 new projects/ wk, ~25 completed ones/ week (BEST)	
R	The energy analyses associated with the small business direct install, and municipal/ large commercial retrofit programs all provide referrals to applicable IOU incentive programs. Sustainable Berkeley (added in 2007 after Measure G passed) – part of Green Business program for food service and hospitality. Achieved component goals already – 11 businesses participating) All businesses referred to SmartLights or FSTC (COMMUNITY ENERGY SERVICES) Building Tune-Up - Large Commercial Retrofits (both governmental and private buildings) - technical consultant survey of control systems, mechanicals and lighting – NOT TOO MANY referrals from BTU to other elements, but YES reps refer to the BTU program for RCx assistance (QuEST)	Sustainable Berkeley Building Tune Up		
X	Time of Sale Residential Conservation Ordinance – Want a home-inspector model not a termite inspector model with conflict of interest. NorCal and San Diego region. Shut down in East Bay. Only active in Marin County.	Time of Sale Ordinance – may be addressed in '09-'11 cycle.		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2021 Fresno Energy Watch (FEW) - Overview

1. One of 4 community partnership programs operated by RHA targeting residential, small business, and municipal in the City and County of Fresno. 2006-2008 program cycle goals for PG&E are – 26,110 MWh, 5 MW summer peak, and 133,048 therms of savings. As of April, the program is behind in total goals but is meeting benchmarks. Has 1,261 Direct Install projects.
   a. Single-Family and Multifamily Direct Install – RHA and Nail-Down Construction canvass neighborhoods and install free measures (CFLs, indoor/outdoor hard-wired lighting) in qualifying households
   b. Small Business Direct Install Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.); RHA tracks referrals to PG&E/3rd Party programs; utilizing the Business Expansion and Retention (BEAR) Action Network for referrals--a collaborative effort between the City of Fresno and the Economic Development Corporation serving Fresno County
   c. Municipal Facilities Retrofits – RHA works with staff from City of Fresno and from PG&E to identify opportunities and incentive programs for energy efficiency projects. City of Fresno announced it was postponing a major municipal energy efficiency project until 2009.
2. Partnership has four NR elements: Audits, Training, Referrals, and Outreach
   a. Audits – exist in some form (energy assessment, technical review) for each of the resource components
   b. Training –referrals to energy training center courses and AEE; promotes local training events
   c. Referrals – assessments refer customers to direct install and incentive programs by transferring CDs and/or using Google Docs
   d. Outreach – web-site; display tables at trade shows/expos, business lunches, other local events

PG&E 2021 Fresno Energy Watch – NR Element Activities

A	Single-Family – as part of the DI component, residents may receive a free assessment Multi-Family – promote DI component by tabling at CA Apartment Association Luncheons Small Business Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.) Municipal Facilities – PG&E technical assistants survey major energy consuming systems; 50 audits have been completed	SF Direct Install MF Direct Install SBA Direct Install (130 DI projects in 2008) Muni Direct Install (50 audits)
T	▪Promote Energy Training Center—Stockton/Pacific Energy Center; Promote Association of Energy Engineers—on-line training on efficient boilers and motors ▪Local training—Residential Lighting Design—design to meet Title 24; lighting rebate info. ▪Local training--Refrigeration for Businesses—best EE technologies—AEs, contractors, Energy Consultants (ECs) ▪Local training—Proper Procedures for Charging ACs/HPs—Res/Sm.Comm; NATE Credits ▪Local training—Zoning Design and Beyond—HVAC designers and installers (need list)	(combined with Merced/Atwater and Madera trainings) PEC/ETC and AEE Trainings Res. Lighting (9 partic. in 2007) Refrigeration (14 partic. In 2007) AC/HPs (41 partic. In 2007) Zoning Design—2008
O	Energy Watch web site in 1st Quarter of 2008 Tabling at 2007 events with customized Energy Watch brochures, get contact names: Energy Watch Information Booth at Valley Business Conference 2/28/08—600 attendees California Apartment Association Luncheons (100) Fresno Home & Garden Show (est. 10,000 SF and MF) Business and Technology Expo (est. 2000 small businesses) Fresno Energy & Clean Air Expo (est. 1000 small businesses)	Website Valley Business Conference CAA Luncheons Fresno Home and Garden Show Business and Technology Expo Fresno Energy & Clean Air Expo
R	Third Party Program Referrals since November 2007: Green Buildings Technical Support Services Program (Frontier): trains custom bldrs., affordable housing developers, remodelers —17 referrals (2007-08) California Dairy Energy Efficiency Program (Ensave)—incentives for lighting, ventilation, VSD, milk processing equipment; 1 referral (2007-2008) School Energy Efficiency Program (Resource Solutions)— tech. svcs., financial incentives; 1 referral (2007-2008)	Homebuilder Referrals (17) CA Dairy EE Program Schools EE Program

SCE2518

PGE2023 Local Government Energy Action Resources (LGEAR) - Overview

1. In the fourth quarter of 2007, the utility's partnership with the Great Valley Center, affiliated with the University of California Merced, started up under the LGEAR framework.
2. The Great Valley Center is a nonprofit organization that supports activities and organizations benefiting the economic, social and environmental well-being of California's Great Central Valley.
3. The partnership has hired three full time staff at Great Valley Center dedicated to the partnership.
4. PG&E's hope is that the Center will be able to convene local governments and reach those they have not been able to reach through other partnerships. The PG&E program manager is satisfied with how quickly the Center is coming up to speed on energy efficiency.
5. The partnership has primarily conducted outreach activities to-date. These include:
   - identifying local governments, currently not served by other local government partnerships, for energy efficiency assessments. They have conducted a few assessments to then refer them to core programs.
   - working on an energy efficiency Web site to serve the Great Valley service area.
   - created a pamphlet promoting the program and the value of strategic energy efficiency.
   - networking with other community stakeholders, including the Partnership for the San Joaquin Valley, to promote the program.
6. The partnership has participated in the Change a Light program – a resource element that is included in the CFL Verification evaluation study.

PGE2023 LGEAR– NR Element Activities

T	None directly sponsored by the partnership yet, but they will do some in 2009-2011. They have conducted outreach to the Valley for trainings sponsored by other nearby partnerships.		
O	The outreach efforts to date are early in the development stage, as is consistent with where the program is at this stage of organization. They are not the type of outreach events that we have been including for non-resource evaluation of other programs such as community events or presentations to targeted groups.	Website Brochures Relationship-building Community fairs 2	
R	They have conducted assessments (sometimes also considered for evaluation for audits) and referred municipal facilities into core programs.	Municipal assessments	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2024 Madera Energy Watch (MEW) - Overview

1. One of 4 community partnership programs operated by RHA targeting residential, small business, and municipal in the City of Madera. 2006-2008 program cycle goals for PG&E are – 2,095 MWh, 378 kW summer peak, and 6,976 therms of savings. The program budget for Direct Install has been spent. The program is not meeting total goals, particularly with no installed therms. Had 132 completed Direct Install projects.
   a. Single-Family and Multifamily Direct Install – RHA canvassed neighborhoods and installed free measures (CFLs, indoor/outdoor hard-wired lighting) in qualifying households. The Direct Install portion is no longer available in 2008.
   b. Small Business Direct Install Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.). The Direct Install portion ended in 2008 but starting up again with additional funding.
   c. Municipal Facilities Retrofits – RHA facilitates surveys by PG&E technical consultants of public facilities owned, operated or occupied by the City of Madera to identify potential energy-efficiency opportunities for partnership; RHA recommends applicable incentive programs. RHA is also providing direct delivery services for municipal facilities (deliver T-8's for municipal staff to install).
2. Partnership has two NR elements specific to this program: Audits and Outreach
   a. Audits – exist in some form (energy assessment, technical review) for each of the resource components
   b. Training – promoted one training program in Madera; referrals to other nearby training
   c. Outreach – Web-site; Fairs, Trade Show Booths

PG&E 2024 Madera Energy Watch – NR Element Activities

A	Single-Family – as part of the DI component, residents received a free energy analysis Multi-Family – promoted DI component by tabling at CA Apartment Association Luncheons Small Business Program – promoted through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.) Municipal Facilities – PG&E technical assistants survey major energy consuming systems; 15 audits have been completed	SF Direct Install MF Direct Install SBA Direct Install Muni Direct Install (15 audits)	
T	Only one education and training event has been held for Madera due to proximity to Fresno and Merced/Atwater. Title 24 Update for building inspectors in the 1st quarter of 2008	(combined with Merced/Atwater and Fresno trainings) Madera Title 24 update	
O	Energy Watch web site in 1st Quarter of 2008 Madera Business EC-Travaganza and Trade Show (2007 and 2008)—Silver Sponsor—est. 5,000 SF, MF, and small business owners—provide Energy Watch information brochure; referrals to PG&E rebates; giveaways (CFLs)—take name and phone number for contacts database and conduct follow-up for referrals to DI and other PG&E programs.	Website Madera Bus. EC-Travaganza	
R	There were no referrals provided by the implementation contractor.	No referrals listed by RHA.	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2025 Marin County Energy Watch - Overview

1. Partnership comprises five elements to focus on single and multifamily residential, small, medium and large commercial, and public agencies and schools in Marin County. It is coordinated through Marin EMT (Energy Management Team) and includes several install contractors while MarinEMT focuses on smaller public agencies. It has resource and non-resource components. 2006-2008 program cycle goals for PG&E are – 7,363 MWh and 0.899 MW during summer peaking and 69,340 therms of savings.
   a. Single-Family and Multifamily Direct Install – audit, education, rebate assistance (only CYES portion. PG&E direct install efforts to SF/MF has ended, limiting referrals).
   b. Energy Checkup Program – audits, some minor measures distributed, education, referrals
   c. Small Business Energy Alliance (SBEA) - small & medium business direct install program: audits and referrals, lighting retrofits
   d. Building Tune-Up: Audits, technical assistance for large complex buildings (including governmental facilities)
2. Partnership has three NR elements: Audits, Outreach, Referrals and Other
   a. Audits – exist in some form (energy analysis, technical review) for each of the resource components
   b. Outreach – some outreach for this program is marketing the resource components: Peer Network Lunches
   c. Referrals – primary referrals are from SBEA to Green Business Certification Program
   d. Other
      - Energy Checkup/EnergyWi$e
      - Time of Sale Ordinance
      - Water District and embedded energy savings

PG&E 2025 Marin County Energy Watch – NR Element Activities

A	SF/MF Direct Install – audit, free measures to "qualified" homes, rebate assistance (CYES) CYES provides information through audits, conservation education and rebate assistance to residential clients. Educational component will include rebate assistance, implementation support for behavioral strategies and information dissemination for EBEW and applicable offerings (referrals) SBEA (Small Business Energy Alliance) – serves small and medium businesses + 19 school districts. Focuses on Green Business Certification (referred by PG&E), audits and direct install (lighting, HVAC, refrigeration systems, programmable thermostats, etc.) Energy Checkup/Energy Wise Realtor – energy analysis and home rating, referred to incentive programs and install 4 CFLs (+2 flood CFL's) in "qualified" homes (GEOPRAXIS). PG&E has no inspector incentive attached to its program – Energy Wise. Energy Checkup brand is the type of audit. Very successful in SoCal (esp. San Diego). May be due to difference in type of audit performed. SoCal audits are more commoditized than in NorCal. Failed to attract inspectors. Focus shifted to Realtors in Fall 07. 30 trained in Sept 07. Well received. Realtors trying to differentiate any way they can with market downturn. This is one that appeals to Marin Co homebuyers. Only 4 inspections in Marin Co of 607 state-wide during 2007. 21 inspectors trained in both East Bay and Marin Co. BTU (Building Tune-Up) - large commercial retrofits for both governmental and private buildings. Technical consultant survey of control systems, mechanicals and lighting – referral to incentive programs for RCx assistance (QuEST) – resulted in 21% of savings for October 07	SF/MF direct install SBEA Direct Install no customer education. Report simply identifies recommended actions and cost-share, **(Is this the same as Santa Barbara?)** Energy Check-up/ Energy Wise. 30 Realtors 21 Inspectors Building Tune-Up – achieved kWh & kW goals. Therm goals achieved in public sector. Left over money returned to PBC bucket.	
O	Peer Network Lunches - every other month covers energy-related topics – energy tracking and accounting, energy saving software, etc. (MarinEMT). *Requested data for survey.*	Peer Network Lunches – any actions result from these awareness building events	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2025 Marin County Energy Watch – NR Element Activities

R	SBEA Small Business Energy Alliance	SBEA	
X	Energy Checkup/ Energy Wise Realtor – outreach to Realty community. Building consensus towards adoption of Time of Sale Residential Conservation Ordinance. This element offered by GeoPraxis covers NorCal and Greater San Diego. Being promoted as part of a "Best practices" sales program. GeoPraxis sees Realtors targeting their A-list leads/clientele - the same way Green building entered the market. There has never been a market characterization study of Time of Sale (ToS) energy efficiency. GeoPraxis would like to see an evaluation of the training aspects. CA Realtors Assoc. now has a Green Task Force that is examining options to improve disclosure of energy efficiency at ToS. However ToSEC will move down market slowly. Too much resistance in Central Valley or Inland Empire. The structure of EEM's in CA needs to change before they assist low and middle income homebuyers. Currently structured as "Hold Back" loans with retrofit funds remaining in escrow. FHA, Freddie Mac and Fannie Mae are re-examining EEMs and their structure in the aftermath of the credit crisis. The Holy Grail is getting homebuyers to recognize the additional value provided by a higher HERS rating in their home or in their prospective home Time of Sale Ordinance is intended to be a carrot, not stick. Based on rating system that could be advertised for market differentiation. Previous Water ToS ordinance (low-flow toilets) made Realtors play police role. Do not want that again. MarinEMT hopes Energy Wise becomes "standard" practice that is then codified in ordinance with Realtor support. Working with water districts to integrate EE with water conservation programs – embedded energy savings.	Energy Checkup/Energy Wi$e Time of Sale Conservation Ordinance - modifications, MWD and MarinEMT coordinate residential efforts with CYES to distribute low-flow showerheads, aerators and test flow levels. MarinEMT refers public sector agencies to MWD for audits, assistance .	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2026 Merced/Atwater Energy Watch - Overview

1. One of 4 community partnership programs operated by RHA targeting residential, small business, and municipal in the Cities of Merced and City of Atwater. 2006-2008 program cycle goals for PG&E are – 2,539 MWh, 455 kW summer peak, and 7,640 therms of savings. Not meeting total goals—expanded to City of Los Banos. Had 92 completed Direct Install projects with the Direct Install portion ending in 2007. Direct delivery program for municipals in the 2nd quarter 2008.
   a. Single-Family and Multifamily Direct Install – canvass neighborhoods and make referrals to DI contractor (Synergy) to install free measures (CFLs, indoor/outdoor hard-wired lighting) in qualifying households
   b. Small Business Direct Install Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.).
   c. Municipal Retrofit – RHA facilitates surveys to identify EE potential and recommend appropriate incentive programs. RHA is providing direct delivery services for municipal facilities (e.g., delivering T-8's for municipal employees to install).
   d. Chamber of Commerce—similar program to Stockton REACON starting in Merced.
2. Partnership has four NR elements: Audits, Training, Referrals, and Outreach
   a. Audits – exist in some form (energy assessment, technical review) for each of the resource components
   b. Training – referrals to energy training center courses, AEE, and promotes local training
   c. Referrals – RHA refers participants to 3rd party direct install and incentive programs
   d. Outreach – web-site; information workshops; display tables at business lunches, and other local events

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	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2026 Merced/Atwater Energy Watch – NR Element Activities

A	Single-Family – as part of the DI component, residents may receive a free energy analysis Multi-Family – promote DI component by tabling at CA Apartment Association Luncheons Small Business Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.) Municipal Facilities – PG&E technical assistants survey major energy consuming systems	**SF Direct Install** **MF Direct Install** **SBA Direct Install** **Muni Retrofit (16 audits)**	
T	▪Promote Energy Training Center—Stockton/Pacific Energy Center; Promote Association of Energy Engineers—on-line training on efficient boilers and motors ▪Local training—Basics of Photovoltaics for Grid Tied Applications (2007)—13 from Atwater/Merced with the rest from surrounding areas including 10 from Fresno & Madera ▪Going Green with Food Service and Restaurants (Mercer Restaurant) **Cancelled**	(combined with Madera and Fresno trainings) **PEC/ETC and AEE Trainings** **Basics of PV (47 participants)** **Going Green with Food Service**	
O	Energy Watch web site in 1st Quarter of 2008 Tabling at Local events: Senior Informational Seminar (Mercer Chamber of Commerce) City of Merced Classified Staff Development Day (Merced County Office of Educ) Promoted PG&E's Residential Construction Program (Merced Restaurant)—targets builders, developers Change a Light Newspaper Giveaway—October 2007	**Website** **Senior Seminar** **City Staff Development Day** **PG&E Res. Construction Program** **Change a Light**	
R	A Total of __ Third Party Program Referrals since November 2007: Cool Control Plus— referrals to small hotels and motels Cool Biz incentives for refrigeration— referrals to restaurants, liquor stores, convenience stores Energy Smart Grocers— referrals Laundry Coin-op— referrals School Energy Efficiency Program— referrals Lodging Savers Program— referrals	**Third Party Program Referrals**	

PG&E 2027 Motherlode Energy Watch - Overview

1. Serves municipal and small business customers within the counties of El Dorado, Sierra, Nevada, Placer, Amador, and Calaveras, all counties in the Sierra Foothills. Project is implemented by the El Dorado Management Group. Program goals are: 25,500 MWh, 4.5 MW, and 126,000 therms.

   Resource components of the partnership include:

   1. Municipal Buildings – energy efficiency services and incentives, including an audit to identify energy-consuming systems and prioritize projects. Also provides retrocommissioning services.
   2. Small business and multi-family units – direct install retrofit services provided by Staples Marketing

2. Partnership has four NR elements: audits, outreach, referrals, and training and education. There is more pressure to succeed in direct install elements than indirect elements.
   a. Audits are provided at varying levels depending on sector:
      i. Municipal customers receive energy assessment reports, which provides an analysis of overall energy use and expenditures for agency facilities, thereby prioritizing opportunities. Also provides a benchmark against other facilities. Audits completed for least 50 buildings.
      ii. Small Business walk-through, provided by Staples Marketing when they evaluate the needs of the small business customer. No leave-behind is provided.
   b. Training and education:
      i. Provided to residential, commercial, and local government decision makers. All workshop-based trainings are offered via PG&E Energy Training Center (ETC). Topics include energy efficiency and codes and standards training.
      ii. Informal education for small business customers on de-lamping and multifamily tenants during walk-through audit.
   c. Outreach for small business component is conducted through email circulations (Chamber of Commerce E-mail lists), direct mailings, and community events such as the Placerville Earth Day and energy fairs. Outreach for municipal facilities is through visiting the municipal facilities.
   d. Referrals into other PG&E programs to complete the resource elements aside from direct install

PG&E 2027 Motherlode Energy Watch – NR Element Activities

A	Municipal Building Energy Assessments and Audits - Benchmarking against other facilities - Recommendations for retrofits, retrocommissioning, and financing and program options	Municipal Building Energy Assessments and Audits	
	Small Business Audits - Results in direct install	Small Business Audits for direct install	
	- Recommendations for de-lamping: Jim Doolittle is the implementer from El Dorado Management Group does recommendations for de-lamping as part of direct delivery	De-lamping recommendations	
	Multi-family audits	Multi-family audits	
T	Training events at the PG&E Energy Training Center	Training Activities at ETC	
	Auditor Training seminars (53 participants) – a PG&E Certification Course	Auditor training seminars	
	Informal training for tenants of multi-family buildings on energy saving tips	Tenant education	
	Informal training for small business customers on de-lamping	Small business education on de-lamping	
O	Community Events (Power Palooza, Placerville Earth Day)	Community events	
	Email mailings to Chamber of Commerce mailing list	Email mailing	
	Meetings with municipal facilities to promote the program	Meetings with facilities	
	Market the training opportunities through ETC	ETC outreach	
	Direct mailing of an audit tool or checklist to targeted businesses based on kW.	Direct mailing	
R	Referrals to PG&E Incentive programs	Program referrals	
	Referrals to financial assistance programs		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2028 Redwood Energy Watch - Overview

1. Partnership focuses on single family residential, small business and publicly-funded buildings. It is coordinated by Redwood Coast Energy Authority. It is largely a resource program with some non-resource components. 2006-2008 program cycle goals for PG&E are – 5,185 MWh, 0.783 MW, 79,756 therms.
   a. Small Business Direct Install (expected to provide 80% of all program savings)
   b. Single Family Residential Direct Install (expected to provide 20% of all program savings)
   c. Commercial Building Energy Assessments
   d. Public Agency Energy Efficiency Facilities (municipal facilities)
   e. Industrial Water Pump Services (targeting potable water treatment plants)

2. Partnership has four NR elements: audits, outreach, referrals, and training and education
   a. Audits – exist in some form (energy analysis, technical review) for each of the resource components
   b. Training and education of City and County staff and trade allies
   c. Outreach – some outreach for this program is marketing the resource components: Single family direct install are targeted to specific (low-income and hard-to-reach) residents; Industrial Water Pumps, Small business (audits and retrofits),
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
   e. Other
      i. focus on disseminating information - Redwood Coast Energy Resource Center. Resource Center visits spike after SFDI neighborhood "sweeps"
      ii. Codes and Standards Support (targeting local gov't and trade allies)
         - Time of Sale pilot in City of Arcata (very similar to Energy Wise Realtor, but not run by GeoPraxis. Based on CHEERS). Still very much in development stage. Hope to roll out this element in the next cycle.

PG&E 2028 Redwood Coast Energy Watch – NR Element Activities

A	SF Direct Install – audit, free measures (CFL's etc) to "qualified" homes, rebate assistance (RCEW/RCEA)	SF direct install – includes Res. Winter Peak Load Reduction Drive initiative. Targets low income
	Small Business direct install - audits and direct install (lighting, HVAC) – lighting element like East Bay's SmartLights program; hospitality sector targeted, vending misers, interest in refrigeration	SB Direct Install
	Commercial Energy Assessments	Community Energy Assessments
	Public Agency Energy Efficiency Facilities -	Municipal direct install
T	Motor Efficiency Workshop (43 attendees); (Grid connected PV; Boiler Steam and Water Heating Efficiency, food service, refrigeration, solar hot water, etc) – ETC trainings	Education and training
	Train and certify pump technician(s) – lack of local qualified candidates resulted in postponement of outreach to Ag sector. It's definitely an identified need and they hope to address it in 09-11 cycle	Education and training
O	"Neighborhood Sweeps" – CFL installs and EE literature distribution. Residential Sweeps, do a CLF (only) exchange, where they use students, Optimist Clubs, CA conservation corps, do door to door Advertise in advance, talk to customer find out what they need, try out the light bulb, etc. They call back. Refer to other programs with a leave behind folder.	SF Direct Install "Neighborhood Sweeps"
	Farmers markets – Change –A-Light event. VISTA volunteer to fill role this summer. Booths planned for Arcata and Fortuna Fairs Sept and Oct. respectively.	Tabling Annual Solar Home Tour
	Annual Solar Home Tour - Measures implemented prompted by visit? To what extent that people on tour interested in solar realized/learned that they need to invest in EE first! Red unless we do other solar initiatives.	No registration forms - no way to track or survey
	North Coast Regional Energy Alternatives Conference – Free conference open to public. No registration forms	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2028 Redwood Coast Energy Watch – NR Element Activities

R	Industrial Water Pump Services LED Open Sign exchange Commercial Building Energy Assessments	Industrial Water Pumps SB Direct Install Commercial Build Energy Assessments	
X	Codes and Standards - Short term - promote EE in new construction; improve utility maintenance management ; Cities considering NC Green Building codes. ToS ordinance will occur in Arcata first, perhaps in Q1'09. Humboldt County joined ICLEI - Realtors, inspectors and lending community on Time-of-Sale Energy Assessment Pilot – to get EE upgrades included in mortgage and for upgrade to occur within 6 months of purchase - Longer term - Assisting County with 20 year plan "Energy Element for Humboldt County General Plan" and enhance local energy codes and standards. County General Plan is long slow process. Won't be adopted before summer '09. Industrial Water Pump Service 7 tests on pumps in Dec 07 – 2-3 projects in the works in 2 cities. Roll out to Ag sector postponed – hired part time from Sonoma County Energy Library/Resource Center/Energy Tool Bank – Website, 24-hour answer line, kW meters, solar site selector, etc– information center on renewables and EE. Facilitated with help from Humboldt State Univ. Dept. of Engineering	Codes and standards - Local Codes and Standards may be tightened over time for NC. ToS ordinance likely in Arcata first. Still on hold – Home assessment tool, Data Collection and report protocols TBD Industrial Water Pump Service Redwood Coast Energy Center	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2029 San Francisco Energy Watch - Overview

1. Partnership focuses on multifamily residential and small commercial, and is coordinated through the SF Department of Environment. It has resource and non-resource components. Program became "fully operational" at the beginning of Q3 2007. Reported delays due to contract issues.

   2006-2008 program cycle goals for PG&E are approximately 37,0000 MWh and 4.3 MW during summer peaking and 263,500 therms of savings. Has achieved 12,125 MWh, 1.619 MW and 6,090 therms through March 2008. The primary resource elements are:

   a. Multifamily Plus - direct install, education, and rebate assistance
   b. Small Business Direct Install - audits, measures install, rebate assistance referrals
   c. Commercial Plus – offers small business customers financial incentives based on verified energy savings and demand reductions resulting from custom-designed projects on selected measures
   d. Audits and Technical Services: energy audits, technical, and turnkey services to select customers with focus on small businesses in the restaurants/food service and hospitality industries. Coordinates with city's Green Business certification program
   e. Explore new energy efficiency codes and standards, as well as emerging technologies

2. Partnership has five NR elements

   a. Audits – energy analysis and technical reviews for each of the resource components
   b. Outreach - primarily marketing the resource components
   c. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
   d. Training and education of City staff and trade allies
      a. Energy Efficiency Training and Education – targets City employees and key trade allies, i.e., lead and asthma abatement contractors, homes inspection contractors and real estate agents (through PEC and ETC)
   e. Codes and standards – Developing Residential Energy Conservation Ordinance and Commercial Lighting Ordinance

PG&E 2029 San Francisco Energy Watch – NR Element Activities

A	MF Plus – audit, free measures to "qualified" homes, rebate assistance (SFE / Ecology Action) Small Business direct install - Focuses on Green Business Certification (referred by PG&E), audits and direct install (lighting, HVAC, refrigeration systems, programmable thermostats, etc.) - (Ecology Action) Commercial Plus - customized calculated savings (ICF)	MF Plus SB Direct Install ~300 MF/ Commercial Plus direct install ~200	
T	Codes and standards training Multi-family Plus and Commercial Plus contractor training (6 & 12 Sept, 3 Oct, 14 Nov 07@PEC)	Education and training	
O	Vendor-driven outreach – trained contractors bring in participants City of San Francisco Staff identify buildings for LEED audit Tables or presentation at events, providing information about the program - Event examples: Hospitality Exposition, Presentation at the Chinese Chamber of Commerce, Small Business Week Exposition	Outreach Information related to the program; no EE info General area information, including information re: program	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2029 San Francisco Energy Watch – NR Element Activities

R	The energy analyses associated with the multifamily dwellings, small business direct install, and customized calculated savings programs provide referrals to applicable IOU incentive programs. MultiFamily Plus Small Business Direct Install Commercial Plus	MF Plus Small Business Direct Install Commercial Plus	
X	Codes and Standards - RECO ordinance and Commercial Lighting Ordinance	Continuing to finalize ordinance language Tracking system needs to be established	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2030 South San Joaquin Energy Watch - Overview

1. South San Joaquin Energy Watch is a joint partnership between PG&E, County of San Joaquin, and cities of Manteca, Tracy, and Lathrop. Program goals are 12,802 MWh, 2.3 MW, and 145,192 therms, and targets municipal facilities, businesses, and residential multi-family customers. Resource components include:
   a. Multi-family direct install (American Synergy)
   b. Small business direct install (American Synergy)
   c. Municipal building and non-profit building energy audits (Intergy)
   d. Small industrial direct install (Intergy)
   e. Small Hospitality Business Direct Install (Staples and American Synergy) – hotels and motels. FSTC covers restaurants – targets lighting, automatic controls, vending misers.
   f. Energy Efficiency Services and Incentives for Municipal Buildings (Staples Marketing)
2. Partnership has four NR elements: audits, training and education, outreach, and referrals
   a. Audits: Varies by target market:
      a. Municipal and non-profit building audits take 1-6 hours to complete. Program assesses all sites, prioritize, makes recommendations (while collaborating with PG&E), and assist with paperwork.
      b. Small business audits are walk-through audits that lead to direct install
   b. Training and education: workshops for small business customers through PG&E Pacific Energy Center. Also provides informal education throughout the audit and walk-through process (not documented).
   c. Outreach: community festivals and visits to municipal and city facilities. Distribute informational brochures and, in some events, CFLs. Informational brochures target both residential and small commercial and provide energy-saving information and information about PG&E programs.
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate. Also, post-installation of projects and small commercial walk-through provides an opportunity to funnel customers into more programs.
3. Program has elements defined that are inactive, such as Real Property Time of Sales Program

PG&E 2030 South San Joaquin Energy Watch – NR Element Activities

A	Multifamily Direct Install Audit, a walk-through audit, no leave-behind information (American Synergy) Small Business Direct Install – audits and direct installation, no leave-behind information (American Synergy) Municipal Building and Non-profit Building Audits – building use assessment, prioritization of projects, and meetings with key staff (e.g., engineers, facility managers).	Multi-family direct install Small Business Direct Install Municipal Building and Non-profit Building	
T	Referrals to and hosting of PEC courses offered to small business customers. Education while conducting audits or on customer site, but not documented.	PEC trainings On-site education	
O	Community Tabling Events: - Manteca 4th of July event - Chamber events and festivals, such as the Chamber Mixer and Lathrop Chamber of Commercce Morning Cafe - Tracy Dry Bean Festival - Manteka Pumpkin Fair	Community Tabling Events	
R	Funnel municipal customers, small industrial and non-profit customers into PG&E programs via audits Provide referrals to small business direct install customers	Referrals to PG&E programs as a result of audits	
X	**Codes and Standards for Energy Efficiency: Work with local officials to enhance local codes and standard (No activity to date)** **Real Property Time of Sale Program: Qualified agents receive EE training, and inspectors are trained to provide time-of-sale energy checkup ratings to new homeowners (No activity to date)** **New Construction Outreach and Education: educational outreach activity for developers and county/city personnel (Limited activity to date)**	- Codes and Standards Training - Real Property Time of Sale Program - New Construction Outreach and Education	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PGE2031 Santa Barbara - Overview

- PG&E entered into a new partnership with the County of Santa Barbara in February 2008.
- PG&E provides electric service in northern Santa Barbara County only. In PG&E's service area, partnership offerings will be available to small businesses, Santa Barbara County and other municipalities within northern Santa Barbara County.
- The PG&E program manager reports that northern Santa Barbara is different culturally from southern Santa Barbara County, served by the SCE partnership.
- The focus of partnership activity has been small business and municipal direct installs through PG&E's contractor.
  - The small business direct install does contain an audit that identifies additional improvements that go beyond the direct install measures identified (e.g., lighting, hot water, refrigeration). They will be rolling out a residential direct install that will also have an audit in July 1, 2008.
- The partnership will be working with the County of Santa Barbara's Green Business Program.
- The partnership does not have energy savings goals for this program cycle because of it's late start-up, but is expected to for the 2009-2011 program cycle.
- The partnership will be doing several trainings including training maintenance staff on operation and maintenance, codes and standard training and solar training.

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PGE2031 Santa Barbara – NR Element Activities

A	Informational audits identifying additional energy efficiency improvements delivered to small businesses as part of their direct install program. Will also be offered to residential customers starting July 1, 2008. We will want to revisit the Residential DI element to determine if it can be included in the next round of NR evaluation efforts.	Small Business Direct Install Municipal Facility Direct Install Residential Direct Install*
T	Trainings planned (maintenance staff operation and maintenance, codes and standards, solar) (Should we look at he HVAC one? Deliver a survey before it starts?)	Operations & Maintenance* Codes & Standards* Solar HVAC
O	Outreach has primarily been to non-residential customers to-date. Plans to begin residential outreach to targeted community this Summer. There are no current outreach activities that are consistent with the types of activities being included in the cross-cutting outreach evaluation to assess behavior change achieved.	
R	Small business direct installs and municipal direct installs retrofits.	Small Business Direct Install Municipal Facility Retrofits
X	Will work with businesses on energy part of the County's Green Business Program. Energy savings will be captured through direct install, but will also have information component.	Green Business

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PG&E 2033 Stockton Energy Watch - Overview

1. One of 4 community partnership programs operated by RHA targeting residential, small business, and municipal in Stockton. 2006-2008 program cycle goals for PG&E are – 11,389 MWh, 2.3 MW summer peak, and 75,876 therms of savings. As of April, the program is behind in meeting total goals, particularly with no installed therms. Completed 476 Direct Install projects.
   a. Single-Family and Multifamily Direct Install – RHA canvass neighborhoods and make referrals to DI contractors to install free measures (CFLs, indoor/outdoor hard-wired lighting) in qualifying households
   b. Small Business Direct Install Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.).
   c. Municipal Facilities – RHA is working with staff from City of Stockton and from PG&E to identify and proceed with energy efficiency projects. Now includes Direct Install.
   d. Recycling-Energy-Air-Conservation (REACON): The REACON program is an initiative of the Stockton Chamber of Commerce to promote recycling and energy efficiency. RHA staff accompany REACON staff performing energy efficiency audits of area businesses. Provide referrals to Stockton Energy Watch DI and other EE programs.
2. Partnership has four NR elements: Audits, Training, Referrals, and Outreach
   a. Audits – exist in some form for each of the resource components
   b. Training –referrals to energy training center courses, AEE, and promotes local training
   c. Referrals – RHA refers customers to direct install and other incentive programs
   d. Outreach – web-site; information workshops, fairs, business conferences, other local events

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	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

PG&E 2033 Stockton Energy Watch – NR Element Activities

A	Single-Family – as part of the DI component, residents may receive a free energy analysis Multi-Family – promote DI component by tabling at CA Apartment Association Luncheons Small Business Program – promote through business conferences; free installation of selected energy-efficient measures (e.g., lighting, LED exit signs, occupancy sensors, etc.) Municipal Facilities – technical assistants survey major energy consuming systems; 15 audits have been completed	SF Direct Install MF Direct Install SBA Direct Install (130 DI projects in 2008) Muni Direct Install	
T	▪Promote Energy Training Center—Stockton/Pacific Energy Center; Promote Association of Energy Engineers—on-line training on efficient boilers and motors	PEC/ETC and AEE Trainings	
O	Energy Watch web site in 1st Quarter of 2008 Tabling at 2007 events: Stockton Energy Watch Efficiency Workshops— promoted 5 events 3 days in 2007 at STC (29 local businesses participated) no-cost and low-cost equipment, rebates, and incentives available, and PG&E programs. Applications and program representatives at each presentation. Distributed literature at Chamber of Commerce events, the Asparagus Festival, Stockton Ag Expo, and the Stockton State of the City Address. 2007 "Change a Light Month," 1,116 CFLs were distributed at community events.	Website Stockton EW Eff. Workshops Asparagus Festival, Stockton Ag Expo, Chamber of Commerce CFL Distribution	
R	A Total of __ Third Party Program Referrals (using Google Docs and/or mailing out CDs of referrals) since November 2007: Cool Control Plus— referrals to small hotels and motels Cool Biz incentives for refrigeration— referrals to restaurants, liquor stores, convenience stores Energy Smart Grocers— referrals Laundry Coin-op—referrals School Energy Efficiency Program— referrals Lodging Savers Program— referrals	Third Party Program Referrals	

PG&E 2034 Silicon Valley Energy Watch - Overview

1. Partnership focuses on single and multi-family residential, and non-residential commercial. It is coordinated by SVEW which is housed within the City of San Jose's Environmental Services Department. It is entirely a non-resource program. The Program assisted the City of San Jose for the first 10 months. Since Winter 2007, SVEW has shifted its focus from the City to the community. Staff turned over in Fall 2007. Applying for Resource Status for '09-'11
2. The Partnership has three NR elements: outreach, referrals, and training and education:
   a. Outreach – outreach for this program is marketing the non-resource components
   b. Referrals – to other PG&E programs – including some funneling for specific sectors
   c. Training and education of City and County staff and trade allies
      i. Energy Efficiency Education Outreach and Classes
         - ~20 classes conducted by PEC and ETC in 2007 targeting trade allies and large commercial
         - ~15 workshops targeting residential and small business customers (coordinate with 3P programs)
         - Training classes for housing rehabilitation inspectors for City Dept of Housing – adding energy component to health and safety inspections in low-income SF homes. (Residents can receive up to $20,000 in grants and loans to address health and safety issues.)

      ii. Codes and Standards Support (targeting trade allies)

PG&E 2034 Silicon Valley Energy Watch – NR Element Activities

A	Residential self-audit – SCANTRON form and instruction booklet – distributed at tabling events and then sent to PG&E. No way to track form or credit program with any potential savings	Residential self-audit
T	PEC/ETC courses ("on-calendar") – 20 such in 2007 (trade allies – designers, engineers, contractors, large commercial customers) Attendance lists held by ETC/PEC (Silicon Valley "off calendar" Workshops for residential and small commercial customers (support resource programs with education) - ~15 to date SVEW has attendance lists Municipal classes – housing rehabilitation inspectors (typically for low-income units) – Held in Jan and Feb 08.	PEC/ETC classes (check against ODC list) Off calendar workshop City of San Jose Housing Dept
O	Streetlight Technical Advisory Committee Community events/ tabling Speaking on campus at SJ State Univ. (occurred under previous program staff) Current SVEW coordinator would like to increase outreach to Latino and Vietnamese communities, as well as offer more training courses for building managers and inspectors across Santa Clara County (Should be evaluated in '09)	Advisory Services Community Outreach Campus presentation Community Outreach/hard to reach targets*
R	The workshops (on- and off-calendar) provide referrals to applicable IOU incentive programs. Accounted for in other resource programs Go Green Schools Solar Schools Commercial Pools Efficiency	SVEW On calendar workshops
X	Codes and Standards – City of San Jose's Green Vision - 15-year goal of cutting per capita energy consumption 50%, diverting 100% waste from landfills, sourcing only renewable energy Municipal classes – housing rehabilitation inspectors (typically for low-income units) – Held in Jan and Feb 08.	Advisory Services Public Housing Rehab Inspectors

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PG&E 2035 Silicon Valley Leadership Group - Overview

1. SVLG is a resource program that focuses entirely on the commercial sector – all sizes of businesses – and specifically targets members of SSV – Sustainable Silicon Valley and SVLG trade association. The program intends to reduce overall energy demand and provide a platform for demand response programming. The program integrates MBCx with energy monitoring and metering equipment. SSV will assist its members in developing their own Climate Action Plans as part of the program. The Partnership has the following energy savings targets: 20,859 MWh, 3.277 MW (Summer Peak), Therms 63,810. The three primary resource elements are:
   a. MBCx (modeled after UC/CSU/CCC program) and targeting bldgs larger than 100,000 sq ft.
   b. Commercial Building Energy Assessments - audits to identify EE and peak demand reduction options, and refer/recommend to applicable incentive program(s)
   c. Energy Efficient Retrofits – Lighting, mechanicals, boilers, wastewater treatment, etc. Identified by audits – already providing initial project pipeline. Other options will be examined on an on-going basis

2. Partnership has four NR elements: audits, outreach, referrals, and training and education
   a. Audits – Energy Assessments of member companies (of SVLG and SSV).
   b. Training and education – of building managers and operators, design community, engineers, general public, etc.
   c. Outreach – to building managers and operators on energy efficiency, demand response, climate change
   d. Referrals – to appropriate programs per client need

PG&E 2035 Silicon Valley Leadership Group
Energy Watch – NR Element Activities

A	Energy assessments - Energy audits and technical services are provided for membership companies, including estimates of projected savings, assistance in completing rebate applications, and referral to qualified vendors and installers. -MBCx -Energy Efficient Retrofits - facilitate application preparation and approval, provide technical services, and offer attractive financial incentives for the installation of qualifying energy-efficient measures.	Energy Assessments MBCx Retrofits	
T	MBCx – (of building managers and operators?) (SSV efforts are listed under T&E on www.calenergywatch.org, not community outreach, although that is what it sounds like after speaking with SSV Exec Dir.)	How much T&E goes with the MBCx efforts	
O	SSV provides community outreach and education through 90 minute monthly Best Practice meetings and half-day quarterly forums. Targeted at members (including building operators, trade allies, etc) and the general public. Publishes list of attendees, but no contact information nor tracking of translation from attendance to membership. SSV also attends numerous community tabling events, but does not keep track of people who visit the table or inquire about further information other than required for follow-up	Outreach	
R	to appropriate programs per client need – this happens infrequently and in an ad hoc fashion. No official tracking method for referrals.	Referrals	
X	Policy issues for Silicon Valley – transportation, green visioning, green building, etc…	Codes and Standards	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

SCE2530 SCG3520
SDGE3026

PG&E 2036 UC/CSU - Overview

1. 23 California State University (CSU) and 10 University of California (UC) campuses statewide 2006-2008 program cycle goals are 100,000 MWh and 25 MW of electricity savings and 3,500,000 therms of natural gas savings.
2. Partnership has four main elements: retrofits, monitoring based commissioning (MBCx), education and outreach, and the Green Campuses program. Expectation was that savings would split evenly between retrofits and MBCx, but 2/3 of savings have come from retrofits.
3. Energy savings and funding are split about evenly between UC and CSU. Funding is proportional to utility service territory. Roughly 2/3 of targeted kWh savings are in PG&E territory, as are roughly half of kW and therm savings.
4. Newcomb, Anderson, McCormick (NAM) is responsible for program administration and management consulting, and maintains the program database, excluding Green Campus projects. Individual campuses contract with ESCOs, engineering firms, or do the work internally. Campus applications go to NAM, which then submits applications to the utilities.
5. The training and education portion of the programs was heavily frontloaded to help identify potential projects. Demand for training remains high. Most training (e.g. Building operation certification and MBCx training) relates directly to the program's energy savings.
6. Sustainability Conference - The programs help sponsor ($90,000 funding & organization assistance) an annual three day sustainability conference featuring speakers, exhibits, and competitions intended for staff, students, and faculty.
7. Green Campus – Currently operates on 9 campuses; run by the Alliance to Save Energy. The program hires student interns on each campus to identify and implement small energy efficiency projects on their campuses. Interns conduct audits, and work with campus faculty and administration to promote energy efficiency.

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IOU Partner Programs

SCE2530 SCG3520
SDGE3026

PG&E 2036 UC/CSU – NR Element Activities

A	Green Campus audits conducted by interns of campus facilities to identify behavioral change	Student audits	
T	The Commissioning and MBCx trainings are directly associated with the resource elements of the program. The program database does not clearly link the two; PA to investigate further. .	Commissioning 5 MBCx 6	
	EE Procurement	EE procurement 6	
O	Conferences include Green Campus tracks at CSU Facilities Manager Conference and the UC/CSU/CCC Sustainability Conference	Conference 2	
X	Fume Hood savings come from behavior change	Fume Hoods	
	Curriculum Development includes student projects on campus that contribute to energy savings	Curriculum Development ?	
	Data Labs – Green Campus introduced software that allows campuses to manage their networks more efficiently. Savings already being claimed under the Green Campus program.	Data Labs Software	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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PGE2088 DGS State-leased facilities - Overview

1. This program focuses on buildings leased or owned by the State of California (as administered by the California Department of General Services) that are 5,000 square feet or larger and offers benchmarking, energy audits, retro-commissioning, technical assistance, design advice, rebates, and direct implementation services. Measures focus mainly on HVAC, controls and lighting. The program is offered statewide.

2. An MOU was signed (August 2006) between the State of California (through the Department of General Services) that will provide the overarching framework for management and funding for all State of California/IOUs projects at State buildings. As part of this process, funds will be budgeted by the state as well as relationships created with ESCOs.

3. According to the DGS (April 2008), the program is still in startup, and involves all four IOUs as partners, with MOUs signed with the IOUs and relationships established with 3-6 ESCOs, including for the CDCR program.

4. The funding is at $17M statewide, but this is solely IOU/CPUC incentive funds. This money has largely not been spent because projects have not been installed.

5. The mission is to focus on retrofits at state owned and leased facilities., to target retrofits, not RCX, and to focus on work not being covered under the Green Buildings initiative.

6. The State will cover the investment costs not covered by the incentives. This will be done through what they call the Energy Smart Program (formerly known as the GS Smart Program). They chose not to seek financing from ESCOs mainly because they think they can get better rates and financing themselves through state/municipal financing.

PGE2088 DGS State-leased facilities - Overview (continued)

- A barrier is funding investment grade audit necessary to enter into ESCO contracts on projects. The ESCOs would like to do the audit themselves, however, but resist self-funding the audits. He thinks resistance on the State's part to paying for the audits is a cultural issue that needs to be worked on (e.g., need to invest to get payback).
- ESCO's: Their role is to install measures, and guarantee performance, but not put up financing.
- In addition to CDCR, they have released RFPs for three bundles of projects on DGS buildings. On the first one, they have selected an ESCO and are now finalizing the contract. On at least the first RFP, they did not get a good response, but this may be a function of the attractiveness of the projects.
- **Non-resource elements are really limited:**
  - **Green Conference --- Last month, Green Cal. Summit, presented a 4 hour training session with partnership.**
  - **Audits and planned audits at CHP, National Guard, Dept. of Developmental Services, and Dept of Mental Health, they should lead to projects this cycle and next. The focus to date has been on projects identified through the CDCR program, however savings and results are being credited to that effort and not PGE 2088.**
- The savings goals for this program for the 2006-2008 cycle are 1,818,200 MWh and the budget is $862,575.
- The program has far-reaching implications for the achievement of energy savings and demand reductions going forward to the extent that the financing component is successful.

PGE2088 DGS State-leased facilities – NR Element Activities

A	Two types of audits are conducted. 1) Audits are conducted as a preliminary step to identify viable projects and "market" projects to ESCOs 2) Investment grade audits then have to be performed to form the basis of a contract with the ESCOs to install meaures and conduct the M&V necessary to secure payments.	Green stripe – Investigate as part of the Comparative Audit assessment	
T	Training that was performed at the Green Building Conference to share about the program.		
X	Overall concept of state-financing and its role in moving projects to reality. Relationships of EE to Green Buildings initiatives – How much does the EE funding through the CPUC/IOU partnerships matter as a point of leverage for getting projects moving, or is the Green Building initiative enough as a stand alone initiative?	Possible SPS issue	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PGE2095 San Luis Obispo - Overview

- This is a new partnership in 2008 with the County of San Luis Obispo.
- PG&E is closely coordinating this partnership with the Santa Barbara partnership, which shares a geographic boundary.
- The two partnerships will co-sponsor trainings in a location central to both localities.
- The partnerships are using the same program implementer, Staples, and strategies.

PGE2095 San Luis Obispo – NR Element Activities

A	Informational audits identifying additional energy efficiency improvements delivered to small businesses as part of the direct install program. Will also be offered to residential customers starting in 2008.	Small Business Informational "audits" Residential Informational "audits"*	
T	Trainings planned (maintenance staff operation and maintenance, codes and standards, solar)	Operations & Maintenance* Codes & Standards* Solar	
O	Outreach has primarily been to non-residential customers to-date. Plans to begin residential outreach in 2009. There are no current outreach activities that are consistent with the types of activities being included in the cross-cutting outreach evaluation to assess behavior change achieved.		
R	Small business direct installs and municipal retrofits.	Small Business Direct Install Municipal Facility Retrofits	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

Overview - Program-Specific Net Energy Impacts (page 1)

ID	Program	Element Type	Element	Data Status
PGE2015	ABAG	Audit	Energy assessment	
PGE2015	ABAG	Audit	Action plan	
PGE2015	ABAG	Audit	Energy audit	
PGE2015	ABAG	Training	Implementing Energy Efficiency Projects Workshop	
PGE2016	AMBAG	Audit	Free home energy audit	
PGE2016	AMBAG	Training	PEC classes (check against ODC list)	
PGE2016	AMBAG	Training	Workshops designed and conducted by AMBAG	
PGE2017	Bakersfield-Kern	Training	HVAC	Data provided
PGE2017	Bakersfield-Kern	Training	City inspectors/Planners/FM	Request pending
PGE2020	East Bay	Audit	SF/MF direct install audits	
PGE2025	Marin County	Audit	SF/MF direct install	
PGE2025	Marin County	Audit	Energy Check-up	
PGE2025	Motherlode	Audit	De-lamping recommendations	

Overview - Program-Specific Net Energy Impacts (page 2)

ID	Program	Element Type	Element	Data Status
PGE2027	Motherlode	Training	Training Activities at ETC	
PGE2027	Motherlode	Training	Small business education on de-lamping	
PGE2028	Redwood	Training	Education and training	
PGE2029	San Francisco	Training	Education and training	
PGE2030	San Joaquin	Training	PEC trainings	
PGE2031	Santa Barbara	Audit	Small Business Direct Install	
PGE2034	SVEW	Audit	Residential self-audit	
PGE2034	SVEW	Training	PEC/ETC classes (check against ODC list)	
PGE2036	UC/CSU	Training	Commissioning	Request pending (some data provided)
PGE2036	UC/CSU	Training	MBCx	Request pending (some data provided)
PGE2036	UC/CSU	Training	EE Procurement	Request pending (some data provided)

Overview - Program-Specific Net Energy Impacts (page 3)

ID	Program	Element Type	Element	Data Status
PGE2088	DGS State-leased facilities	Audit	DGS Audits	
PGE2095	San Luis Obispo	Audit	Small Business Informational "audits"	

Overview - Behavior Change Potential (page 1)

ID	Program	Element Type	Element	Data Status
PGE2015	ABAG	Outreach	Presentation at workshops	
PGE2015	ABAG	Outreach	Participation in community events	
PGE2016	AMBAG	Outreach	Outreach efforts via previous experience	
PGE2016	AMBAG	Outreach	Direct mailings promoting audits	
PGE2016	AMBAG	Outreach	Tabling/canvassing at community events	
PGE2018	CCC	Outreach	Facility Coalition and Sustainability Conferences	Request pending
PGE2018	CCC	Outreach	One-on-one Outreach	
PGE2021	Fresno	Outreach	Valley Business Conference	
PGE2024	Madera	Outreach	Madera Bus. EC-Travaganza	
PGE2025	Marin County	Outreach	Peer Network Lunches	
PGE2027	Motherlode	Outreach	Community events	
PGE2027	Motherlode	Outreach	Direct mailing	

Overview - Behavior Change Potential (page 2)

ID	Program	Element Type	Element	Data Status
PGE2028	Redwood	Outreach	SF Direct Install "Neighborhood Sweeps"	Request pending
PGE2028	Redwood	Outreach	Tabling	
PGE2028	Redwood	Outreach	Annual Solar Home Tour	
PGE2030	San Joaquin	Outreach	Community Tabling Events	
PGE2033	Stockton	Outreach	Stockton EW Eff. Workshops	
PGE2034	SVEW	Outreach	Community Outreach	
PGE2036	UC/CSU	Outreach	Facility Coalition and Sustainability Conferences	Request pending

Overview - Crosscutting Referral Mechanisms (page 1)

ID	Program	Element Type	Element	Data Status
PGE2015	ABAG	Referral	Referrals to PG&E Programs	
PGE2016	AMBAG	Referral	Referrals to PG&E Programs	
PGE2016	AMBAG	Referral	Referrals from Energy Assessment Report	
PGE2017	Bakersfield-Kern	Referral	Home Buyer Program	Request pending
PGE2017	Bakersfield-Kern	Referral	Municipal Facility Retrofit	Request pending
PGE2020	East Bay	Referral	Building tune-up	
PGE2021	Fresno	Referral	Homebuilder Referrals (17)	
PGE2025	Marin County	Referral	SBEA	
PGE2026	Merced/Atwater	Referral	Third Party Program Referrals	
PGE2027	Motherlode	Referral	Program referrals	

Overview - Crosscutting Referral Mechanisms (page 2)

ID	Program	Element Type	Element	Data Status
PGE2028	Redwood	Referral	SB Direct Install	
PGE2029	San Francisco	Referral	MF Plus	
PGE2029	San Francisco	Referral	Small Business Direct Install	
PGE2029	San Francisco	Referral	Commercial Plus	
PGE2030	San Joaquin	Referral	Referrals to PG&E programs as a result of audits	
PGE2033	Stockton	Referral	Third Party Program Referrals	

Overview - Policy/Strategy decision support

ID	Program	Element Type	Element	Data Status
SCE2519	Ventura County	Other	Resource center	Request pending
SCE2520	South Bay	Other	Hiring of contract engineers	N/A
SCE2520	South Bay	Other	Energy Center as a resource	N/A
SCE2525	San Gabriel Valley	Other	Energy Action Plans	N/A
SCE2525	San Gabriel Valley	Other	Retrofit/ Recommissioning - Role of additional incentives in project implementation	N/A
SCE2529	County of Riverside	Other	Retrofit/Recommissioning - Role of additional incentives in project implementation	N/A
SCE2530	UC-CSU	Other	Curriculum Development	N/A

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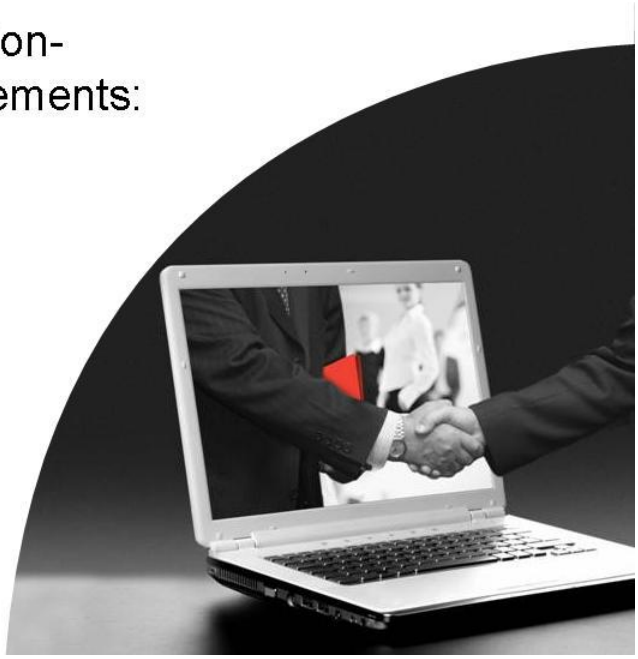
CPUC Evaluation of Non-Resource Program Elements: SCE

Local Government Programs
Evaluation Contract Group



SCE LGP Programs – Non-Resource Elements Evaluation

Program ID	Program Name	Audits	Training	Outreach	Referrals	Other
SCE2518	Local Government Energy Action Resources					
SCE2519	Ventura County Partnership					
SCE2520	South Bay Partnership					
SCE2521	Bakersfield and Kern County Partnership					
SCE2522	Santa Barbara (South Coast) Partnership					
SCE2523	Community Energy Partnership (Non-Resource)					
SCE2524	Community Energy Partnership (Resource)					
SCE2525	San Gabriel Valley EE Partnership Program					
SCE2526	California Community Colleges (CCC)		*			
SCE2527	CDCR					
SCE2528	County of Los Angeles Partnership					
SCE2529	County of Riverside Partnership		*	*	*	
SCE2530	UC-CSU					
SCE2566	Palm Desert Partnership					
SCE2567	Mammoth Lakes Partnership					
SCE2568	Ridgecrest Partnership					

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2518 Local Government Energy Action Resources (LGEAR) - Overview

1. The primary responsibility for cities participating in the LGEAR program is to undertake marketing and outreach activities to inform households and businesses in their jurisdictions about energy efficiency opportunities and to direct them to the energy efficiency programs being offered by SCE and third parties.
2. LGEAR is an umbrella that allows municipalities to have a direct partnership with SCE. There is not a third party implementer under the LGEAR model.
3. Two municipalities are participating in the 2006-2008 cycle, discussed in detail next.
    1. The City of Ridgecrest
    2. The Town of Mammoth Lakes
4. Partners do not have direct savings goals. However, LGEAR does have resource goals of over 8,000,000 kWh. LGEAR has a 1.94 million budget, but has only spent $111,000 to-date.
5. Both partners expressed high satisfaction with the partnership. Both partners and SCE staff reported in process interviews that the LGEAR partnership has been very successful in bringing SCE programs and services to rural areas that were previously under-served because of their geographically distant location.

    "*Because we are remote, we've had very little access to SCE and education, the partnership has brought this to us.*" –Partner town manager
6. The two partners' activities are discussed separately in the following slides.

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SCE 2519 Ventura County Partnership - Overview

A partnership between the Ventura County Regional Energy Alliance (VCREA), SCE and SCG to create the Ventura County Energy Resource Center (VCERC) formed in 2003.

The partnership covers 10 cities, 35 school districts and more than 20 water district agencies. A Joint Powers Authority (JPA) which is composed of public agencies working in collaboration to approach the availability, reliability, conservation and innovative use of energy resources in the Ventura County region. The current JPA consists of Ventura County and the cities of San Buenaventura, Oxnard, Santa Paula and Thousand Oaks, the Ventura County Community College District, the Ventura Regional Sanitation District and the Casitas Municipal Water District.

The county has two experienced full-time contracted public employees that includes an energy management professional to provide training and technical assistance.

Key resource component - the Comprehensive Public Sector Program which provides technical and project management assistance to public facilities and 'community asset' organizations, such as schools, hospitals, museums and community centers throughout the region. A majority of direct resource acquisition is attributed to technical assistance provided by the full-time energy manager who identifies opportunities to save energy (audits), reviews bid documents and helps agencies to contract with outside contractors to implement retrofit measures.

Non-resource components include:

Training - of county staff, codes and standards
Outreach – a local clearinghouse of energy information
Referrals - where appropriate audit participants are referred into resource programs
Other – city council seminars on sustainability and efficiency, holiday lighting exchange

SCE 2519 Ventura County – **NR Element Activities**

A	VCREA full-time energy manager who identifies opportunities to save energy (audits). Savings is either claimed by Ventura County or are referred to other resource programs.		
T	Their training efforts are directed at public agencies, local government officials, city engineers, chambers of commerce and pre-school facilities. They believe that trainings have resulted in energy savings i.e. computer operation management, installation of LED exit signs and vending misers. (26 trainings held in 2007)	Title 24 AB32	
O	Not much effort on the residential sector.	Kiosks at public agencies Community Events 14	
R	Where appropriate the VCREA energy manager refers participants to other resource programs. These will be included in a cross-cutting referral evaluation for referrals from audits. (34 resource projects implemented)	Referrals from audits	
X	They have conducted four-hour planning sessions on climate change and energy planning policy for city council members, who have then used the training to develop energy planning goals for their cities that include targeted reductions in energy use by public facilities. (How similar are these to the Energy Action Plans discussed for San Gabrielle Valley?). The resource center is a resource for the area and they do track use of the facility, meters, meeting rooms, information materials, although they believe it is underutilized.	City Planning Goals Plan Reviews* Resource Center Users	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCE 2520 South Bay Partnership - Overview

The South Bay Partnership is run by the South Bay Cities Council of Governments (SBCCOG) through the South Bay Energy Savings Center.

The mission of the South Bay Energy $avings Center is to serve the region's constituents as the central clearinghouse for energy efficiency information and resources, and significantly increase the availability of information and resources to the people in the South Bay region to help them save energy and save money.

South Bay has no energy savings goals and no real resource component

South Bay is one of the few programs that has goals for non-resource activities (number of events):

Program Elements include:

Audits – municipal buildings – a lot of schools – referred into resource programs
Training – residential, commercial and institutional
Outreach – the program has significantly exceeded its outreach goals
Referrals – the program does refer participants into resource programs
Other - Gas Kits, CFL Giveaways, Contract Engineer, Web Site

SCE 2520 South Bay Partnership – NR Element Activities

A	Energy Efficiency Plus Project (EE+) Municipal Facilities Audits - conducted on buildings such as the Redondo Beach Unified School District Administration building, the City of Torrance fleet services garage, main fire station, and five libraries, the office of Congresswoman Jane Harman. Computer Network Energy Management Initiative Vending Miser Lighting Retrofit Initiative - referred into Express Efficiency		
T	The program believes that this is a key strategy for the South Bay Partnerships program. However, based on the information we have reviewed to date. However, the trainings are not technical, they are used to inform participants about incentive programs (referrals), with the topics tend to be general energy efficiency with many of them on renewable energy and water topics.	Public Sector 8/6 Business 12/12 Residential 29/30	
O	The program has significantly exceeded its original goals of 18 community outreach events and has conducted 4 community sweeps against its goal of 3. A number of the outreach efforts are conducted in conjunction with city council meetings of participating local governments (14 events).	Community Outreach 176/18 community sweeps 4/3	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCE 2520 South Bay Partnership – NR Element Activities

R	South Bay Energy Savings Center is continuing to place additional emphasis on the funneling of businesses to Southern California Edison and Southern California Gas Company account representatives through outreach programs to service organizations and chambers of commerce. In the 4th quarter 2007 they added a dedicated person to follow up with customers regarding their audits and inquire if they had made any energy or water efficiency changes. 9 clients referred in the fourth quarter of 2007.	Energy Efficiency Plus Project		
X	The program does CFL giveaways, typically associated with their training and outreach events.	CFL Giveaways Contract Engineer Web Site		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCE 2521 Bakersfield-Kern Co - Overview

1. Partnership has considerable resource component: 2006-2008 program cycle goals for SCE are – 3,508 MWh and .46 MW during summer peaking. However with incentive funding depleted by December 2007, all marketing and outreach activities were suspended pending further funding. Some restarted in May 2008.
   a. Single-Family and Multifamily Direct Install
   b. Home-Buyer Program – some minor measures distributed
   c. Small Business Direct Install Program:
   d. Municipal Facility Retrofits – "Direct Delivery" of measures
   e. CFL give-aways
2. Partnership has four NR elements: Audits, Training, Outreach, and Referrals.
   a. Audits – exist in some form (energy analysis, site audit, mail-in survey audit, technical review) for each of the resource components
   b. Trainings – Shift in approach to train contractors, designers, installers and inspectors rather than end-users.
   c. Outreach – most of the outreach for this program is marketing the resource components, especially the Single-Family and Multifamily direct install, which are targeted to specific (hard-to-reach) residents
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
   e. CFL give-aways are being captured in verification studies

SCE 2521 Bakersfield-Kern Co. – NR Element Activities

A	SF/MF Direct Install – no audit, free measures to "qualified" homes Home Buyer Program – energy analysis and install 25 CFLs – referred to incentive programs SB Direct Install – site audit – "qualifying" can receive free measures - referred to incentive programs Municipal Facility Retrofits – technical consultant survey major energy consuming system – refer to incentive programs	Home Buyer (see R) SB Direct Install Municipal Facility (see R)	
T	Between 2006 and 2007, 120 trades people attended various HVAC related trainings. These included 4 classes Oct-Dec 2007 put on by ETC-Stockton staff. Topics covered include - Overview of ACCA quality installation standards, equipment sizing and selection using ACCA manual J, zoning design, advanced ACCA Manual D (may be additional training coordinated through the Energy Centers) – Questions in course eval to help quantify potential energy savings – this was a pilot effort to potentially be expanded IOUs coordinate with the city/county to identify and provide education/training to city inspectors, planners, and facility managers. (In one case the city employees were paid overtime wages to attend energy efficiency training seminars on a Saturday.)	Food Service 1 HVAC 8 Solar/PV Systems 1 City Inspectors/Planners/FM ? NOTE: We are coordinating with Bill Norton of ODC to ensure we are not duplicating efforts with their Energy Center evaluation.	
O	95 CFL give away and literature distribution events through Dec 2007 at area home improvement stores, libraries, churches and other locations Bakersfield & Kern County Energy Watch "Big Top" at the 2007 Bakersfield Fall Home Show	Low volume events 95 High volume events 1	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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IOU Partner Programs
PGE2017 SCG3523

SCE 2521 Bakersfield-Kern Co. – NR Element Activities

R	The energy analyses associated with the home-buyer, small business direct install, and municipal retrofit programs all provide referrals to applicable IOU incentive programs.	Home Buyer SB Direct Install Municipal Facility	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2522 South Coast - Overview

- The partnership is varied and consists of the large city of Santa Barbara and the smaller cities of Carpinteria and Goleta (newly incorporated) as well as the County of Santa Barbara. Process interviews report this partnership as a success and these different entities are working together and communicating regularly.
- The partnership does not have direct energy and demand savings goals. The Community Environment Council (CEC) is responsible for program administration, maintains the program database and program website. The partnership has proposed a different program implementer for the next program cycle.
- The program funnels to existing IOU programs through various community sweeps and outreach to residential and non-residential customers. They sponsored a dedicated outreach person from SCE for the small business direct install program.
- They are promoting non-residential program participation through an Energy Champion decal for businesses to display.
- The program also has a strong outreach components. These include:
  1. Participation in community activities and fairs such as EarthDay, the Goleta Lemon Festival and HarborDay.
  2. Meeting with local trade ally organizations to promote energy efficiency including the Santa Barbara Contractors Association and Architecture 2030.
  3. Media advertisements and maintaining a website with energy efficiency tips
- The partnership hosted both a CFL Exchange and a Holiday Light Exchange.
- For training, the partnership conducted a SCE Customer Technology Application Center (CTAC) off-site training course on Title 24

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SCE 2522 South Coast – NR Element Activities

T	SCE Customer Technology Application Center (CTAC) off-site training course Title 24	Title 24 1	
O	Information tables at community events. Relationship building with local trade ally organizations – hope to be doing code trainings and other things in the future.	Info Tables Santa Barbara Contractors Assoc. Architecture 2030 3	
R	Funneling to existing programs with outreach emphasis on mobile homes, small businesses and appliance sweep. Developed energy champion decal to promote participation of non-residential customers in programs.	Mobile Home Retrofit Small Business Appliance Turn In	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2523 - Community Energy Partnership – Overview

- Primary a facilitator model, where CEP uses its considerable expertise and staffing to engage local governments – there are ten LGs that are their market focus
- Energy Coalition is the partner but serves as the implementation contractor (3rd party?) and is a go-between with the local governments. They conduct programs outside of California and have a significant brand in offerings like PEAK.
- The program claims savings from Direct Install measures delivered at the time of Tune Ups, CLF distributions and municipal retrofits.
- Not clear whether the program claims energy savings from measures installed by the customer as a result of audit; they do not capture behavioral changes.
- Non resource elements are considerable – Community organizing is their forte, but it has taken a back seat to achievement of resource goals.
- Outreach events – Many are done, small group presentations, large volume, low volume with the intent of education, CFL and low cost measures distribution and recruiting into Tune Ups. Even though the events are each unique, there is a consistency of the outreach methods.

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SCE 2523 Community Energy Partnership

A	Audits are conducted by Energy Coalition staff as a component of the Tune-Up service. This combines direct installation of measures, educational material on behavioral changes, and recommendations for additional retrofits. There is a small business and a residential version of Tune-Ups. Non-resource/ behavioral piece: Tune-up recipients get a findings checklist to act on and simple energy saving behaviors are identified (e.g. lower thermostat, lower water heater temp, clean furnace filters, clean lint traps, efficient washer/dryer use). Some adjustments are made by the customer in the presence of the auditor (e.g., adjust water heater temp) so they learn how to do them correctly in the future. Postcard surveys have been done and we have been provided the results. We will follow up with more thorough surveys.	Res Tune Ups = 2,574 SB Tune Ups = 182	
T	A total of 12 training events reported in NRAT. Eight of these are related to he PEAK program for teachers of students in grades 4 to 6.	Audit (Youth Leadership) 2 PEAK 8 Student Energy Task Force 1 Small Business Energy WS 1	
O	Community Outreach is a central feature of the CEP. Energy Coalition works with ten local governments to deliver services on a menu-type basis. Holding community outreach events – staffed by EC and local government staff - is one of their fortes.	Info Table-High Volume 7 Info Table-Low Volume 49 Meeting 1 Other 7 Presentation/Small Group 31	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2525 San Gabriel Valley - Overview

- Primarily focused on retrofit and retro-commissioning projects in city facilities, and raising EE awareness. Non-resource elements identified as "training" and "marketing and outreach" and target both residential and non-residential customers.
- The program partner is the Southern California Association of Governments (SCAG). Intergy is the contracted implementer. It is reported the partnership is operating simliarly to a third-party program. Intergy contracts directly with the Council of Governments (COG) to provide outreach for the partnership.
- Cities report high satisfaction with the program because of additional assistance provided by Intergy over regular SCE assistance. There is also an increased lighting incentive that is viewed as a positive for moving municipalities forward with retrofits.
- Projects have been completed in 4 different cities to-date.
- Two cities are completing Energy Action Plans. Energy Action Plans for Cities serve as a roadmap for future energy efficiency projects and funding.
- The partnership has sponsored several non-residential training workshops focusing on different technologies.
- The partnership outreaches to businesses through working with local Chambers of Commerce to funnel them to SCE programs.
- The program outreaches to residential customers through attending community events. The program implementer reports attending 10 different outreach functions to-date.
- The program implementer also maintains a program website, www.sgvenergywise.org

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SCE 2525 San Gabriel Valley – NR Element Activities

A	Audits of city facilities conducted to identify opportunities for retrofits and re-commissioning. Savings based on audit recommendations are expected to be claimed in resource element.	Audits of city facilities	
T	Non-residential workshops	Advanced Energy Efficiency 4 Title 24 1	
O	The partnership outreaches to businesses through working with local Chambers of Commerce to funnel them to SCE programs.	Chamber of Commerce Outreach Info Tables	
X	Energy Action Plans have been developed with two cities. The partnership is claiming resource savings related to the retrofits and re-commissioning be implemented, however, it may be worth investigating role that additional incentive and TA play in getting projects implemented.	Energy Action Plans 2 Retrofits Re-commissioning	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2526 CCC - Overview

1. The California Community Colleges program is a state-wide program patterned after the UC/CSU/IOU Partnership program. The program offers incentives for retrofit and new construction projects, continuous commissioning, and educational training for the community colleges. The California Community College (CCC) system includes 110 campuses, each of which is responsible for its own energy use. These facilities consume vast quantities of energy and make up a significant portion of both the electric and natural gas loads in the State of California. However, unlike the UC/CSU systems in which all the campuses coordinate closely with the UCOP and Chancellor's offices, California's community colleges have full autonomy over their campuses and facilities, with little to no central coordination.
2. Statewide, the program is on track to meet its goals, which it will do by exceeding them in SCE's territory, but not in others.
3. The utilities often conduct audits on CCC campuses because there is no campus energy manager, and also provide support for completing rebate forms. The audits lead directly into resource acquisition.
4. While the incentives offered are higher in this program than in the UC/CSU program, CCCs do not have the same motivation to participate. They have over $8 billion in funding for renovation and new construction, of which the money offered by the Partnership is just a small drop.
5. The primary non-resource activities for this partnership have been minimal maintenance training conducted early on, and participation in a number of sustainability conferences. (CCCs are now referred to other IOU training programs, rather than participating in customized workshops.)

SCE 2526 CCC – NR Element Activities

A	Audits are to identify measures for the resource component of the program		
T	The only one training initiative is a maintenance practices course that got started but has not really been rolled out, although there does appear to be interest.	Maintenance practices ?	
O	The only outreach has been three conferences, two of which were on the topic of sustainability.	Facility Coalition Conference 1 UC/CSU/CCC Sustainability Conference 1 Ute College Sustainability Conference 1	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs
PGE2019 SCG3519
SDGE3003

SCE 2527 - California Department of Corrections and Rehabilitation (CDCR) - Overview

- CDCR's Energy Management Section (EMS) is 18 years old. All EE activities for the CDCR are centralized in the EMS. This centralization is unique among the Statewide Partnerships. 33 adult, 8 youth and hundreds of parole and regional accounting offices are under the EMS's responsibility
- Prior to the CDCR Partnership, there was an Energy Bond Program which were loans of 7-12 years, paid back with the energy savings. The Energy Bond Program expired 6 years and they have struggled to find replacement funding through the capital outlay process.
- Late 2005-early 2006, the Partnership structured the RFQ for ESCOs. Those selected were qualified as of June 2006. Financing finally approved 2007 but the first round projects are not yet fully funded.
- Projects were identified by in-house staff and any ESCO who offered to perform the audit.
- While training is a planned component, and "would be nice," according to interview with the lead partner, it has not been implemented (as of Jan 11, 2008).

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IOU Partner Programs
PGE2019 SCG3519
SDGE3003

SCE 2527 - California Department of Corrections and Rehabilitation (CDCR)

A	Audits are conducted at two stages – first as a feasibility audit to attract and assign the ESCOS, and secondly by the ESCOs themselves to define the work scope. There are no non-resource elements from these audits.		
T	Energy Efficiency Education and Best Practices Development and Training- will provide information on best practices for energy efficiency management and conservation practice that targets not only the maintenance and operations staff but also the wardens and other end-users at each of the facilities.	None have been done to date.	
X	Related to the CDCR program is an MOU being finalized between the State of California (through the Department of General Services under PG&E 2088 that will provide the overarching framework for management and funding for all State of California/IOUs projects at State buildings. The SCE manager said that the CDCR program will in effect be an early pilot for this relationship. **This is a major policy initiative that will have far-reaching impacts on ALL state buildings. Team to examine qualitatively and gauge potential long term impact under SP study. See DGS also.**	MOU Support	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2528 County of Los Angeles Partnership - Overview

- Continuation of successful 2004-2005 partnership
- Focuses primarily on retrofit and retro commissioning activities in County of LA facilities
- All training is conducted in conjunction with facility retrofits and retro commissioning
- The partnership provided support for the development of LA County's February 2007 Energy Policy, which will help the county to have a more cohesive strategy to deal with energy/water efficiency and sustainable practices
- Partnership has had an impact on the County's Green purchasing strategies, and helped developed the Green purchasing guidelines passed in January 2007

SCE 2528 County of Los Angeles – NR Element Activities

X	Determine what impact the Green purchase program and LA County Energy Policy have had on purchasing practices, new construction, etc.	Green Purchase Program City Planning Goals	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCE 2529 County of Riverside - Overview

- Primarily a resource-based program focused on retrofits, retro-commissioning, and "modernization" of County of Riverside facilities.
- Partner reports high satisfaction with the program and that the additional techniCal assistance and program application facilitation provided through the partnership's consultants has increased their participation in SCE energy efficiency programs.
- County staff (the county energy manager supported by 3 other staff members) administer the program. The partnership allows for increased incentive levels over the program rebate levels because the county does not take any administrative costs.
- Fifteen county projects are under review, four projects have been completed.
- The partnership has started with its focus on county facilities. It expects to facilitate program participation and provide technical assistance to any county non-residential customers, but that has not happened yet.
- While the partnership description also cites "outreach and education element with the goal of raising awareness about the benefits of being energy efficient" as non-resource component, none have taken place to-date.

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SCE 2529 County of Riverside – NR Element Activities

A	Audits of county facilities conducted to identify opportunities for retrofits and re-commissioning. Savings based on audit recommendations are expected largely be claimed in resource element.	County Facilities Audits	
T	None to date, revisit in 6-8 months		
O	None to date, revisit in 6-8 months		
R	None to date, revisit in 6-8 months		
X	Additional incentives are provided to audit participants to increase participation in the retrofits and re-commissioning initiatives justified by reduced administrative costs since it is run by county staff. May be worth investigating role that additional incentive plays in getting projects implemented.	Retrofits Re-commissioning	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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IOU Partner Programs

PGE2036 SCG3520
SDGE3026

SCE 2530 UC/CSU - Overview

1. 23 California State University (CSU) and 10 University of California (UC) campuses statewide 2006-2008 program cycle goals are 100,000 MWh and 25 MW of electricity savings and 3,500,000 therms of natural gas savings.
2. Partnership has four main elements: retrofits, monitoring based commissioning (MBCx), education and outreach, and the Green Campuses program. Expectation was that savings would split evenly between retrofits and MBCx, but 2/3 of savings have come from retrofits.
3. Energy savings and funding are split about evenly between UC and CSU. Funding is proportional to utility service territory. Roughly 2/3 of targeted kWh savings are in PG&E territory, as are roughly half of kW and therm savings.
4. Newcomb, Anderson, McCormick (NAM) is responsible for program administration and management consulting, and maintains the program database, excluding Green Campus projects. Individual campuses contract with ESCOs, engineering firms, or do the work internally. Campus applications go to NAM, which then submits applications to the utilities.
5. The training and education portion of the programs was heavily frontloaded to help identify potential projects. Demand for training remains high. Most training (e.g. Building operation certification and MBCx training) relates directly to the program's energy savings.
6. Sustainability Conference - The programs help sponsor ($90,000 funding & organization assistance) an annual three day sustainability conference featuring speakers, exhibits, and competitions intended for staff, students, and faculty.
7. Green Campus – Currently operates on 9 campuses; run by the Alliance to Save Energy. The program hires student interns on each campus to identify and implement small energy efficiency projects on their campuses. Interns conduct audits, and work with campus faculty and administration to promote energy efficiency.

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IOU Partner Programs

PGE2036 SCG3520
SDGE3026

SCE2530 UC/CSU – NR Element Activities

A	Green Campus audits conducted by interns of campus facilities to identify behavioral change	Student audits	
T	The Commissioning and MBCx trainings are directly associated with the resource elements of the program. The program database does not clearly link the two; PA to investigate further. .	Commissioning 5 MBCx 6	
	EE Procurement	EE procurement 6	
O	Conferences include Green Campus tracks at CSU Facilities Manager Conference and the UC/CSU/CCC Sustainability Conference	Conference 2	
X	Fume Hood savings come from behavior change	Fume Hoods	
	Curriculum Development includes student projects on campus that contribute to energy savings	Curriculum Development ?	
	Data Labs – Green Campus introduced software that allows campuses to manage their networks more efficiently. Savings already being claimed under the Green Campus program.	Data Labs Software	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PA Consulting Group

SCE 2566 Palm Desert Partnership - Overview

- The Partnership has aggressive goals over its five year implementation period (2007-2011): 30% reductions in energy and demand. Its main purpose is to establish a model other communities can replicate.
- The program does not have a Program Implementation Plan; it was established by order of an Administrative Law Judge
- The program is being implemented as a partnership between SCE, SCG, Palm Desert and the Energy Coalition
- No projects or programs, only 150 measures, each of which has pre-determined savings estimates associated with it, and each of which is included in the Palm Desert E3 calculator spreadsheet
- The Palm Desert measures are divided into four categories: Residential-Products (for example, Window Film on Single Pane Clear Glass), Residential HVAC (for example, Central AC Duct Seal), Non-Residential Express, and Non-Residential Customer Unique.

SCE 2566 Palm Desert Partnership - NR Element Activities

A	In-home surveys, which feed into measure implementation		
O	Outreach events to promote partnership offerings and services	General outreach activities	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCE 2567 LGEAR Mammoth Lakes - Overview

- The Town of Mammoth Lakes hires an external contractor, High Sierra Energy Foundation, to manage the town's energy use. High Sierra Energy Foundation is administering the partnership the town's behalf.
- The Mammoth Lakes partnership has been heavily focused on outreach activities. These include:
  1. "Did You Know" weekly advertising campaign in newspaper and radio through 2007 and 2008. Partner believes the marketing campaign is impacting area's general energy efficiency knowledge and behavior.
  2. Information tables at community events including CFL and free caulk giveaways
  3. The partnership has implemented both a Holiday LED Light Exchange and Operation Light Exchange.
  4. LivingWise, the energy efficiency hands-on activities program for the 6th grade is scheduled to implement in 2008.
  5. The High Sierra Energy Summit is planned for August 11-15, 2008
- The partnership focuses on funneling to SCE programs. Funneling activities include:
  1. a multi-family rebate sweep (focused on resort condominiums),
  2. working with the town to identify opportunities for Savings by Design and other programs,
  3. Outreach to small business for SCE's small business direct install program.
- For training, the partnership is planning a SCE Customer Technology Application Center (CTAC) off-site training courses on Title 24 at Mammoth Lakes Cerro Coso College.
- Other funneling activities include a refrigerator round-up/delivery. There is not an appliance store close to Ridgecrest. The partnership arranged for SEARS to deliver EnergyStar refrigerators and the partnership rebated delivery costs to overcome availability barriers.

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SCE 2567 LGEAR Mammoth Lakes – NR Element Activities

T	SCE Customer Technology Application Center (CTAC) off-site training courses at Mammoth Lakes Cerro Coso College Title 24	Title 24 1	
O	Energy efficiency education campaign Information tables at community events High Sierra Energy Summit	Monthly media Events Week event*	
R	This program has two key initiatives that refer constituents into resource programs: 1) the EnergyStar refrigerator initiative covers delivery costs to participants in the resource program since EnergyStar refrigerators are not stocked by stores in this area and 2) the Municipal Facility Retrofits initiative funnels municipal facilities into lighting incentive programs	EnergyStar Refrigerators Municipal Facility Retrofit	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCE 2568 LGEAR Ridgecrest - Overview

- A city staff member has primary responsibility for the partnership. She is working on it about a quarter time and reports it is a priority for the city.
- The Ridgecrest partnership has also been heavily focused on outreach activities. These include:
  1. Newspaper and radio marketing campaign – "The City of Ridgecrest and Southern California Edison – A powerful Partnership."
  2. The partnership has implemented both a Holiday LED Light Exchange and Operation Light Exchange.
  3. LivingWise, the energy efficiency hands-on activities program for the 6th grade is scheduled to implement in 2008.
  4. The High Sierra Energy Summit is planned for August 11-15, 2008
- The partnership focuses on funneling to SCE programs. Funneling activities include:

1. Advertise multi-family rebate sweeps
2. Promote Ducted Evaporative Cooler rebate, which is now part of the Home Energy Efficiency Rebate (HEER) Program. The Partnership will offer an additional incentive to Ridgecrest residents to broaden participation in the program.
3. Non-residential outreach for small business direct install and other programs

- For training, the partnership conducted a SCE Customer Technology Application Center (CTAC) off-site training courses on Title 24 at Ridgecrest Cerro Coso College Dec 2007.

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SCE 2568 LGEAR Ridgecrest – NR Element Activities

T	SCE Customer Technology Application Center (CTAC) off-site training courses at Ridgecrest Cerro Coso College Title 24	Title 24 1	
O	Energy efficiency education campaign Information tables at community events High Sierra Energy Summit	Monthly media Events High Sierra Energy Summit*	
R	Funneling to non-residential programs, primarily the Ducted Evaporative Cooler rebate program (SCE HEER program referral, but includes additional rebate for Ridgecrest residents).	Ducted Evaporative Cooler Rebate Program	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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Overview - Program-Specific Net Energy Impacts (page 1)

ID	Program	Element Type	Element	Data Status
SCE2519	Ventura County	Training	Title 24	Data provided
SCE2519	Ventura County	Training	AB32	Request pending
SCE2521	Bakersfield-Kern	Training	HVAC	Data provided
SCE2521	Bakersfield-Kern	Training	City inspectors/Planners/FM	Request pending
SCE2522	South Coast	Training	Title 24	Request pending
SCE2523	CEP	Audit	Residential Tune-ups	Data provided
SCE2523	CEP	Audit	Small Business Tune-ups	Data provided
SCE2523	CEP	Training	PEAK	Data provided
SCE2525	San Gabriel Valley	Training	Title 24	Request pending (some data provided)
SCE2525	San Gabriel Valley	Training	Advanced Energy Efficiency	Data provided

Overview - Program-Specific Net Energy Impacts (page 2)

ID	Program	Element Type	Element	Data Status
SCE2530	UC/CSU	Training	Commissioning	Request pending (some data provided)
SCE2530	UC/CSU	Training	MBCx	Request pending (some data provided)
SCE2530	UC/CSU	Training	EE Procurement	Request pending (some data provided)
SCE2567	LGEAR/Mammoth Lakes	Training	Title 24	Data provided
SCE2568	LGEAR/Ridgecrest	Training	Title 24	Data provided

Overview - Behavior Change Potential (page 1)

ID	Program	Element Type	Element	Data Status
SCE2519	Ventura County	Outreach	Info tables at community events	Request pending
SCE2520	South Bay	Outreach	Info tables at community events	Data provided
SCE2520	South Bay	Outreach	Community sweeps	Request pending
SCE2522	South Coast	Outreach	Info tables at community events	Request pending (some data provided)
SCE2522	South Coast	Outreach	Trade Ally Relationship Building (e.g. Santa Barbara Contractors Assoc)	Gathering additional info
SCE2523	CEP	Outreach	Info tables at community events	Data provided
SCE2523	CEP	Outreach	Presentations/small group outreach	Data provided
SCE2525	San Gabriel Valley	Outreach	Chamber of Commerce outreach	Request pending
SCE2525	San Gabriel Valley	Outreach	Info tables	Request pending
SCE2526	CCC	Outreach	Facility Coalition and Sustainability Conferences	Request pending
SCE2530	UC/CSU	Outreach	Facility Coalition and Sustainability Conferences	Request pending

Overview - Behavior Change Potential (page 2)

ID	Program	Element Type	Element	Data Status
SCE2567	LGEAR/Mammoth Lakes	Outreach	Info tables at community events	Request pending (some data provided)
SCE2567	LGEAR/Mammoth Lakes	Outreach	High Sierra Energy Summit	Request pending
SCE2568	LGEAR/Ridgecrest	Outreach	Info tables at community events	Request pending (some data provided)
SCE2568	LGEAR/Ridgecrest	Outreach	High Sierra Energy Summit	Request pending

Overview - Crosscutting Referral Mechanisms

ID	Program	Element Type	Element	Data Status
SCE2519	Ventura County	Referral	Audits conducted by full-time energy manager	Request pending
SCE2520	South Bay	Referral	Energy Efficiency Plus Project	Request pending
SCE2521	Bakersfield-Kern	Referral	Home Buyer Program	Request pending
SCE2521	Bakersfield-Kern	Referral	Municipal Facility Retrofit	Request pending
SCE2522	South Coast	Referral	Mobile Home Retrofit	Gathering additional info
SCE2522	South Coast	Referral	Small Business Outreach	Gathering additional info
SCE2522	South Coast	Referral	Appliance Turn-In	Gathering additional info
SCE2567	LGEAR/Mammoth Lakes	Referral	Energy Star Refrigerators delivery subsidy	Request pending
SCE2567	LGEAR/Mammoth Lakes	Referral	Municipal Facility Retrofit	Request pending
SCE2568	LGEAR/Ridgecrest	Referral	Ducted Evaporative Cooler Rebate Program	Request pending

Overview - Policy/Strategy decision support

ID	Program	Element Type	Element	Data Status
SDGE3002	Chula Vista	Other	Building codes and standards	N/A
SDGE3026	UC-CSU	Other	Curriculum Development	N/A
SCG3521	Ventura County	Other	Resource center	Request pending
SCG3522	South Bay	Other	Hiring of contract engineers	N/A
SCG3522	South Bay	Other	Energy Center as a resource	N/A
SCG3533	Alliance Partners	Other	Commitments of corporate and government agencies, developers	Gathering additional info
SCG3533	Alliance Partners	Other	Development and dissemination of Best Practice Materials	Gathering additional info

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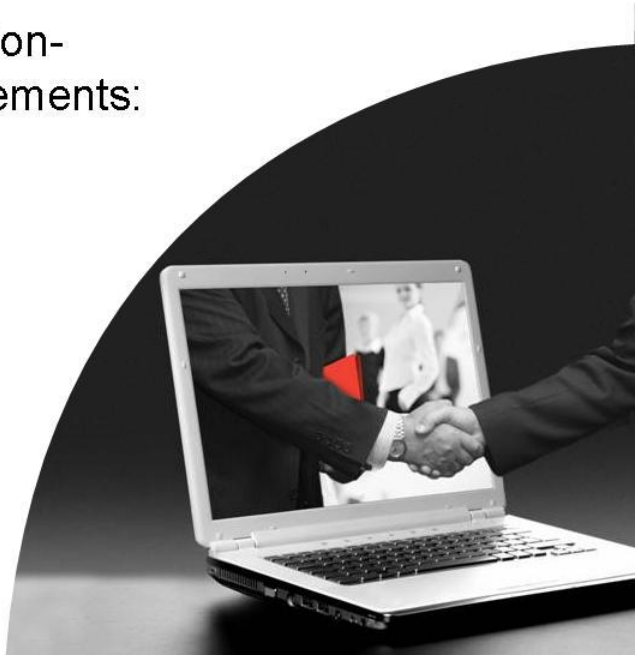
CPUC Evaluation of Non-Resource Program Elements: SEMPRA

Local Government Programs
Evaluation Contract Group



SDGE LGP Programs – Non-Resource Elements Evaluation

Program ID	Program Name	Audits	Training	Outreach	Referrals	Other
SDGE3001	California Community Colleges (CCC)		*			
SDGE3002	City of Chula Vista Partnership					
SDGE3003	CDCR					
SDGE3005	City of San Diego Partnership					
SDGE3022	County of San Diego Partnership					
SDGE3023	San Diego Co. Water Authority					
SDGE3026	UC-CSU			1		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCG LGP Programs – Non-Resource Elements Evaluation

Program ID	Program Name	Audits	Training	Outreach	Referrals	Other
SCG3516	City of Santa Monica-Sustainable Communities					
SCG3518	California Community Colleges (CCC) (see SDGE3001)		*			
SCG3519	CDCR (see SDGE3003)					
SCG3520	UC-CSU (see SDGE3026)			1		
SCG3521	Ventura County Partnership					
SCG3522	South Bay Partnership					
SCG3523	Bakersfield and Kern County Partnership					
SCG3524	Energy Coalition – PEAK					
SCG3527	Los Angeles County Partnership					
SCG3533	Alliance Partners Program					
SCG3543	Palm Desert Partnership Demonstration Project					

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

SCE2526 SCG3516
PGE2018

SDGE 3001 CCC - Overview

1. The California Community Colleges program is a state-wide program patterned after the UC/CSU/IOU Partnership program. The program offers incentives for retrofit and new construction projects, continuous commissioning, and educational training for the community colleges. The California Community College (CCC) system includes 110 campuses, each of which is responsible for its own energy use. These facilities consume vast quantities of energy and make up a significant portion of both the electric and natural gas loads in the State of California. However, unlike the UC/CSU systems in which all the campuses coordinate closely with the UCOP and Chancellor's offices, California's community colleges have full autonomy over their campuses and facilities, with little to no central coordination.
2. Statewide, the program is on track to meet its goals, which it will do by exceeding them in SCE's territory, but not in others.
3. The utilities often conduct audits on CCC campuses because there is no campus energy manager, and also provide support for completing rebate forms. The audits lead directly into resource acquisition.
4. While the incentives offered are higher in this program than in the UC/CSU program, CCCs do not have the same motivation to participate. They have over $8 billion in funding for renovation and new construction, of which the money offered by the Partnership is just a small drop.
5. The primary non-resource activities for this partnership have been minimal maintenance training conducted early on, and participation in a number of sustainability conferences. (CCCs are now referred to other IOU training programs, rather than participating in customized workshops.)

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IOU Partner Programs

SCE2526 SCG3516
PGE2018

SDGE 3001 CCC – NR Element Activities

A	Audits are to identify measures for the resource component of the program		
T	The only one training initiative is a maintenance practices course that got started but has not really been rolled out, although there does appear to be interest.	Maintenance practices ?	
O	The only outreach has been three conferences, two of which were on the topic of sustainability.	Facility Coalition Conference 1 UC/CSU/CCC Sustainability Conference 1 Ute College Sustainability Conference 1	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SDGE 3002 City of Chula Vista Partnership - Overview

The Partnership consists of five components:

- Energy Conservation and Outreach (ECO) – Provides information to residences and businesses, as well as conducting CFL and spray-valve exchanges. This component reaches out to all the South Bay cities, including Imperial Beach, Coronado, National City, and unincorporated areas of San Diego County.
- Green Urban Infill – Focuses on trying to ensure that urban infill projects are built "green," including new housing projects. Activity to date has focused on modeling energy use in planned housing developments.
- Peer-to-Peer Outreach -- Provides training and assistance to local governments and agencies in the region to implement their own programs for energy efficiency, conservation, and management
- City Facilities Energy Efficiency Program – Works to increase energy efficiency in city facilities.
- Sustainable Communities Outreach Program – Works to enhance city staff expertise in energy conservation and green building principles with the goal of infusing sustainable practice into every level of the planning and building process

SDGE 3002 City of Chula Vista Partnership – NR Element Activities

A	Some audits are conducted under the City Facilities component. They feed directly into municipal building participation in other SDG&E programs.		
T	Energy Code training Build it Green Workshops Building Operator Training/Certification – open to all partnerships, to be evaluated as a cross-cutting element. Additional future evaluation planned.	Code compliance relative to current code Code compliance relative to future code	
O	Peer-to-Peer component, including outreach to the cities of Imperial Beach, Coronado, and National City Outreach to various city departments, to establish energy efficient practices at all levels of city administration	City conferences on energy efficiency Internal outreach	
R	The City Facilities component actively refers municipal facilities into other SDG&E programs, where savings will be captured.		
X	Building codes and standards – Chula Vista passed a proposed code that will take them beyond Title 24 in April. In comment period now. If passed very soon and will impact existing construction projects, an effort will be made to quantify impacts. Otherwise, it may be of interest from a policy perspective. Green Infill	Building codes and standards Green Infill	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

PGE2019 SCG3519 SCE2527

SDGE 3003 - California Department of Corrections and Rehabilitation (CDCR) - Overview

- CDCR's Energy Management Section (EMS) is 18 years old. All EE activities for the CDCR are centralized in the EMS. This centralization is unique among the Statewide Partnerships. 33 adult, 8 youth and hundreds of parole and regional accounting offices are under the EMS's responsibility
- Prior to the CDCR Partnership, there was an Energy Bond Program which were loans of 7-12 years, paid back with the energy savings. The Energy Bond Program expired 6 years and they have struggled to find replacement funding through the capital outlay process.
- Late 2005-early 2006, the Partnership structured the RFQ for ESCOs. Those selected were qualified as of June 2006. Financing finally approved 2007 but the first round projects are not yet fully funded.
- Projects were identified by in-house staff and any ESCO who offered to perform the audit.
- While training is a planned component, and "would be nice," according to interview with the lead partner, it has not been implemented (as of Jan 11, 2008).

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IOU Partner Programs

PGE2019 SCG3519 SCE2527

SDGE 3003 - California Department of Corrections and Rehabilitation (CDCR)

A	Audits are conducted at two stages – first as a feasibility audit to attract and assign the ESCOS, and secondly by the ESCOs themselves to define the work scope. There are no non-resource elements from these audits.	Not a non-resource element.	
T	Energy Efficiency Education and Best Practices Development and Training- will provide information on best practices for energy efficiency management and conservation practice that targets not only the maintenance and operations staff but also the wardens and other end-users at each of the facilities.	None has been done to date.	
X	Related to the CDCR program is an MOU being finalized between the State of California (through the Department of General Services under PG&E 2088 that will provide the overarching framework for management and funding for all State of California/IOUs projects at State buildings. The SCE manager said that the CDCR program will in effect be an early pilot for this relationship. **This is a major policy initiative that will have far-reaching impacts on ALL state buildings. Team to examine qualitatively and gauge potential long term impact under SP study. See DGS also.**	MOU Support	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SDGE 3005 City of San Diego Partnership - Overview

The Partnership consists of four components:

- Education and Outreach – non-resource component to provide information to residences and businesses
- Business Spray Valve/CFL and Expedite Program – provides spray valves and CFLs to businesses (exchanges, not give-aways). Pilot program for developers who install energy efficiency measures to participate in the City's Sustainable Building Expedite Program.
- City of San Diego Project Facilitation – assigns a project manager to facilitate energy efficiency improvements in city facilities
- Peer-to-Peer -- provides training and assistance to local governments and agencies in the region to implement their own programs for energy efficiency, conservation, and management

SDGE 3005 City of San Diego Partnership – NR Element Activities

A	All audits are conducted in conjunction with the City of San Diego project facilitation. They lead to referrals into other programs.		
T	Included in outreach as part of Peer to Peer component		
O	Peer-to-Peer component, including outreach to the cities of Imperial Beach and Coronado Build it Green workshops (Peer-to-Peer) Outreach to various city departments, to establish energy efficient practices at all levels of city administration Project facilitation, which includes some building operator training	City conferences on energy efficiency Build It Green workshops Internal outreach Project facilitation activities	
R	The Project facilitation component actively refers municipal facilities into other SDG&E programs, where savings will be captured. The partnership has funneled buildings into EE projects with museums. Balboa Park has 25 museums, City of San Diego has helped peer to peer outreach with the museum officials.	Municipal Facilities	
X	None		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SDGE 3022 County of San Diego – Overview

1. Non-resource partnership with a large educational component.

   Peer to peer education to other local governments

   Funding allocated to develop an energy webpage to help with energy efficiency outreach

2. The program feeds facilities directly into other SDG&E resource programs.
3. Education was supposed to include facility manager training on increasing efficiency in facilities. This, as well as all education and outreach efforts, has been minimal primarily due to staff turnover at the County.
4. Any building eligible for a retrofit goes directly into one of SDG&E's resource programs.
5. SDG&E's Green Building program has offered LEED training to some of the County facility managers.
6. Program constructed one LEED certified building, and is currently planning or in the process of constructing several additional LEED certified buildings (one is a 1 Million square foot building).

SDGE 3022 County of San Diego – NR Element Activities

T	Much was planned, but little actually implemented due to staff turnover.		
O	Much was planned, but little actually implemented due to staff turnover.		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SDGE 3023 San Diego County Water Authority– Overview

1. The high-efficiency clothes washer component of the Voucher Incentive Program offers point-of-purchase vouchers to encourage consumers to purchase high-efficiency clothes washers. Water customers of participating water agencies are eligible as long as vouchers are available for those agencies. Vouchers are provided to single-family and multi-family residences.

IOU Partner Programs

PGE2036 SCG3520
SCE2530

SDGE 3026 UC/CSU - Overview

1. 23 California State University (CSU) and 10 University of California (UC) campuses statewide 2006-2008 program cycle goals are 100,000 MWh and 25 MW of electricity savings and 3,500,000 therms of natural gas savings.
2. Partnership has four main elements: retrofits, monitoring based commissioning (MBCx), education and outreach, and the Green Campuses program. Expectation was that savings would split evenly between retrofits and MBCx, but 2/3 of savings have come from retrofits.
3. Energy savings and funding are split about evenly between UC and CSU. Funding is proportional to utility service territory. Roughly 2/3 of targeted kWh savings are in PG&E territory, as are roughly half of kW and therm savings.
4. Newcomb, Anderson, McCormick (NAM) is responsible for program administration and management consulting, and maintains the program database, excluding Green Campus projects. Individual campuses contract with ESCOs, engineering firms, or do the work internally. Campus applications go to NAM, which then submits applications to the utilities.
5. The training and education portion of the programs was heavily frontloaded to help identify potential projects. Demand for training remains high. Most training (e.g. Building operation certification and MBCx training) relates directly to the program's energy savings.
6. Sustainability Conference - The programs help sponsor ($90,000 funding & organization assistance) an annual three day sustainability conference featuring speakers, exhibits, and competitions intended for staff, students, and faculty.
7. Green Campus – Currently operates on 9 campuses; run by the Alliance to Save Energy. The program hires student interns on each campus to identify and implement small energy efficiency projects on their campuses. Interns conduct audits, and work with campus faculty and administration to promote energy efficiency.

IOU Partner Programs

PGE2036 SCG3520
SCE2530

SDGE 3026 UC/CSU – NR Element Activities

A	Green Campus audits conducted by interns of campus facilities to identify behavioral change	Student audits	
T	The Commissioning and MBCx trainings are directly associated with the resource elements of the program. The program database does not clearly link the two; PA to investigate further. EE Procurement	Commissioning 5 MBCx 6 EE procurement 6	
O	Conferences include Green Campus tracks at CSU Facilities Manager Conference and the UC/CSU/CCC Sustainability Conference	Conference 2	
X	Fume Hood savings come from behavior change Curriculum Development includes student projects on campus that contribute to energy savings Data Labs – Green Campus introduced software that allows campuses to manage their networks more efficiently. Savings already being claimed under the Green Campus program.	Fume Hoods Curriculum Development ? Data Labs Software	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCG 3516 Sustainable Communities – Santa Monica - Overview

- Local program designed to promote sustainable development, showcase energy efficient design and building practices, and encourage local developers to incorporate clean on-site energy generation systems in their multifamily and commercial new construction projects.
- Based on a concept launched successfully by SDG&E in 2004-2005
- Initial discussions focused on a mixed use project at the Civic Center
- Program is moving very slowly; no implementation to date

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SCG 3516 Sustainable Communities – Santa Monica - NR Element Activities

o	No significant activity to date		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

SCE2519

SCG 3521 Ventura County Partnership - Overview

A partnership between the Ventura County Regional Energy Alliance (VCREA), SCE and SCG to create the Ventura County Energy Resource Center (VCERC) formed in 2003.

The partnership covers 10 cities, 35 school districts and more than 20 water district agencies. A Joint Powers Authority (JPA) which is composed of public agencies working in collaboration to approach the availability, reliability, conservation and innovative use of energy resources in the Ventura County region. The current JPA consists of Ventura County and the cities of San Buenaventura, Oxnard, Santa Paula and Thousand Oaks, the Ventura County Community College District, the Ventura Regional Sanitation District and the Casitas Municipal Water District.

The county has two experienced full-time contracted public employees that includes an energy management professional to provide training and technical assistance.

Key resource component - the Comprehensive Public Sector Program which provides technical and project management assistance to public facilities and 'community asset' organizations, such as schools, hospitals, museums and community centers throughout the region. A majority of direct resource acquisition is attributed to technical assistance provided by the full-time energy manager who identifies opportunities to save energy (audits), reviews bid documents and helps agencies to contract with outside contractors to implement retrofit measures.

Non-resource components include:

Training - of county staff, codes and standards
Outreach – a local clearinghouse of energy information
Referrals - where appropriate audit participants are referred into resource programs
Other – city council seminars on sustainability and efficiency, holiday lighting exchange

SCG 3521 Ventura County – NR Element Activities

A	VCREA full-time energy manager who identifies opportunities to save energy (audits). Savings is either claimed by Ventura County or are referred to other resource programs.		
T	Their training efforts are directed at public agencies, local government officials, city engineers, chambers of commerce and pre-school facilities. They believe that trainings have resulted in energy savings i.e. computer operation management, installation of LED exit signs and vending misers. (26 trainings held in 2007)	Title 24 AB32	
O	Not much effort on the residential sector.	Kiosks at public agencies Community Events 14	
R	Where appropriate the VCREA energy manager refers participants to other resource programs. These will be included in a cross-cutting referral evaluation for referrals from audits. (34 resource projects implemented)	Referrals from audits	
X	They have conducted four-hour planning sessions on climate change and energy planning policy for city council members, who have then used the training to develop energy planning goals for their cities that include targeted reductions in energy use by public facilities. (How similar are these to the Energy Action Plans discussed for San Gabrielle Valley?). The resource center is a resource for the area and they do track use of the facility, meters, meeting rooms, information materials, although they believe it is underutilized.	City Planning Goals Plan Reviews* Resource Center Users	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCG 3522 South Bay Partnership - Overview

The South Bay Partnership is run by the South Bay Cities Council of Governments (SBCCOG) through the South Bay Energy Savings Center.

The mission of the South Bay Energy $avings Center is to serve the region's constituents as the central clearinghouse for energy efficiency information and resources, and significantly increase the availability of information and resources to the people in the South Bay region to help them save energy and save money.

South Bay has no energy savings goals and no real resource component

South Bay is one of the few programs that has goals for non-resource activities (number of events):

Program Elements include:

Audits – municipal buildings – a lot of schools – referred into resource programs
Training – residential, commercial and institutional
Outreach – the program has significantly exceeded its outreach goals
Referrals – the program does refer participants into resource programs
Other - Gas Kits, CFL Giveaways, Contract Engineer, Web Site

SCG 3522 South Bay Partnership – NR Element Activities

A	Energy Efficiency Plus Project (EE+) Municipal Facilities Audits - conducted on buildings such as the Redondo Beach Unified School District Administration building, the City of Torrance fleet services garage, main fire station, and five libraries, the office of Congresswoman Jane Harman. Computer Network Energy Management Initiative Vending Miser Lighting Retrofit Initiative - referred into Express Efficiency		
T	The program believes that this is a key strategy for the South Bay Partnerships program. However, based on the information we have reviewed to date. However, the trainings are not technical, they are used to inform participants about incentive programs (referrals), with the topics tend to be general energy efficiency with many of them on renewable energy and water topics.	Public Sector 8/6 Business 12/12 Residential 29/30	
O	The program has significantly exceeded its original goals of 18 community outreach events and has conducted 4 community sweeps against its goal of 3. A number of the outreach efforts are conducted in conjunction with city council meetings of participating local governments (14 events).	Community Outreach 176/18 community sweeps 4/3	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PA Consulting Group

IOU Partner Programs
SCE2520

SCG 3522 South Bay Partnership – NR Element Activities

R	South Bay Energy Savings Center is continuing to place additional emphasis on the funneling of businesses to Southern California Edison and Southern California Gas Company account representatives through outreach programs to service organizations and chambers of commerce. In the 4th quarter 2007 they added a dedicated person to follow up with customers regarding their audits and inquire if they had made any energy or water efficiency changes. 9 clients referred in the fourth quarter of 2007.	Energy Efficiency Plus Project		
X	The program does CFL giveaways, typically associated with their training and outreach events. Participants in these events and center visitors can also sign up to receive The Gas Company Energy Efficiency Kit. A kit including a low-flow shower head and faucet aerator is then mailed to their home. Although this is a non-resource program, it has started to claim energy savings.	CFL Giveaways Gas Company Energy Efficiency Kit Contract Engineer Web Site		

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCG 3523 Bakersfield-Kern Co - Overview

1. Partnership has considerable resource component: 2006-2008 program cycle goals for SCE are – 3,508 MWh and .46 MW during summer peaking. However with incentive funding depleted by December 2007, all marketing and outreach activities were suspended pending further funding. Some restarted in May 2008.
   a. Single-Family and Multifamily Direct Install
   b. Home-Buyer Program – some minor measures distributed
   c. Small Business Direct Install Program:
   d. Municipal Facility Retrofits – "Direct Delivery" of measures
   e. CFL give-aways
2. Partnership has four NR elements: Audits, Training, Outreach, and Referrals.
   a. Audits – exist in some form (energy analysis, site audit, mail-in survey audit, technical review) for each of the resource components
   b. Trainings – Shift in approach to train contractors, designers, installers and inspectors rather than end-users.
   c. Outreach – most of the outreach for this program is marketing the resource components, especially the Single-Family and Multifamily direct install, which are targeted to specific (hard-to-reach) residents
   d. Referrals – the reports resulting from the audits refer participants to incentive programs where appropriate
   e. CFL give-aways are being captured in verification studies

IOU Partner Programs
PGE2017 SCE2521

SCG 3523 Bakersfield-Kern Co. – NR Element Activities

A	SF/MF Direct Install – no audit, free measures to "qualified" homes Home Buyer Program – energy analysis and install 25 CFLs – referred to incentive programs SB Direct Install – site audit – "qualifying" can receive free measures - referred to incentive programs Municipal Facility Retrofits – technical consultant survey major energy consuming system – refer to incentive programs	Home Buyer (see R) SB Direct Install Municipal Facility (see R)	
T	Between 2006 and 2007, 120 trades people attended various HVAC related trainings. These included 4 classes Oct-Dec 2007 put on by ETC-Stockton staff. Topics covered include - Overview of ACCA quality installation standards, equipment sizing and selection using ACCA manual J, zoning design, advanced ACCA Manual D (may be additional training coordinated through the Energy Centers) – Questions in course eval to help quantify potential energy savings – this was a pilot effort to potentially be expanded IOUs coordinate with the city/county to identify and provide education/training to city inspectors, planners, and facility managers. (In one case the city employees were paid overtime wages to attend energy efficiency training seminars on a Saturday.)	Food Service 1 HVAC 8 Solar/PV Systems 1 City Inspectors/Planners/FM ? NOTE: We are coordinating with Bill Norton of ODC to ensure we are not duplicating efforts with their Energy Center evaluation.	
O	95 CFL give away and literature distribution events through Dec 2007 at area home improvement stores, libraries, churches and other locations Bakersfield & Kern County Energy Watch "Big Top" at the 2007 Bakersfield Fall Home Show	Low volume events 95 High volume events 1	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

IOU Partner Programs

PGE2017 SCE2521

SCG 3523 Bakersfield-Kern Co. – NR Element Activities

R	The energy analyses associated with the home-buyer, small business direct install, and municipal retrofit programs all provide referrals to applicable IOU incentive programs.	Home Buyer SB Direct Install Municipal Facility

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

PA Consulting Group

IOU Partner Programs

SCE 2523

SCG 3524 Community Energy Partnership – PEAK

1. This is a schools program for 4th to 6th graders through which the Energy Coalition works with municipal school districts to introduce an energy-efficiency curriculum into the schools. PEAK Student Energy Actions program is a standards-based physical science education program for 4th-6th graders. Resources are provided as part of the program (see Outreach).
2. Under the SCE write up it says "Special program in Northern IL and the San Francisco Bay Area, involving energy audits and upgrades to school sites and the formation of student "Energy Patrols". Students are taught to do audits on their own homes. Student lists are not maintained out of principal. But schools might be willing to participate in follow up. To be discussed.
3. The foundational concept behind PEAK is that in order to truly empower students to manage energy use, they must understand the entire energy equation—from the science of how energy is created to the environmental impact of generating electricity to the energy bills of a family. Students learn to value energy and to promote sustainable energy use in their homes, schools, and in the community through the use of four PEAK Student Energy Actions:
    1. Plugging into New and Efficient Technologies.
    2. Shrinking Use through Conservation.
    3. Shifting Use Off Peak Hours.
    4. Exploring Renewable Energy.
4. The PEAK program targets energy efficiency behavior messages through curriculum development, teach the teacher training activities, energy audit skills, and various activities that qualify for science credits under the California school system. CFL distributions are also a feature of this element.

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SCG 3524 Community Energy Partnership – PEAK

5. Target participants include:

PEAK Students	36,000	(SCG says it's target is 15,000 students)
PEAK Households	27,000	
PEAK Schools	~100	
PEAK School Districts	8	

6. Children learn why energy efficiency is important, how to become efficient, technologies to consider, and hopefully tell their parents what they have learned. Engaging parents is a key goal of the program, so SCG program materials are sent home and also the energy kit with an aerator, CFL and showerhead (signed installation forms must be returned).
7. Volunteer teachers are the real champions of the program and are also expected to change their behavior and equipment. Teachers are trained in fall/winter, classes are given in spring.
8. SCG only knows the number of students taught in each school, not detailed info (e.g., student names). The program is currently on track to reach its goal of 15,000 students.
9. There is no savings goal for the non-resource element as there has been no way to confirm behavior changes.

SCG 3524 Community Energy Partnership – PEAK

A	Students are taught to do audits of their homes or of classrooms. The program also looks at school facilities through: Engineering assessments, Advisory services, School "Energy Patrols" and Green Clubs.	Clarify if energy savings are being captured. If not, then include in the overall study (see below).
T	Training events that are mostly related to training teachers involved in the PEAK program. The student training includes: Core Curriculum, Curriculum Variations, Summer PEAK program and Contests and Exchanges	Not likely to result in near term energy savings.
O	Outreach materials related to classroom activities: - Teacher Resource Guidebook including 11 hands-on lessons. - Professional development for educators. - "Tool Kit" so classroom can perform all lessons. - Support/classroom site visits by PEAK staff. - Special events such as PEAK "Kick-Off" Assemblies and contests. - Compact Fluorescent Light Bulb Fundraisers for Schools. -"Energy Challenge Software".	Implement a measurement feature to have a few schools quantify the impacts of the program from a variety of perspectives: - School building retrofits -- Student/teacher/facilities personnel behavioral changes at School --Student/household behavioral changes at home Combination of interviews, paper reviews and surveys

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCG 3527 County of Los Angeles Partnership - Overview

- Continuation of successful 2004-2005 partnership
- Focuses primarily on retrofit and retro commissioning activities in County of LA facilities
- All training is conducted in conjunction with facility retrofits and retro commissioning
- The partnership provided support for the development of LA County's February 2007 Energy Policy, which will help the county to have a more cohesive strategy to deal with energy/water efficiency and sustainable practices
- Partnership has had an impact on the County's Green purchasing strategies, and helped developed the Green purchasing guidelines passed in January 2007

SCG 3527 LA County – NR Element Activities

X	Determine what impact the Green purchase program and LA County Energy Policy have had on purchasing practices, new construction, etc.	Green Purchase Program City Planning Goals	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

SCG 3533 Alliance Partners Program - Overview

The Alliance Partners Program (California Sustainability Alliance Program), is focused on increasing energy efficiency in conjunction with sustainability initiatives such as water use efficiency, renewable energy, and waste management. The program casts a wide net, with the PIP listing a large number of program partners which include consulting firms, utility initiatives, utilities (other than the big 3), and various agencies (including SCAG, HUD). Budget is $3.2 million.

The key objectives appear to be focused on developing a body of sustainability best practices tools and techniques and developing educational and outreach materials to promote those best practices, leveraging the resources of its partners (public, private, local, state, and federal) to develop these tools and to promote their use.

The programs program indicators (metrics) were identified as:

- Number of organizations enrolled/committed and the amount of gas that they buy annually, including: Communities adopting elements of the Alliance recommended principles for planning, zoning, and development, and size of the communities
- Residential developers commitments
- Corporate and government agencies commitments to meet or exceed Energy Star, LEED requirements for all new and rehabilitation projects
- Participation rates of enrolled organizations in SoCalGas and other (e.g. LADWP, HUD, and California SGIP) programs, including: Energy savings, Other benefits e.g. water savings
- Number of participants in combined and enhanced program offerings including: Energy savings, Other benefits e.g. water savings

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SCG 3533 Alliance Partners Program – NR Element Activities

O	Their outreach efforts would not be consistent with the type of outreach included in the cross-cutting outreach evaluation.		
R	Participation of "enrolled" organizations in resource programs is a clearly identified metric, but need to better understand how this is actually working.		
X	This is not a local government partnership, but the budget is over $3 million and there are no resource goals.	Commitments of corporate and government agencies Commitments from developers Development and dissemination of Best Practice Materials	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

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SCG 3543 Palm Desert Partnership - Overview

- The Partnership has aggressive goals over its five year implementation period (2007-2011): 30% reductions in energy and demand. Its main purpose is to establish a model other communities can replicate.
- The program does not have a Program Implementation Plan; it was established by order of an Administrative Law Judge
- The program is being implemented as a partnership between SCE, SCG, Palm Desert and the Energy Coalition
- No projects or programs, only 150 measures, each of which has pre-determined savings estimates associated with it, and each of which is included in the Palm Desert E3 calculator spreadsheet
- The Palm Desert measures are divided into four categories: Residential-Products (for example, Window Film on Single Pane Clear Glass), Residential HVAC (for example, Central AC Duct Seal), Non-Residential Express, and Non-Residential Customer Unique.

SCG 3543 Palm Desert Partnership - NR Element Activities

A	In-home surveys, which feed into measure implementation		
O	Outreach events to promote partnership offerings and services	General outreach activities	

	Not Applicable		NR Evaluation Planned
	No NR Evaluation		NR Evaluation Planned – Impacts Quantified
	Under Review		No pursuit of Outreach

Overview - Program-Specific Net Energy Impacts

ID	Program	Element Type	Element	Data Status
SDGE3002	Chula Vista	Training	Code compliance relative to current code	Request pending
SDGE3026	UC/CSU	Training	Commissioning	Request pending (some data provided)
SDGE3026	UC/CSU	Training	MBCx	Request pending (some data provided)
SDGE3026	UC/CSU	Training	EE Procurement	Request pending (some data provided)
SCG3521	Ventura County	Training	Title 24	Request pending
SCG3521	Ventura County	Training	AB32	Request pending
SCG3522	South Bay	Other	Gas Kit Giveaway	Request pending
SCG3523	Bakersfield-Kern	Training	HVAC	Request pending
SCG3523	Bakersfield-Kern	Training	City inspectors/Planners/FM	Request pending
SCG3524	Energy Coalition - PEAK	Audit	Student audits	Gathering additional info

Overview - Behavior Change Potential (page 1)

ID	Program	Element Type	Element	Data Status
SDGE3001	CCC	Outreach	Facility Coalition and Sustainability Conferences	Request pending
SDGE3002	Chula Vista	Outreach	City conferences on energy efficiency	Request pending
SDGE3002	Chula Vista	Outreach	Internal outreach	Request pending
SDGE3005	City of San Diego	Outreach	City conferences on energy efficiency	Request pending
SDGE3005	City of San Diego	Outreach	Build It Green workshops	Request pending
SDGE3005	City of San Diego	Outreach	Internal outreach	Request pending
SDGE3005	City of San Diego	Outreach	Project facilitation activities	Request pending
SDGE3026	UC/CSU	Outreach	Facility Coalition and Sustainability Conferences	Request pending
SCG3521	Ventura County	Outreach	Info tables at community events	Request pending
SCG3522	South Bay	Outreach	Info tables at community events	Data provided

Overview - Behavior Change Potential (page 2)

ID	Program	Element Type	Element	Data Status
SCG3522	South Bay	Outreach	Community sweeps	Request pending
SCG3524	Energy Coalition - PEAK	Outreach	? "Implement a measurement feature to have a few schools quantify the impacts of the program from a variety of perspectives" ???	???

Overview - Crosscutting Referral Mechanisms

ID	Program	Element Type	Element	Data Status
SDGE3005	City of San Diego	Referral	Municipal Facilities	Request pending
SCG3521	Ventura County	Referral	Audits conducted by full-time energy manager	Request pending
SCG3522	South Bay	Referral	Energy Efficiency Plus Project	Request pending
SCG3523	Bakersfield-Kern	Referral	Home Buyer Program	Request pending
SCG3523	Bakersfield-Kern	Referral	Municipal Facility Retrofit	Request pending
SCG3533	Alliance Partners	Referral	Participation of "enrolled" organizations in resource programs	Gathering additional info

APPENDIX H: REVIEW OF IOU DATA FOR LGP PROGRAMS

MEMO - Review of IOU Data for LGP Programs

STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

Memorandum

To:

From: Jean Lamming
CC: Tim Drew, Zenaida Conway, Nick Hall
Date: January 28, 2008
RE: Review of Data Provided October 31, 2007 for Local Government Partnership (LGP) Programs in Response to the CPUC Master Data Request

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This memo describes the data provided by PG&E, SCE, and Sempra (SCG and SDG&E) in response to the CPUC master data request, and provides a rating on the content and quality of data received for resource and non-resource activities. The data related to resource and non-resource activities are discussed separately.

Resource Activities

The resource measure-level data provided by the utilities is described and summarized below.

PG&E

PG&E provided one database, titled "EMV_18months.mdb" (a Microsoft Access database). 16 of the 21 LGP programs are represented. Each measure is identified as one of 105 measure types.

Table 5 summarizes the resource acquisition data from this database and compares it to data reported in the 2nd quarter 2007 E3 Calculator files. Note that savings values in the database are *assumed* to be gross savings but this is not specified in the database. The net-to-gross ratio assumed by PG&E is provided in the database and used to compute net savings for the purposes of this table. For twelve of the 13 programs reporting kWh savings, the database and E3 reported savings were within 10% of one another. This was also true for all four of the projects reporting therm savings, with three of the four reporting exactly the same savings. However, only two of the 12 programs reported kW savings in the database and E3 reports within 10% of one another.

Sempra

Sempra provided one database, titled "EM&V Report Database through 06-07" (a Microsoft Access database). All SCG and SDG&E Government Partnership programs are listed in the database except for SCG3543 - Palm Desert Partnership. However, measures are only present for

two programs: SDGE3001 – Community College Partnership and SCG3001 – Community College Partnership. It is unclear at this time if the lack of reporting reflects no activity in the programs, or if activity is occurring but being reported in a timely fashion.

Table 6 summarizes the resource acquisition data provided by SEMPRA for the two LGP programs represented in the database. For one of the two programs (SCG 3518) no E3 Calculator file was available to compare database values to. For the other LGP program represented in the database (SDGE 3001), the savings in the database do not correspond well with the savings reported in the E3 Calculator file.

SCE

SCE provided individual spreadsheets (in Microsoft Excel) for each program. The fields and layout of each file are different. Table 7 summarizes resource acquisition data from the SCE spreadsheets. For five of the six LGP programs represented, the kWh savings reported in the data request spreadsheet and the E3 Calculator files were within 10% of one another. None of the kW savings reported in the two sources were within 10% of one another. As with Sempra, it is unclear at this time if the lack of reporting on SCE LGP programs reflects no activity, or if activity is occurring but being reported in a timely fashion.

Rating

A rating system was devised to categorize the quality of data for each program, as compared to data reported in the E3 calculator files for June 2007. Table 1 describes this rating system. Table 2 counts the number of programs with each rating for each utility, excluding the seven entirely non-resource programs. In general, the evaluation of resource activity cannot proceed on programs that receive a rating of 0 or 1. Tables 3, 4, and 5 provide a comparison by IOU of the net annual savings from the October 31, 2007 data request and the net annual savings reported in the E3 calculators for the same period.

Table H-1. Database Program Measure Rating Descriptions for Resource Activities

0	no data present, no savings reported in E3
1	no data present, savings reported in E3
2	data present, corresponds poorly with E3 data
3	data present, corresponds moderately with E3 data
4	data present, corresponds well with E3 data

Table H-2. Resource Rating Summary

Utility	0	1	2	3	4	*Total*
PG&E	2	3	5	6	5	***21***
Sempra	12	1	0	1	0	***14***
SCE	8	0	3	2	1	***14***
Total	***22***	***4***	***8***	***9***	***6***	***49***

Non-Resource Activities

This section discusses the data/information on non-resource activities provided in response to the data request for each utility. In general, there was little or no data on non-resource activities provided for two-thirds of the government partnership programs. Only one program appears to have provided relatively complete information in a format that can easily be used for evaluation purposes (although it is not clear that this information is complete). Four programs provided reasonably complete information, but information on participants is not in an easily usable format, or is not complete.

PG&E

PG&E sent eleven disks. Each partnership program has its own folder on the fourth disk. The folders contain a spreadsheet structured to summarize the E&T and M&O activities and a sub-folder containing backup documents e.g. promotional materials, sign-in sheets and surveys. The spreadsheets generally have at least something in them, however, it often does not follow the requested structure and is often not complete e.g. for ABAG instead of filling out the summary information in the spreadsheet, they simply reference the related documents in the sub-folder. A summary of the data provided by PG&E for non-resource activities is presented in Table 8.

SEMPRA

Sempra only sent one DVD. It contains a single database capturing information on resource activities. There is no information on the DVD or in the database regarding non-resource activities.

SCE

SCE sent seven disks, three were organized by program, and two contained information on the Flex Your Power program/campaign. All data that could be directly related to the Government Partnership programs appear to be on Disk 3, within the specific program folder. The completeness and quality of the data provided varies significantly by program. For six of SCE's 17 programs, no data was provided. A summary of the data provided by SCE for non-resource activities is presented in Table 9.

Rating

A rating system was devised to categorize the adequacy of the data for conducting the evaluation of non-resource activities. The scores and their meaning are presented in Table 3. Table 4 provides a count of the number of programs with each rating for each utility. In general, the evaluation of non-resource activity cannot proceed on programs that receive a rating of 3 or less. No data on non-resource activity was provided on Sempra programs and therefore all SDG&E and SCG programs received a 0 rating.

Table H-3. Database Program Measure Rating Descriptions for Non-resource Activities

0	no data provided, and no directory for it on the DVD's
1	a directory exists on the DVD's, but little or no data provided
2	Some data indicating activity, but little no information on the activity
3	Some data provided, but it is not clear how complete it is
4	Data provided appears to be reasonably complete or at lest is being maintained adequately, but is not provided in a form that can easily be used for evaluation purposes
5	Data is complete and in a usable format

Table H-4. Non-resource Rating Summary

Utility	***0***	***1***	***2***	***3***	***4***	***5***	***Total***
PG&E	1	5	8	5	1	1	***21***
Sempra	18	0	0	0	0	0	***18***
SCE	6	6	3	0	2	0	***17***
Total	***25***	***11***	***9***	***5***	***4***	***1***	***56***

Table H-5. Summary of PG&E Measure Reporting

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
PGE											
PGE2015	Association of Bay Area Governments (ABAG) Energy Watch	X	3	3	3	13	162,837	0	13	162,837	0
PGE2016	Association of Monterey Bay Area Governments (AMBAG) energy Watch	X	3	12,901	198	1,874	13,208,934	0	1,872	12,186,494	0
PGE2017	Bakersfield and Kern County Energy Watch	X	3	1,940	82	649	5,090,908	0	687	5,102,234	0
PGE2018	California Community Colleges/IOU Energy Efficiency Partnership	X	2	15	8	147	702,202	74,109	147	702,202	74,109

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
PGE2019	California Department of Corrections and Rehabilitations/IOU Energy Partnership		1	-	-	-	-	-	0	0	0
PGE2020	East Bay Energy Watch (EBEW)	X	2	3,708	22	1,681	8,361,938	16,415	1783	8,991,299	16,828
PGE2021	Fresno Energy Watch (FEW)	X	2	2,128	69	851	5,205,392	0	843	5,109,978	0
PGE2023	Local Government Energy Action Resources (LGEAR) (5)		1	-	-	-	-	-	0	0	0
PGE2024	Madera Energy Watch	X	4	332	30	155	606,079	0	153	595,280	0
PGE2025	Marin County Energy Watch	X	4	1,430	20	233	906,870	0	233	878,296	0

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
PGE2026	Merced/Atwater Energy Watch	X	4	194	27	85	403,626	0	84	399,981	0
PGE2027	Motherlode Energy Watch	X	3	772	67	330	2,642,798	0	323	2,587,272	0
PGE2028	Redwood Coast Energy Watch	X	3	1,643	25	101	638,424	0	100	624,718	0
PGE2029	San Francisco Energy Watch (SFEW)	X	4	43	3	122	551,119	0	122	551,119	0
PGE2030	South San Joaquin (SSJ) Energy Watch	X	3	1,002	94	522	3,940,159	-2	511	3,856,155	-2
PGE2031	Santa Barbara County Energy Watch		1	-	-	-	-	-	0	0	0
PGE2032	Sonoma County Energy Watch								249	788,689	146

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
PGE2033	Stockton Energy Watch	X	4	1,112	40	360	2,119,074	0	359	2,087,663	0
PGE2034	Silicon Valley Energy Watch (SVEW)		0	-	-	-	-	-	0	0	0
PGE2035	Silicon Valley Leadership Group Energy Watch	X	2	1	1	65	434,837	0	103	762,789	0
PGE2036	UC/CSU/IOU Energy Efficiency Partnership	X	2	4	4	14	336,703	6,000	14	336,703	6,000
PGE2088	Dept. of Genl Services, State-leased facilities		0	-	-	-	-	-	no E3 posted	no E3 posted	no E3 posted
	PGE TOTAL	***16***		***27,228***	***693***	***7,202***	***45,311,897***	***96,521***	***7,596***	***45,723,707***	***97,080***

Table H-6. Summary of Sempra Measure Reporting

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	therms
SEMPRA											
SCG3516	SCD4-Sustainable Communities Demo/City of Santa Monica	X	0	0		0	0	0	0	0	0
SCG3518	CCP4-IOU/Community College Partnership	X	0	3	1	0	0	25,630	0	0	0
SCG3519	CDC4-CA Department of Corrections Partnership	X	0	0		0	0	0	0	0	0
SCG3520	UCP4-IOU/UC/CSU Partnership	X	0	0		0	0	0	0	0	0
SCG3524	EC5-Energy Coalition - Peak	X	0	0		0	0	0	0	0	0
SCG3527	LAP4-Los Angeles County partnership	X	0	0		0	0	0	0	0	0
SCG3533	3P Alliance Partners Program	X	0	0		0	0	0	0	0	0

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	therms
SCG3543	Palm Desert Partnership Demonstration Project, Also SCE2566	0	0	0		0	0	0	no E3 posted	no E3 posted	no E3 posted
SDGE3001	CCP-IOU/Community College Partnership	X	2	6	1	88	381,282	5,730	121	556,170	40,466
SDGE3002	CCV-City of Chula Vista Partnership	X	0	0		0	0	0	0	0	0
SDGE3003	CDC-CA Department of Corrections Partnership	X	0	0		0	0	0	0	0	0
SDGE3005	CSD-City of San Diego Partnership	X	0	0		0	0	0	0	0	0
SDGE3023	SDW-San Diego Co. Water Authority Partnership	X	1	0		0	0	0	0	0	30,844
SDGE3026	UCP-IOU/UC/CSU Partnership	X	0	0		0	0	0	0	0	0
	SEMPRA TOTAL	***17***		***9***	***2***	***88***	***381,282***	***31,360***	***121***	***556,170***	***71,311***

Table H-7. Summary of SCE Measure Reporting

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
SCE											
SCE2518	Local Government Energy Action Resources		0	0	0	0	0		0	0	0
SCE2519	Ventura County Partnership	X	4	29	22	545	2,928,066		635	2,928,066	0
SCE2521	Bakersfield and Kern County Partnership	X	2	55	4	109	395,248		92	424,828	0
SCE2524	Community Energy Partnership (Resource)		0	0	0	0	0		0	0	0
SCE2525	San Gabriel Valley EE Partnership Program		0	0	0	0	0		0	0	0
SCE2526	California Community Colleges	X	2	11	6	235	2,548,278		553	2,548,278	0
SCE2527	California Department of Corrections and Rehabilitation		0	0	0	0	0		0	0	0
SCE2528	SCE-SCG County of Los Angeles	X	3	4	3	61	955,357		207	955,358	0

Program Number	Program Name	Listed in Data Base	Ranking	Number of Measures	Number of Unique Applications	NET ANNUAL SAVINGS FROM DATA REQUEST			NET ANNUAL SAVINGS REPORTED IN E3 CALCULATOR FILES, 2ND QUARTER 2007		
						kW	kWh	therms	kW	kWh	Therms
	Partnership										
SCE2529	County of Riverside Partnership		0	0	0	0	0		0	0	0
SCE2530	UC-CSU-PG&E-SCE-SCG-SDG&E Partnership	X	3	3	2	191	532,143		107	493,789	0
SCE2566	Palm Desert Partnership 4	X	2	397	188	156	218,092		25	116,489	0
SCE2567	Mammoth Lakes Partnership 2		0	0	0	0	0		8	35,766	0
SCE2568	Ridgecrest Partnership 2		0	0	0	0	0		5	23,355	0
SCE2569	Department of General Services Partnership 3 Also, PGE2088.		0	0	0	0	0		0	0	0
	SCE TOTAL	***7***		***499***	***225***	***1,297***	***7,577,184***	***0***	***1,723***	***7,941,215***	***0***

Table H-8. Data Status for PG&E Government Partnership Programs Non-Resource Elements

Program ID	Program	Rating	Notes	Implications for evaluation
PGE2015	PGE ABAG	5	Two training events, with agendas, and lists of participants in MS Excel format. This is what is needed, if this is truly the only non-resource activities for this program.	Data is adequate for evaluation. Need to update for subsequent activities.
PGE2016	PGE AMBAG	3	Lists 6 training events, but provides no information on participants	Unable to proceed with evaluation because of lack participant data from which a sample can be defined.
PGE2017	PGE Bakersfield	3	Lists a number of education and outreach activities, but provides no reference documentation or sign-in sheets.	Unable to proceed with evaluation because of lack participant data from which a sample can be defined.
PGE2018	PGE CCC-IOU	1	Provides an extensive list of conferences and meetings with no reference documentation. This may be appropriate for this program. A closer review of the program strategy will be required to determine that. It is not clear whether there are non-resource activities for which tracking information would be necessary.	Unable to proceed with evaluation because of lack participant data from which a sample can be defined.
PGE2019	PGE CDCR	1	A word document stating: "No data is available for this program."	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2020	PGE East Bay	2	Provides links to a "Sustainability Pledge" form related to the Climate Protection/Business Outreach Campaign, but no information on who has signed one to date, and a link to a brochure related to their "Green Hospitality Outreach", but no information on how that has been used or who might have received it.	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2021	PGE Fresno	2	Indicates over 50 classes have been held, but no course materials, agendas, or lists of attendees (exactly the same list for PGE Fresno, Madera, Merced)	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2023	PGE LGEAR	1	A word document stating: "No data is available for this	Unable to proceed with evaluation without

Program ID	Program	Rating	Notes	Implications for evaluation
			program."	information on non-resource activities and lists of participants (preferably in spreadsheet format)
PGE2024	PGE Madera	2	Indicates over 50 classes have been held, but no course materials, agendas, or lists of attendees (exactly the same list for PGE Fresno, Madera, Merced)	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2025	PGE Marin	3	Lists a number of activities, but reference documentation is not provided for much of it	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2026	PGE Merced	2	Indicates over 50 classes have been held, but no course materials, agendas, or lists of attendees (exactly the same list for PGE Fresno, Madera, Merced, Stockton)	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2027	PGE Motherlode	2	Indicates that the list of E&T events is "To be provided by Stockton/PEC ". Provides pdf files of marketing collateral including announcements for at least one seminar and one training, but no information on participation or collateral.	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2028	PGE Redwood	3	Good list of activities and extensive collateral provided, but it does not appear there is any information on participants.	Unable to proceed with evaluation because of lack participant data from which a sample can be defined.
PGE2029	PGE San Francisco	3	List of training participants for 3 trainings. Counts of participants for outreach event, but no lists of those participants.	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2030	PGE San Joaquin	2	Indicates that the list of E&T events is "Provided by Stockton/PEC Education Training Center". No info on collateral provided at outreach events.	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2031	PGE Santa Barbara	1	A word document stating: "No data is available for this	Unable to proceed with evaluation without

Program ID	Program	Rating	Notes	Implications for evaluation
			program."	information on non-resource activities and lists of participants (preferably in spreadsheet format)
PGE2033	PGE Stockton	2	Indicates over 50 classes have been held, but no course materials, agendas, or lists of attendees (exactly the same list for PGE Fresno, Madera, Merced, Stockton)	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2034	PGE SVEP	1	Indicates there are no E&T events, but the M&O tab lists two training events. No info on courses provided. Indicates there are attached pdf files, but they are not on the DVD.	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
PGE2035	PGE SVLG	4	Provides lists of courses and outreach lists of participants (without contact info)	Need to determine whether participant contact information is available?
PGE2036	PGE UC-CSU	2	Extensive list of activities, but no collateral or participant information	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format).
PGE2088	DGS, State-leased facilities	0	No data provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)

Table H-9. Data Status for SCE Government Partnership Programs Non-Resource Elements

Program ID	Program	Rating	Notes	Implications for evaluation
SCE2518	Local Government Energy Action Resources	0	No data provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2519	Ventura County Partnership	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2520	South Bay Partnership	4	Data provided as a PDF in the form of a monthly report documenting all activities, including sign-in sheets for community events and summary sheets for each event identifying the topic, the location, the number of participants and lists of materials distributed. Data only provided through March 2007. It will be time-consuming to convert the PDF sign-in sheets to something usable for sampling. It will also be onerous to create a list of activities and from the summary sheets provided for each event.	Evaluation resources will be required to convert the activity information and participant lists into a usable format. Need to determine if the information is already available in a usable format before expending those resources.
SCE2521	Bakersfield and Kern County Partnership	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2522	Santa Barbara Partnership	2	Six files provided. Two providing information on CFL's distributed, one providing information on Christmas tree light exchange participants, and data from sign-in sheet for an Earth Day Event. In a recent interview with the program manager, he agreed to provide a list of contacts and events, and provided a	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)

Program ID	Program	Rating	Notes	Implications for evaluation
			contact name for the person to clarify the CFL data	
SCE2523	Community Energy Partnership (Non-Resource)	2	Appears to be bullet points pulled from 2cd quarter, quarterly report, and put into a spreadsheet. E.g., Teacher Orientation & Training Events Need specific information, in a user-friendly structure, e.g. for the teacher orientation and training events we need information on specific events, including dates, times, places, lists of attendees, etc. (And this is just one bullet)	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2524	Community Energy Partnership (Resource)	0	No Data Provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2525	San Gabriel Valley EE Partnership Program	0	No Data Provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2526	California Community Colleges	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2527	California Department of Corrections and Rehabilitation	0	No Data Provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2528	SCE-SCG County of Los Angeles Partnership	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2529	County of Riverside	0	No Data Provided	Unable to proceed with evaluation without information on non-resource activities and

Program ID	Program	Rating	Notes	Implications for evaluation
	Partnership			lists of participants (preferably in spreadsheet format)
SCE2530	UC-CSU-PG&E-SCE-SCG-SDG&E Partnership	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2566	Palm Desert Partnership	1	No data provided on non-resource activities	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)
SCE2567	Mammoth Lakes Partnership	2	Some information provided, including event information sheets and scanned sign-in sheets. It is difficult to determine how complete the information is without a comprehensive list of activities. Information in scanned documents will require conversion to a data friendly format	Evaluation resources will be required to convert the activity information and participant lists into a usable format. Need to determine if the information is already available in a usable format before expending those resources.
SCE2568	Ridgecrest Partnership	4	Some information provided, including event information sheets and scanned sign-in sheets. It is difficult to determine how complete the information is without a comprehensive list of activities. Information in scanned documents will require conversion to a data friendly format	Evaluation resources will be required to convert the activity information and participant lists into a usable format. Need to determine if the information is already available in a usable format before expending those resources.
SCE2569	State of California/IOU Partnership	0	No Data Provided	Unable to proceed with evaluation without information on non-resource activities and lists of participants (preferably in spreadsheet format)

APPENDIX I: DATA REQUEST TEMPLATE

To: [PROGRAM ID & NAME]
From: Bryan Ward of PA Consulting Group of the Summit Blue Team, on behalf of Jean Lamming of the California Public Utilities Commission
Date:
Subject: Data Request

In effort to complete our evaluation of non-resource program elements for CPUC, we would like to request data related to this program that is pertinent to our evaluation process.

Spreadsheet or database formats are preferred to scanned documents or hardcopy documents whenever possible, for lists of participants of lists of activities. For collateral, scanned documents are preferred, but hardcopy documents are acceptable.

Table 1 below identifies the program non-resource elements that are being targeted for evaluation, indicates whether any data has been provided previously, and gives a general statement regarding the data being requested related to that program element. For each element type, a table is provided below that provides more detail on the type of data being requested for that element type.

We appreciate your cooperation with us in this process. We anticipate that it may be necessary for subsequent data requests, but we assure you that, in consideration of your time, we will strive to keep these requests to a minimum.

If you have any questions, feel free to contact me at: (608) 443-2700 or e-mail me at bryan.ward@paconsulting.com.

Table I-1. Program Elements Targeted for Non-resource Evaluation

Element Type	Description	Collateral Received	Participant Data Received	Data Requested
Audit				
Training				
Referrals				

AUDIT

There are many variations of "audits" being utilized in program designs. These include "walk-through" audits, tune-up audits, energy assessments, and can also be part of a direct-install program.

Table A1 Data Requested about the Audit

Data Requested	Details
Description of Audit	Provide a brief description of the audit process.
Audit Collateral	Please include copies/information about supplemental materials pertaining to the event (e.g., brochures, audit forms, training materials, examples of materials left with participants at the end of the audit).
Notes	Please include any notes that are pertinent to the audit, but have not been covered by the above requests.

Table A2. Data Requested on Audit Participants

Data Requested	Details
Audit title	Please include the name of the audit.
Date of audit	Include the date of the audit.
Contact name	Include the name of person/contact at the organization receiving the audit.
Organization name	The name of the organization receiving the audit (where relevant).
Address	Contact's address.
Phone number	Contact's phone number (include fax number if possible).
Audit location	Provide the location of the audit (service address).
Measures installed	Provide specify any measures installed at the time the audit was conducted.
Measures recommended	Identify any measures recommended, but not installed.

TRAINING

Table T1. Data Requested about the Training

Data Requested	Details
Title of training course(s)	Ideally a name recognizable by the participants.
Training course objectives/topics covered	Include a brief description of the training course.
Sector targeted by event	This is the participant type. Please indicate whether participants are from residential, commercial, or institutional (government, schools, organizations, etc) sectors.
Description of target training participants	Who is recruited to attend the trainings? And who has been attending the trainings? For example, building inspectors, home builders, local government officials, HVAC contractors.
Event coordinator(s)	Include the name of the person/agency that has primary responsibility for the event.
Collateral	Please include copies/information about supplemental materials pertaining to the event (e.g., brochures, training materials, presentations).
Notes	Please include any notes that are pertinent to the event, but have not been covered by the above requests.

Table T2. Data Requested on Training Participants

Data Requested	Details
Title of event	Ideally a name recognizable by the participants.
Training date(s)	Date(s) the participant attended training.
Training location	The name and address of the location where the training was held.
Participant name	Participant name.
Participant title	Participant title.
Participant organization	Participant organization.
Participant Address	Participant address.
Participant phone number	Participant phone number.

REFERRAL

These are referrals to other resource programs. These may be referrals that are made as part of an audit or in response to an inquiry from a homeowner, business owner, or local government official about opportunities for rebates for installation of energy efficient equipment.

Table R1. Data Requested about the Referral Mechanism

Data Requested	Details
Referral mechanism	Please give a general description of how customers were referred to an incentive/rebate program outside of this program.
Program(s) referred to	The title of the rebate/incentive programs to which participants are referred.
Referral tracking system	Please describe how referrals to rebate/incentive programs are tracked.
Notes	Please include any notes that are pertinent to the event, but have not been covered by the above requests.

Table R2. Data Requested on the Referral Participants

Data Requested	Details
Program(s) referral to	The title of the rebate/incentive programs to which the participant was referred.
Measure(s)	The energy efficient equipment eligible for an incentive or rebate.
Referral date	Date of the referral was made.
Referral mechanism	Please give a description of how specific customers were referred to a resource program outside of this program. If this is the same for all participants, do not detail here.
Participant contact name	Name of the person referred.
Participant organization	Name of the company referred (if applicable).
Participant address	Participant address.
Participant phone number	Participant phone number (include fax number if possible).

APPENDIX J: SURVEY INSTRUMENT APPENDICES

Association of Bay Area Governments (ABAG) Audited Local Government Participant Interview Guide

Interview Objectives:

- Characterize interviewees' level of participation with the program
- Identify the level of audit and information the facility/facilities received (NOTE: Database has some of this information, but want to confirm)
- Energy Assessment Report, detailing energy costs and benchmarking facilities against each other
- Energy Action Plan, developed after the walk-through audit and discussions with facility staff regarding prioritizations of facilities
- Energy Audit Report, a result of an investment-grade audit
- Discuss what information was provided in the reports, comprehensiveness of the audits and reports, recommendations made, and the sufficiency of the information provided by the program
- Investigate what actions the city/town/county took as a result of the audit information
- Investigate the process for seeking government decision-maker commitment/buy-in and the level commitment/buy-in
- Identify program's role in the decision to adopt energy efficiency projects, and any additional energy-efficiency activities taken as a result of information
- Discuss the barriers for implementing recommended measures (e.g., financial, timing, other capital investments)
- Identify the role loan options have in improving facilities' ability to move projects forward

I. Introduction

[NOTE: A SENIOR PA STAFF MEMBER WILL IDENTIFY THE APPROPRIATE INDIVIDUAL TO CONTACT PER THE SAMPE FILE PROVIDED BY ANN GUY OF ENERGY SOLUTIONS. WE MAY NEED TO SPEAK WITH MULTIPLE INDIVIDUALS FOR EACH MUNICIPALITY]

We are working with the California Public Utilities Commission to review local government and institutional partnership programs offered in the State of California. One program they are particularly interested in reviewing is the Association of Bay Area Governments Energy Watch program, also known as ABAG.

Our records indicate that the ***[CITY/TOWN/COUNTY NAME]*** participated in this program in ***[DATE DELIVERED FROM DATABASE]***. Are you the right person to speak with regarding the ***[CITY/TOWN/COUNTY NAME]***'s participation in this program?

[ATTEMPT TO FIND CORRECT CONTACT IF INCORRECT].

The objective of this interview is to understand your experiences with the program. The information you provide to us will remain confidential.

[REQUEST PERMISSION TO TAPE INTERVIEW] Would it be okay to tape record this interview? We tape interviews so that we can concentrate on the interview rather than taking notes. The tape will be destroyed after it is transcribed.

II. Respondent Background Information

1. What is your current title?

2. What is your role with the **[*CITY/TOWN/COUNTY NAME]*** ? Could you briefly explain your responsibilities?

3. How long have you been in your current position?

III. General Experience with ABAG Energy Watch

First, I have a few questions about your participation in the ABAG Energy Watch Program.

[THESE ARE PRIMARILY WARM-UP QUESTIONS, BUT ASLO SET THE STAGE FOR WHICH SERIES OF QUESTIONS ARE ASKED WITHIN THE INTERVIEW]

1. When did your ***[CITY/TOWN/COUNTY]*** become involved with ABAG?

2. How did you hear about the program? (Visit from program representative, utility representative, printed materials, conferences, etc.)

3. Please tell me about your participation in the program, including who in the community was involved and their roles (e.g., public works director, chief financial officer)

4. What information did you receive through the program? (Probe for Energy Audit Report, Energy Action Plan)

5. **[IF ENERGY ASSESSMENT REPORT NOT MENTIONED]** Did you receive an Energy Assessment Report? This report provided an energy analysis of your facilities, including the energy cost of each facility, energy cost per square foot, and electricity use.

6. **[IF ENERGY ACTION PLAN NOT MENTIONED]** Did you receive an Energy Action Plan? This plan provided preliminary recommendations for energy-efficiency projects. The recommendations were based on the Energy Assessment Report, facility information provided by ***[CITY/TOWN/COUNTY]*** staff, and possibly a meeting with you. The Energy Action Plan provided general recommendations about retrofit, design, and retro commissioning opportunities for further exploration.

7. **[IF ENERGY AUDIT REPORT NOT MENTIONED]** Did you receive an Energy Audit Report? Energy Solutions would have provided this in-depth report, possibly after completing an investment-grade audit of your facilities. The report may would have focused on a variety of energy-efficiency projects, including HVAC, lighting, and retro commissioning opportunities to save energy.

8. How was that information delivered to you? (Ask for each component received through the program)

9. Please describe the commitment asked of (e.g., letter of commitment, governing board action) from your community to participate in the program?

10. Please describe the commitment offered to your community from the program?

IV. Project Budgeting and Decision-making

1. Please describe your community's capital budgeting and approval process.

2. How and when are energy retrofit projects considered?

3. What projects require pre-approval? What size and type?

4. How do energy efficiency projects connect to your capital budgeting process? If they are not connected, why not?

5. In the future, do you see this process changing?

V. Energy Assessment Report

[Ask this series if respondent recalled receive an energy assessment report.]

1. What information was provided in the Energy Assessment Report?

2. What did you learn from the report?

3. How did you use the information provided in the Energy Assessment Report?

4. Did this report prompt you to make any changes in any of your facilities? (IF YES) What changes did you make?

5. Did the ABAG Energy Watch representative discuss the Energy Assessment Report with you? What specifically did you discuss related to the report?

6. Did you share the information presented in the Energy Assessment Report with other staff, particularly management? What was their reaction to the information?

7. Did you find the information in this report useful? How could the report have been made to be more useful?

VI. Energy Action Plan

[Ask this series if respondent recalled receive an energy action plan]

1. What information was provided in the Energy Action Plan?

2. What recommendations did the plan make for your facilities?

3. Did you find the recommendations useful and/or realistic?

4. Did you pursue any recommendations made in the report?

[ASK THE FOLLOWING QUESTIONS IF SAID THEY PURSUED SOME RECOMMENDATIONS]

1. What recommendations did you follow through with?

2. What did you do?

3. Which recommendations didn't you follow through with? Why did you select the **[RECOMMENDATIONS IDENTIFIED IN POINT A]** to pursue and not these recommendations? Could you describe the decision process?

[ASK THE FOLLOWING QUESTIONS IF SAID THEY DID NOT PURSUE ANY OF THE RECOMMENDATIONS MADE IN THE REPORT]

1. Why didn't you follow through with any of the recommendations made in the report? (Probe for financial constraints, opinion of the recommendations, and lack of management buy-in.)

2. What could the program have done to assist you further in considering the recommendations presented?

3. Beyond the recommendations presented, did this plan prompt you to make any changes in any of your facilities? (IF YES) What changes did you make?

4. Did the ABAG Energy Watch representative discuss the Energy Action Plan with you? What specifically did you discuss related to the plan?

5. What ***[CITY/TOWN/COUNTY]*** staff were involved in this part of the process**? [IF MANAGEMENT NOT MENTIONED]** Did you share the information presented in the Energy Action Plan with other staff, particularly management? What was their reaction to the information?

6. Did you find the information in this plan useful? How could the report have been made to be more useful?

VII. Audit Report

Ask this series if respondent recalled receiving an audit report.

1. Could you please explain the process the program took to provide the audit report? Did the program provide an investment-grade audit?

2. What ***[CITY/TOWN/COUNTY]*** staff were involved in this part of the process? Was this different than the levels of staff involved in other parts of the process? (NOTE: These questions are trying to assess the level of buy-in needed at this point, and how that differs by level of participation.)

3. What energy audit reports did you receive? (Probe for lighting retrofit recommendations, HVAC Report, Retro Commissioning Investigative Report, and anything else).

4. Did you end up following through with any of the recommendations made in the report? **[IF YES, ASK THE FOLLOWING QUESTIONS]**

5. What did you do?

6. Why did you decide to pursue those projects?

7. What process was followed to approve or reject the project?

8. Did you receive a financial incentive through PG&E or ABAG Energy Watch to install this equipment? (IF YES) Who provided the incentive (PG&E or ABAG EW)?

9. Do you recall how much you received? Do you recall what percentage of total project costs this covered?

10. Were there any recommendations in the audit report(s) you did not undertake? **[IF YES, ASK THE FOLLOWING QUESTIONS]**

11. What were the recommendations you didn't pursue?

12. Why didn't you adopt those recommendations? (Probe for financial constraints, opinion of the recommendations, and lack of management buy-in.)

13. **[IF ADOPTED OTHER RECOMMENDATIONS]** How did you decide to implement other projects and not this/these? What was the decision-making process?

14. What could the program have done to assist you further in considering the recommendations presented? (Probe for more information, more financial assistance, and loan opportunities.)

IIX. Program Influence

Ask this series of questions of respondent said they followed through recommendations or purchased equipment through the program.

Throughout this interview you said you installed ***[REITERATE EQUIPMENT DISCUSSED]***…

1. On a scale of 0 to 10, where 0 is not at all influential and 10 is extremely influential, how influential was the program in encouraging your adoption of these energy-efficiency projects?

2. I'd like to understand how each program component played a role in your decision to implement the energy-efficiency projects that you did. For each component, could you please rate the influence on a 0 to 10 scale, where 0 is not at all influential and 10 is extremely influential. **[ASK EACH ITEM RESPONDENT SAID RECEIVED]**

3. How influential was the information provided in the Energy Assessment Report?

4. How influential was the information provided in the Energy Action Plan?

5. How influential was the information provided in the audit report?

6. How influential was the financial incentive provided to you?

7. How influential was the information provided by the ABAG program representative?

8. How influential was ***[ANY OTHER ITEM DISCUSSED IN INTERVIEW]***

9. Had the program not provided the information or services it did, would you have pursued these opportunities? (IF YES) When do you think you would have pursued them? (CAPTURE INFORMATION BY TECHNOLOGY IF PROVIDED).

10. Do you feel the full program package was important to helping you move forward with these projects, or were there specific elements that you thought were particularly effective? Please explain.

11. Are there other opportunities the program did not identify that you felt were missed? What opportunities are those?

12. How did the program assist you with evaluating all of the information and supporting your decision to pursue or not pursue projects (e.g., presentations to management, ideas on financing, such as working with ESCOs)?

IX. Perception of Energy Efficiency

Local governments have a lot of pressing infrastructure upgrade needs, not only energy. .

1. Thinking about the priority of energy efficiency retrofits, would you place your energy efficiency retrofit projects near the top, middle or bottom of the list compared to other investments, such as water or wastewater? Why?

2. Over the next five years, given the press of infrastructure issues facing local government business, do you see the priority for energy efficiency within your community moving up, staying the same or moving down the priority list? Can you explain?

3. What kinds of things can cause the priority for energy efficiency to change? Please explain.

4. How do financial constraints play in this prioritization, particularly given the current economic conditions?

5. With this in mind, what do you think the most significant barriers are for you to implement energy-efficiency projects in your ***[CITY/TOWN/COUNTY]*** facilities? Why? (Probe for financial, management buy-in, capital budgeting and planning cycle constraints, competition for other capital investments.)

6. Looking into the future, where do you see energy efficiency retrofit projects and how they fit into all your other improvement budgets? Please explain.

X. Financial Constraint Questions

Throughout this interview we've discussed some of the issues related to completing energy-efficiency retrofit projects. One of the topics we've touched on is the difficulty of financing these opportunities. I'd like to talk to you just a bit more about the financing of these projects, especially in light of the current economic conditions…

1. What can the program do to help overcome the financial barrier?

2. Some programs are leveraging state loan programs. Have you had any experience using such loan programs to fund energy efficiency or capital improvements? (IF YES) What was your experience?

3. Would you be interested in leveraging state or other loan programs to fund energy efficiency improvements? Why or why not? What do you see the barriers being in leveraging loan programs?

4. Are there any other financing strategies you've taken advantage of to fund energy efficiency or capital improvement projects? Please explain.

5. Is there anything the program can do to help you advocate and receive funding energy efficiency retrofit projects to your decisions-makers?

XI. Wrap-up

1. I appreciate all the time you have provided to me. Is there anything else you would like me to note about your experience with the ABAG Energy Watch Program?

[OFFER TO PROVIDE A WRITE-UP OF NOTES TO RESPONDET A MEANS TO ENSURE THAT WE ACCURATELY CAPTURED THE IFNORMATION]

[THANK RESPONDENT FOR THEIR TIME]

AMBAG ENERGY WATCH HOME ENERGY SURVEY – RESIDENTIAL SURVEY

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission. I'm calling regarding a home energy audit you received through PG&E and the AMBAG Energy Watch program. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how household uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the energy audit services offered through the AMBAG Energy Watch Program. I'm not selling anything; I'd just like to ask your opinion about the audit you received. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your home, and your opinions about these services. Your responses will be kept confidential.

Screening

S1 Our records indicate that around **[date]** a representative from Staples Marketing came to your home to review how your home uses energy and worked with you to complete a survey which collected information about your home's equipment and energy use. At the time they came into your home they provided CFLs and possibly other lighting fixtures.

Do you remember this?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who might remember receiving the home audit, or what they may refer to as the AMBAG Energy Watch program?

1 Yes → Get contact name and call back or continue if available
2 No → Thank and terminate

S3 Are you the right person to talk to about information you may have received as part of the home audit?

1 Yes
2 No [ASK TO SPEAK WITH CORRECT CONTACT; RESCHEDULE IF NECESSARY]

S4 Did you receive the results of the Home Energy Efficiency Survey? [IF NECESSARY: The results would have been sent to you by PG&E and showed you how your home's energy use compared with other homes, how much energy different equipment used in your home, and recommendations for saving energy.]

1 Yes
2 No [SEE IF SOMEONE ELSE WOULD HAVE RECEIVED, ELSE TERMINATE]

In-Home Energy Audit – Recommended Equipment and Behavioral Measures

RR1a As part of the audit, did the auditor offer specific recommendations on <u>energy efficient appliances or equipment</u> you could install in your home to make it more energy efficient?

(INTERVIEWER: IF R MENTIONS DIRECT INSTALL MEASURE GIVEN BY AUDITOR, FOLLOW WITH "Thank you. We'll be talking about that equipment later in the interview.")

1 Yes
2 No
D (DON'T KNOW)

RR1b Did the report you received provide any specific recommendations on <u>energy efficient appliances or equipment</u> you could install in your home to make it more energy efficient?

(INTERVIEWER: IF R MENTIONS DIRECT INSTALL MEASURE GIVEN BY AUDITOR, FOLLOW WITH "Thank you. We'll be talking about that equipment later in the interview.")

1 Yes
2 No [SKIP TO RR15a]
D (DON'T KNOW) [SKIP TO RR15a]

RR2 **(IF NECESSARY)** What recommendations did the [auditor/report/auditor and report] make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

INTERVIEWER NOTE: IF SAY 'INSTALL ENERGY STAR APPLIANCES' PROBE FOR SPECIFIC APPLIANCES.

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Install ENERGY STAR appliances (in general)
16 Solar screens or film
17 Other (specify)
18 (DON'T KNOW)
19 (REFUSED)

[IF RR1a and RR2b = NO, DK, REF AND NO RECOMMEDATION RECALLED IN RR2 SERIES, SKIP TO RR15]

RR3 Have you installed any of the energy saving appliances or equipment that the [auditor/report/auditor and report] recommended?

1 Yes
2 No [SKIP TO RR14]
D (DON'T KNOW) [SKIP TO RR14]

RR4 What have you installed? [RECORD ALL THAT APPLY]

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Install ENERGY STAR appliances (in general)
16 Solar screens or film
17 Other (specify)
18 (DON'T KNOW)
19 (REFUSED)

RR4d **(IF NEW CLOTHES WASHER)** How many loads of laundry do you typically wash in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR4e How many loads of laundry do you typically dry in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR4f **(IF CFLs)** I am going to read a list of rooms in your home. Please tell me the number of CFLs in these rooms.

(READ LIST, FILL IN BLANKS WITH QUANTITY)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify)	
(DON'T KNOW)	

RR4fw On average, what was the wattage of the bulbs you replaced with CFLs? For example, 60 watt, 75 watts, or three-watt bulb.

ENTER WATTAGE _____
D (DON'T KNOW)
R (REFUSED)

RR4r **(IF INSULATION ADDED OR IMPROVED)** Did you add insulation in the walls, the attic or ceiling or both?

1 Wall Only
2 Attic or Ceiling Only
3 Both
D (DON'T KNOW)
R (REFUSED)

RR4r1a (IF INSULATION ADDED TO WALLS OR BOTH) Did you have insulation in the walls before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1b (IF INSULATION ADDED TO WALLS OR BOTH AND PREVIOUSLY HAD INSULATION IN WALLS) What was the R value of the wall insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r1c(IF INSULATION ADDED TO WALLS OR BOTH) What is the current R value of the wall insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1d (IF INSULATION ADDED TO WALLS OR BOTH) And how many walls did you insulate?

__ NUMBER OF WALLS INSULATED
D (DON'T KNOW)
R (REFUSED)

RR4r2a (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) Did you have insulation in the attic or ceilings before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r2b (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH AND PREVIOUSLY HAD INSULATION IN THE ATTIC/CEILINGS) What was the R value of the attic insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) What is the current R value of the attic insulation?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

RR4r2b2 (IF RR4r2b = DK/REFUSED) How many inches of attic insulation did you have before you added more?

__ ENTER INCHES OF INSULATION

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c2 (IF RR4r2c = DK/REFUSED) How many inches of insulation would you say are now in the attic?

__ ENTER INCHES OF INSULATION
77 (DON'T KNOW)
99 (REFUSED)

RR4r2d (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) And what percent of your attic is insulated?

__ ENTER PERCENT OF ATTIC INSULATED
D (DON'T KNOW)
R (REFUSED)

RR5 Please think back to the time when you decided to purchase the equipment referred to you by the auditor perhaps recalling things that occurred in your household shortly before and after **[date]**. What factors motivated you to purchase this equipment?

Could the factors be different for each different piece of equipment?

[DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or auditor or report recommendation
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the auditor
8 Because of past experience with another utility program
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Part of a remodeling project
16 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR6 **(ASK FOR EACH MEASURE INSTALLED)** Did you receive a rebate for this **[installed measure**] through a local utility program? (If say yes, follow up: Which program?)

1 Yes-→Which program? _____
2 No
D DK
R REFUSED

(ASK RR7-RR8 ONLY FOR EACH MEASURE NOT INSTALLED THROUGH UTILITY PROGRAM - RR6 = 2,D or R. IF REBATE RECEIVED, SKIP TO RR13a)

Now I'd like to ask some additional questions about the equipment you purchased.

RR7 **(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR4 = 1, 6-11)** Is the new **[installed measure**] energy efficient?

1	Yes	
2	No	[SKIP TO NEXT MEASURE OR RR14]
D	DK	[SKIP TO NEXT MEASURE OR RR14]
R	REFUSED	[SKIP TO NEXT MEASURE OR RR14]

RR8 **(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR7=1)** How do you know that this equipment is energy efficient? (PROBE: IS IT ENERGY STAR® RATED? INDICATE ALL THAT APPLY)

1 It is ENERGY STAR® rated
2 It is the brand and model that the auditor recommended
3 The rating (SPECIFY)
4 The sales person told me it was
5 It was new
6 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR9 **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 7-11)** Did the new **[installed measure**] replace existing equipment?

1	Yes	
2	No	[SKIP TO RR10]
D	DK	[SKIP TO RR10]
R	REFUSED	[SKIP TO RR10]

RR9c **(ASK FOR EACH INSTALLED MEASURE IF RR4 RR4 = 1, 7-11)** Was the old [**product type**] working or not working?

1	Working	
2	Not working	[SKIP TO RR10]
D	(DON'T KNOW)	[SKIP TO RR10]
R	(REFUSED)	[SKIP TO RR10]

RR9d **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 7-11)** Was the old **[product type]** in good, fair, or poor working condition?

1 Good
2 Fair
3 Poor
D (DON'T KNOW)
R (REFUSED)

RR10 Do you recall what month and year you purchased the new **[installed equipment]**?

__	Month	__	Year
D	(DON'T KNOW)	D	(DON'T KNOW)
R	(REFUSED)	R	(REFUSED)

RR10b **(IF DON'T KNOW MONTH IN RR10)** Do you recall if it was during the winter, spring, summer or fall?

1 Winter
2 Spring
3 Summer
4 Fall
D (DON'T KNOW)
R (REFUSED)

Free Ridership

RR11 At the time that the [auditor/report/auditor or report] recommended **[installed equipment]**, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing (**installed equipment**)?	Y	N
b. Already begun collecting information about (**installed equipment**)?	Y	N
c. Already decided to buy the (**installed equipment**)?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

RR12 Just to be sure I understand, did you have specific plans to install **[installed equipment]** before the [auditor/report/auditor or report] recommended it?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR13b What influence, if any, the **[auditor's/report's/auditor's or report's]** recommendation have on your decision to purchase and install the **[installed equipment]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

RR13a Please rate the influence on a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, that the **[auditor's/report's/auditor's or report's]** recommendation had on your decision to purchase and install **[installed equipment]**?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

(IF INSTALLED ALL RECOMMENDATIONS, SKIP TO RR15)

RR14 Do you have plans to install any of the other equipment or appliances that were recommended by the **[audit/report/auditor or report]** within the next two years?

1 Yes
2 No [SKIP TO RR15]
D (DON'T KNOW) [SKIP TO RR15]

RR14b What do you plan to install? [RECORD ALL THAT APPLY AND SPECIFY NUMBER OF MONTHS BEFORE INSTALL]

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Install ENERGY STAR appliances (in general)
16 Install solar screens or film
17 Other (specify)
18 (DON'T KNOW)
19 (REFUSED)

RR14c (REPEAT FOR EACH PIECE OF EQUIPMENT MENTIONED AT RR14b) When do you plan to install a **[fill equipment from RR14b]**? Would you say in the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
D Don't Know
R Refused

RR15a Did the auditor offer specific recommendations on low cost or behavior changes you could take to save energy or water in your home?

1 Yes
2 No
D (DON'T KNOW)

RR15b Did the report offer specific recommendations on low cost or behavior changes you could take to save energy or water in your home?

1 Yes
2 No [SKIP TO **RR15d**]
D (DON'T KNOW) [SKIP TO **RR15d**]

RR15c What recommendations did the [auditor/report/auditor or report] make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1	Lower heating thermostat	18	Use clothesline
2	Increase AC thermostat setting	19	Use energy savings button on refrigerator
3	Use fans instead of air conditioning	20	Set refrigerator dial to middle setting
4	Lower water heater temperature	21	Reduce water pressure
5	Turn off lights when not in use	22	Unplug electronics when not in use or use power strips
6	Stop overdrying clothes	23	Turn off faucets
7	Clean refrigerator coils and gasket	24	Replace two light bulbs for one higher output bulb
8	Replace or clean the AC filter	25	Separate lightweight from heavier fabrics in dryer
9	Replace or clean the heater filter	26	Use an exhaust fan to blow hot air out of kitchen when cooking
10	Repair faucet leaks	27	Run full loads in dishwasher
11	Repair toilet leaks	28	Other (SPECIFY)
12	Fix duct leaks	29	(DON'T KNOW)
13	Close shades in the summer	30	(REFUSED)
14	Use task lighting		
15	Take shorter showers		
16	Wash clothes in cold waters		
17	Wash and dry clothes with a full load only		

ASK RR16-RR36 FOR APPLICABLE ACTIONS RECOMMENDED

Lower Heating Thermostat

RR16 Since the receiving the report, have you lowered your heating thermostat setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR16a (IF YES TO RR16) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to lower your heating thermostat?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

RR16b (IF RR16a>6) Before receiving the audit, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR16c (IF RR16a>6) Before the audit, at what temperature did you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

RR16d (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR16e (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

Increase Air Conditioner Thermostat Setting

RR17 Since the audit, have you turned up your air conditioner thermostat setting so the temperature is warmer?

0 No air conditioner (SKIP TO RR19)
1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR17a (IF YES TO RR17) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn up your air conditioner thermostat setting?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

RR17b **(IF RR17a>6)** Before the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR17c **(IF RR17a>6)** Before the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

RR17d **(IF RR17a>6)** After the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR17e **(IF RR17a>6)** After the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

Use Fans instead of Air Conditioner

RR18 Before the AMBAG home energy audit, did you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18a Since the AMBAG home energy audit, do you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18b **(IF RR18a > RR18)** On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to use fans rather than air conditioning?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R REFUSED

RR18c **(IF RR18b > 6)** What type of fans do you use most often rather than air conditioning? (INDICATE ALL THAT APPLY)

1 Box fan
2 Oscillating table fan
3 Oscillating floor fan
4 Ceiling fan
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR18d **(IF RR18b > 6)** How many do you use?

ENTER NUMBER

__ Box fans
__ Oscillating table fans
__ Oscillating floor fans
__ Ceiling fans
__ Other

Lowered Water Heater Temperature

RR19 Since the AMBAG home energy audit, have you lowered the hot water temperature on your water heater?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR19b **(IF YES TO RR19)** On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to lower your hot water temperature?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR19c (IF RR19b>6) Before the audit, at what temperature did you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __
D (DON'T KNOW)
R (REFUSED)

RR19d (IF RR19b>6) After the audit, at what temperature do you set your hot water eater?

ENTER TEMPERATURE IN DEGREES __
D (DON'T KNOW)
R (REFUSED)

Turned Off Lights When Not is Use

RR20 Before receiving the AMBAG Energy Services audit, did you always, sometimes or rarely turn off lights when you left a room?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR20a Since you received the audit, do you always, sometimes or rarely turn off lights when you leave a room?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR20b (IF R20a< RR20) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to turn off lights when you leave a room?

RECORD RESPONSE (0-10) __

D (DON'T KNOW)
R (REFUSED)

RR20c (IF RR20b > 6) After the audit, in what rooms did you start turning off the lights when you were not in them? (DO NOT READ, CHECK ALL THAT APPLY)

1 Living/family room
2 Dining room
3 Den/Office
4 Kitchen

5 Bedrooms
6 Bathrooms
7 Closets
8 Hallways
9 Attic
10 Basement
11 Garage
12 Yard/Outside
13 Other (specify)
14 Don't know

RR20d (REPEAT FOR EACH ROOM MENTIONED IN RR20c) On average, how many additional hours a day are the lights in **[room]** now turned off because you turn them off when you leave the room?

ENTER NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

RR20e (REPEAT FOR EACH ROOM MENTIONED IN RR20c) What is the wattage of the most common type of light fixture in your **[room]**?

ENTER WATTAGE __
D (DON'T KNOW)
R (REFUSED)

Close Shades in the Summer

RR21a Before the audit, did you always, sometimes or rarely close the shades on your windows in the summer?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR21b After the audit, did you always, sometimes or rarely close the shades on your windows in the summer?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR21c (IF RR21a < RR21b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to close window shades in the summer?

RECORD RESPONSE (0-10) __

D (DON'T KNOW)
R (REFUSED)

RR21d (IF RR21c > 6) On average, what time of day do you close the shades in the summer?

__:__ ENTER TIME
D (DON'T KNOW)
R (REFUSED)

RR21e (IF RR21c > 6) And on average, on how many windows did you close the shades?

__ ENTER NUMBER OF WINDOWS
D (DON'T KNOW)
R (REFUSED)

Take Shorter Showers

RR22a (IF TAKE SHORTER SHOWERS) Before the audit, in your household, how long was the average shower?

__ ENTER LENGTH IN MINUTES
D (DON'T KNOW)
R (REFUSED)

RR22b (IF TAKE SHORTER SHOWERS) After the audit, in your household, how long was the average shower?

__ ENTER LENGTH IN MINUTES
D (DON'T KNOW)
R (REFUSED)

RR22c (IF RR22a > RR22b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to take shorter showers?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR22d (IF RR22c > 6) On an average day, how many showers are taken in your household?

__ ENTER AVERAGE NUMBER OF SHOWERS
D (DON'T KNOW)
R (REFUSED)

Stop Overdrying Clothes

RR23a (IF STOP OVERDRYING CLOTHES RECOMMENDED) There are several ways to use your clothes dryer less, including using the automatic sensor, removing clothes while still damp, or line drying them. Since the audit, have you used your clothes dryer less?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR23b (IF YES TO RR23a) How are you using it less? (INDICATE ALL THAT APPLY)

1 Use for shorter period of time
2 Use automatic sensor
3 Line dry more often
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR23c (IF YES TO RR23a) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to use your clothes dryer less?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

Line Dry More

RR24a (IF LINE DRY MORE DUE TO AUDIT) Before the audit, how many loads of laundry did you typically line dry in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

RR24b (IF LINE DRY MORE DUE TO AUDIT) Since the audit, how many loads of laundry do you now typically line dry in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

RR24c (IF RR24a < RR24b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to line dry your laundry?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

Wash Clothes in Cold Water

RR25a (IF WASH CLOTHES IN COLD WATER) Before the audit, did you always, sometimes or rarely wash your clothes in cold water?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR25b (IF WASH CLOTHES IN COLD WATER) After the audit, did you always, sometimes or rarely wash your clothes in cold water?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR25c (IF RR25a > RR25b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to take wash your clothes in cold water?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Launder Full Load Only

RR26a (IF LAUNDER FULL LOAD ONLY) Before the audit, did you always, sometimes or rarely wash and dry a full load of laundry? A full load of laundry is considered filling your washing machine to or near capacity.

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR26b (IF LAUNDER FULL LOAD ONLY) After the audit, did you always, sometimes or rarely wash and dry a full load of laundry?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR26c (IF RR26a > RR26b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to wash and dry a full load of laundry?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Dry Lighter Loads Together

RR27a (IF DRY LIGHTER LOADS TOGETHER) Before the audit, did you always, sometimes or separate your lightweight and heavier fabric clothing when drying them?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR27b (IF DRY LIGHTER LOADS TOGETHER) After the audit, did you always, sometimes or separate your lightweight and heavier fabric clothing when drying them ?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR27c (IF RR27a > RR25b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to separate your clothes when drying them?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Laundry

RR28 (IF LAUNDRY MEASURE RECOMMENDED) How many loads of laundry do you typically wash in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

Turn on Energy Savings Button

RR29a After the audit, did you turn on the energy savings button on your refrigerator?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR29b (IF RR29a = 1) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to turn on the energy savings button on your refrigerator?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Set Refrigerator to Middle Setting

RR30a After the audit, did you set your refrigerator dial to the middle setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR30b (IF RR30a = 1) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to set your refrigerator dial to the middle setting?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Use Task Lighting

RR32a Before the audit, did you always, sometimes or rarely use task lighting (like small desk lamps) instead of other general use lighting (like overhead lights)?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR32b After the audit, did you always, sometimes or rarely use task lighting instead of other general use lighting?

1 Always
2 Sometimes
3 Rarely

D (DON'T KNOW)
R (REFUSED)

RR32c (IF RR32a > RR32b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to use task lighting instead of other general use lighting?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR32d (IF RR32c > 6) How many hours in a typical day do you use task lighting when you would have used general use lighting before?

RECORD NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

Reduce Water Pressure

RR33a Since the audit, have you reduced your home's water pressure?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR33b (IF YES TO RR33a) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to reduced your home's water pressure?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR33c (IF RR33b > 6) Before the audit, at what pressure was your home's water pressure regulator set? (ANSWER IN PSI)

__ PSI SETTING
D (DON'T KNOW)
R (REFUSED)

RR33d (IF RR33b > 6) After the audit, at what pressure was your home's water pressure regulator set? (ANSWER IN PSI)

__ PSI SETTING
D (DON'T KNOW)
R (REFUSED)

Use Power Strips or Unplug Electronics When Not in Use

RR34 (IF USES POWER STRIPS OR UNPLUGS ELECTRONICS TO SAVE ENERGY) Before the Tune-up Audit, did you always, sometimes or rarely use power strips to switch off or unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR34a Since the Tune-up Audit, do you always, sometimes or rarely use power strips to switch off or unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR34b (IF RR34a < RR34) What type of electronics do you now always or sometimes use power strips to switch off or unplug when not in use? (READ ONLY IF NEEDED AS EXAMPLE; INDICATE ALL THAT APPLY)

1 TV
2 DVD player
3 Cell phone chargers
4 Computer
5 Power strip
6 Electronic games
7 Stereo equipment
8 Other (SPECIFY)

RR34c (IF RR34a < RR34) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to use power strips to switch off or unplug these electronic(s) when not in use?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Wash full loads in dishwasher

RR35a (IF RUN DISHWASHER WITH FULL LOAD ONLY) Before the audit, did you always, sometimes or rarely run your dishwasher when it was full? A full load is considered filling your dishwasher is close to or near capacity.

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)

R (REFUSED)

RR35b (IF RUN DISHWASHER WITH FULL LOAD ONLY) After the audit, did you always, sometimes or rarely run your dishwasher when it was full?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR35c (IF RR35a > RR35b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to run your dishwasher when full?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR35d How many times do you typically run your dishwasher in a week?

____ Number of times
D (DON'T KNOW)
R (REFUSED)

Exchange two smaller bulbs for one higher wattage bulb

RR36a The program recommends that you replace two smaller wattage light bulbs with one higher wattage light bulb. How many bulbs did you remove?

____ Bulbs
D (DON'T KNOW)
R (REFUSED)

RR36b What was the approximate wattage of the bulbs you removed?

____ Watts
D (DON'T KNOW)
R (REFUSED)

RR36c And how many bulbs did you install to replace those removed?

____ Bulbs
D (DON'T KNOW)
R (REFUSED)

RR36d What was the approximate wattage of the bulbs you replaced them with?

____ Watts
D (DON'T KNOW)
R (REFUSED)

RR36e (IF RR36a > RR36c) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the program's recommendation have on your decision to remove the lower wattage bulbs and replace them with fewer higher wattage bulbs?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Other Behavioral

RR37 (READ QUESTIONS)

Since the audit, have you . . . ?	
RR37_a Cleaned refrigerator coils and gasket more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR37_a2 (IF REPLACED OR CLEANED AC FILTERS) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to replace or clean your refrigerator coils and gasket more often?	RECORD RESPONSE (0-10) __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_a3 How many times a year did you replace or clean your refrigerator coils and gasket before the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_a4 How many times a year did you replace or clean your refrigerator coils and gasket after the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_b Replaced or cleaned the AC filter more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR37_b2 On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to replace or clean your AC filter more often?	RECORD RESPONSE (0-10) __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_b3 How many times a year did you replace or clean your AC filter before the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_b4 How many times a year did you replace or clean your AC filter after the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_c Replaced or cleaned the heater filter more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED

Since the audit, have you . . . ?	
RR37_c2 On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to replace or clean your heating filter more often?	RECORD RESPONSE (0-10) __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_c3 How many times a year did you replace or clean your heating filter before the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_c4 How many times a year did you replace or clean your heating filter after the audit?	ENTER NUMBER OF TIMES PER YEAR __ 77 (DON'T KNOW) 99 (REFUSED)
RR37_d Fixed duct leaks?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR37_e Had your water heater cleaned or services?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR37_f Turned off faucets when water is not being used, such as when you brush your teeth?	1 Yes 2 No D (DON'T KNOW) R REFUSED

RR38 What benefits, if any, have you or your household received from participating in the AMBAG home energy survey? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Learned how to change energy using behaviors / learned how to save energy
2 Able to share what I learned with others
3 Installed more measures on my own
4 Saved energy
5 Saved money on energy bills
6 Other (specify)
7 No benefits
8 (DON'T KNOW)

RR39 Since receiving the audit results from PG&E through the AMBAG program, do you feel you are just as aware or more aware of ways to save energy in your home?

1 Just as aware
2 More aware
D (DON'T KNOW)
R (REFUSED)

RR40 **(IF MORE AWARE)** How much more aware are you? Please rate on a 0 to 10 scale, where 0 means you are slightly more aware and 10 means you are significantly more aware.

ENTER VERBATIM RESPONSE

RR41 Do you feel that, as a result of what you learned through the audit and program, you are less likely, just as likely, or more likely to consider the energy efficiency of equipment when making appliance or equipment purchases?

1 Less likely
2 Just as likely
3 More likely
D (DON'T KNOW)
R (REFUSED)

RR42 How likely is it that you and members of your household will continue to use the information you received through the audit and program to reduce energy use in your household? Please rate on a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely.

ENTER VERBATIM RESPONSE

Resource Measures—Recall, Installation

EA4 According to the records I have, the auditor provided your household with lighting equipment. What type of equipment did the auditor install? [INDICATE ALL THAT APPLY]

1 CFLs
2 Torchieres
3 Lighting fixtures
4 Other (Specify)
D (DON'T KNOW)
R (REFUSED)

EA4A1-EA4A3 (ASK FOR EACH TYPE INSTALLED IN EA4) How many [TYPE] did the auditor install?

1 _____ NUMBER
D (DON'T KNOW)
R (REFUSED)

EA4a **(IF CFLs)** Where is this/are the **[quantity]** CFLs the auditor provided installed in your residence? Approximately how many hours a day is this/are these bulbs normally used? (READ LIST, FILL IN BLANKS WITH QUANTITY AND HOURS OF USE)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify)	
(DON'T KNOW)	

EA4n Did the auditor leave or install any (IF RECEIVED DIRECT IN EA4: other) light bulbs, showerheads, facuet aerators, torchiere bulbs or clotheslines when he or she visited your home?

1	Yes	
2	No	(SKIP TO NEXT SECTION)
D	(DON'T KNOW)	(SKIP TO NEXT SECTION)
R	(REFUSED)	(SKIP TO NEXT SECTION)

EA4n1 What did he or she leave?
(CHECK ALL THAT APPLY)

1	CFL's
2	Showerheads
3	Faucet Aerators
4	Torchiere bulbs
5	Retractable clothesline
D	DON'T KNOW
R	REFUSED

(IF NO MEASURES IDENTIFIED IN SAMPLE, SKIP TO NEXT SECTION)

[REPEAT EA6-EA12 FOR EACH MEASURE CATEGORY R RECALLS, REGARDLESS OF WHETHER IT WAS INSTALLED BY THE AUDITOR OR NOT]

EA6 **(IF QUANTITY=1)** Now, I would like to understand what you did with the [**equipment**]**.** Is this **[equipment]** currently installed at your home (either indoors or outdoors)? (RECORD ONE NUMBER)

1	Yes	(SKIP TO NEXT MEASURE OR W1)
2	No	
D	(DON'T KNOW)	(IF NO OTHER KNOWLEDGEABLE R, GO TO NEXT MEASURE CATEGORY)
R	(REFUSED)	(IF NO OTHER KNOWLEDGEABLE R, GO TO NEXT MEASURE CATEGORY)

EA7 **(IF QUANTITY=1)** Which of the following best describes what happened with the **[equipment]**? (READ LIST AND RECORD ONE RESPONSE)

1	It is installed at some other location	(SKIP TO EA9)
2	It was installed at your home but is now permanently removed (example: broke, burned out, don't fit, don't like, etc.)	(SKIP TO EA10)
3	It is in storage for some other reason	(SKIP TO EA12)
4	It was sold or given away	(SKIP TO EA9)
5	Something else (SPECIFY)	(SKIP TO NEXT MEASURE)
D	(DON'T KNOW)	(SKIP TO NEXT MEASURE)
R	(REFUSED)	(SKIP TO NEXT MEASURE)

EA8 **(IF QUANTITY>1)** Now, I would like to understand what you did with the **[quantity] [equipment].** (READ LIST, RECORD NUMBER)

a____ How many are currently installed at <u>your</u> home (either indoors or outdoors) **(IF RESPONSE=QUANTITY, SKIP TO NEXT MEASURE OR W1)**
b____ How many are installed at some other location?
c____ How many were installed at your home (either indoors or outdoors) but are now permanently removed (example: broke, burned out, don't fit, don't like, etc.)
d____ How many are in storage for some other reason?
e____ How many were sold or given away?
f____ Something else? (SPECIFY)

Removed Measures

(ASK ONLY IF THEY SAY THEY REMOVED A MEASURE AFTER INSTALLED, EA7=2 or EA8c>0)

EA10 Now let's talk about **[equipment]** you said was installed but has since been removed. Why was this removed? (DO NOT READ LIST, RECORD ALL THAT APPLY)

1 (Equipment failed/broke)
2 (Didn't work properly)
3 (Wrong size—too small or too large)
4 (Low water flow)
5 (Didn't like the color)
6 (Didn't like appearance/unattractive)

7 (Other, Specify:_____)
D (DON'T KNOW)
R (REFUSED)

EA11 What did you replace **[equipment]** with? (DO NOT READ LIST; PROBE FOR EFFICIENCY, RECORD ALL THAT APPLY)

1 (With a new high efficiency [**equipment**])
2 (With a less efficient [**product type**])
3 (Re-installed old equipment)
4 (Did not replace)
5 (Other, Specify: _____)
D (DON'T KNOW)
R (REFUSED)

Measures in Storage

(ASK ONLY IF THEY SAY MEASURE IS IN STORAGE FOR SOME OTHER REASON, EA7=4 or EA8d>0)

EA12 When do you think you will install the [**equipment**]? Would you say within the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now, or never?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
5 Never
D (DON'T KNOW)
R (REFUSED)

Resource Measures—Free Ridership

Warm-up Questions/Background Context

W1 Please think back to the time when you decided to have the AMBAG audit, perhaps recalling things that occurred in your household shortly before and after [**date**]. What factors motivated you to have the audit? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit was free
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program and/or audit
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

W2 **(IF RECEIVED LIGHTING)** Did the lighting you received replace existing lighting?

1	Yes	
2	No	[SKIP TO FR1]
D	Don't Know	[SKIP TO FR1]
R	(REFUSED)	[SKIP TO FR1]

W3 **(IF RECEIVED LIGHTING)** Was the old lighting working or not working?

1 Working
2 Not working
D (DON'T KNOW)
R (REFUSED)

W5 **(IF FAUCET AERATORS OR SHOWERHEADS)** Did you have any existing faucet aerators or low flow showerheads installed prior to the auditor's visit?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

[REPEAT FR1-FR12 FOR LIGHTING MEASURES AND WATER MEASURES INSTALLED. EQUIPMENT ASKED ABOUT IS BASED ON THAT THEY SAID THEY RECEIVED PER EA SERIES ABOVE]

FR1 At the time that you first heard about the AMBAG program, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing [**equipment**]?	Y	N
b. Already begun collecting information about [**equipment**]?	Y	N
c. Already decided to buy the [**equipment**]?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

FR2 Just to be sure I understand, did you have specific plans to install a(n) [**equipment**] before learning that you could get it free through the AMBAG audit?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

[REPEAT AS NEEDED FOR FR4 PARTS A – D] If the free **[equipment]** had not been offered through the AMBAG audit, would you still have . . . .

FR4a Purchased the [**equipment**]?

1	Yes	
2	No	[SKIP TO FR5]
D	(DON'T KNOW)	
R	(REFUSED)	

FR4b Purchased the [**equipment**] at approximately the same time as when the auditor installed or left it with you? (PROBE: That would be around [**date**])

1	Yes	[SKIP TO FR4C]
2	No	
D	(DON'T KNOW)	[SKIP TO FR4C]
R	(REFUSED)	[SKIP TO FR4C]

FR4b1 Would you have purchased the [**equipment]** earlier than you did, or later?

1	Earlier	
2	Same Time	[REPEAT QUESTION FR4B]
3	Later	
D	(DON'T KNOW)	[SKIP TO FR4C]
R	(REFUSED)	[SKIP TO FR4C]

FR4b2 How much [earlier/later] would you have bought the [**equipment**]?

_____ Years [and/or] _____Months
D (DON'T KNOW)
R (REFUSED)

FR4c **(IF QUANTITY > 1)** Without the AMBAG audit, would you have purchased the same quantity of [**equipment**] as what the auditor installed or left with you?

1	Yes	[SKIP TO FR4D]
2	No	
D	(DON'T KNOW)	[SKIP TO FR4D]
R	(REFUSED)	[SKIP TO FR4D]

FR4c1 How many/much would you have purchased without the audit?

_____ [record number]
D (DON'T KNOW)
R (REFUSED)

FR4c2 **(IF FR4c = DK/REFUSED)** On a scale of 0 to 10, where 0 is not very likely and 10 is very likely, how likely is it that you would have purchased the same quantity of **[equipment]** as what you received through the AMBAG program?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

FR4d **(FOR INCREMENTAL EFFICIENCY MEASURES – LIGHTING)** Would you have purchased the same efficiency of **[equipment]**?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

FR4e If the free **[equipment]** had not been available through the AMBAG program, would you have done anything else differently?

1	Yes	
2	No	[SKIP TO FR5]
D	DON'T KNOW	[SKIP TO FR5]
R	REFUSED	[SKIP TO FR5]

FR4e1 What would you have done differently?

[Record response]: _____

FR5 On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have bought the same **[equipment]** at the same time if you had not received it free through the AMBAG audit?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

FR11 On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with this statement? I would have bought **[product type]** within a year of when I did if the auditor had not installed it through the AMBAG program.

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

FR12 Please tell me in your own words what influence, if any, the program or audit had on your decision to have the auditor install the **[equipment]** at the time you did? (RECORD VERBATIM RESPONSE)

_____

Participation in Other Core Programs (Funneling)

M1 As part of your participation in this program, did you receive information about other utility programs?

1 Yes
2 No [SKIP TO B1]
D DON'T KNOW [SKIP TO B1]

M2 What information did the program give you? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Brochures about the program
2 Application forms for participating in the program
3 Assistance in filling out the application form
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3 Did you participate in any of these programs?

1 Yes
2 No [SKIP TO B1]
D DON'T KNOW [SKIP TO B1]

M4 Which programs? [RECORD PROGRAM NAMES]

Building Characteristics

Next I'd like to ask about your home.

B1 Do you own or rent your home?

1 Own
2 Rent
3 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B2 In what type of building do you live? *(READ LIST IF NEEDED)*

1 A mobile home
2 A one-family home detached from any other house
3 A one-family home attached to one or more houses
4 A building with 2 apartments
5 A building with 3 or 4 apartments
6 A building with 5 or more apartments
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B3 About when was this building first built? *(READ LIST IF NEEDED)*

1 Before 1970's
2 1970's
3 1980's
4 1990-94
5 1995-99
6 2000's
D (DON'T KNOW)
R (REFUSED)

B4 How large is your home / [if apartment: unit] in square feet?

_____ ENTER SQUARE FEET
D (DON'T KNOW)
R (REFUSED)

B4a Since the audit on **[audit date]**, has the size of your home changed?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B4b **(IF B4a = YES)** At the time of the audit, how large was your home / [if apartment: unit] in square feet?

___ ENTER SQUARE FEET
D (DON'T KNOW)
R (REFUSED)

B5 How many *floors* of living space are there in your home, NOT COUNTING unheated basements? Please answer only about *your home*, not the building as a whole]

1 1 floor
2 2 floors
3 3 floors
4 More than 3 floors
D (DON'T KNOW)/Not sure/Can't remember
R (REFUSED)

B6 **(SKIP IF RENT AND LIVE IN MF AND RR4r1a NOT ASKED)** At the time of the audit, were your walls insulated?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B7 **(SKIP IF RENT AND LIVE IN MF AND RR4r2a NOT ASKED)** At the time of the audit, was your attic insulated?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B8 At the time of the audit, did you heat your home with electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B9a **(IF B8a = 2)** At the time of the audit, was your home heated centrally, or was each room heated individually?

1 Central
2 Individual
D (DON'T KNOW)
R (REFUSED)

B9b **(SKIP IF RENT AND LIVE IN MF)** Was this heating system energy efficient?

1 Yes → How can you tell?_____
2 No
D (DON'T KNOW)
R (REFUSED)

B9c **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, how old was your heating system?

__ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B10a **(IF HEATING SYSTEM REPLACED AT RR4)** Previously you said you replaced your heating system because of the auditor's recommendation. Which of the following best describes the fuel the new system uses to heat your home? Is it electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B10b **(IF HEATING SYSTEM REPLACED AT RR4)** Does the new system heat your home centrally, or is each room heated individually?

1 Central
2 Individual
D (DON'T KNOW)
R (REFUSED)

B12a At the time of the audit, what type of fuel did your water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B12b **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, what type of water heater did you own?

1 Standard tank
2 Tankless [SKIP TO B12d]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B12c **(SKIP IF RENT AND LIVE IN MF)** Was this water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B12d **(SKIP IF RENT AND LIVE IN MF)** Was this water heater energy efficient?

1 Yes → How can you tell?_____
2 No
D (DON'T KNOW)
R (REFUSED)

B12e **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, how old was your water heater?

___ ENTER AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B13a **(IF REPLACED WATER HEATER AT RR4)** Previously, you said you replaced your water heater because of the auditor's recommendation. What type of fuel does the new water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B13b **(IF REPLACED WATER HEATER AT RR4)** Which of the following best describes the new water heater? Is it a standard tank water heater, tankless or something else?

1 Standard tank
2 Tankless [SKIP TO B16]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B13c **(IF REPLACED WATER HEATER AT RR4)** Is your new water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B16 **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, did you insulate your water heater or pipes? [NOTE: COULD INCLUDE TANK WRAP, BLANKET,ETC.)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B17a At the time of the audit, what type of air conditioning system, if any, did you use in your home? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Do not have air conditioning [SKIP TO B18a]
5 Other (Specify) _____
D (DON'T KNOW) [SKIP TO B18a]
R (REFUSED) [SKIP TO B18a]

[IF RENTS AND LIVES IN MF, SKIP TO B17e]

B17b Was that AC unit energy efficient?

1 Yes
2 No [SKIP TO B17d]
D (DON'T KNOW) [SKIP TO B17d]
R (REFUSED) [SKIP TO B17d]

B17c Do you know what its SEER rating was?

(SEER = Seasonal Energy Efficiency Ratio)

1 Yes (SPECIFY) [SKIP TO B17d]
2 No
D (DON'T KNOW)
R (REFUSED)

B17d At the time of the audit, how old was your air conditioning unit?

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B17e At the time of the audit, which statement best describes the way your household used the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer, or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B18a **(IF REPLACED COOLING SYSTEM AT RR4)** Previously, you said that you replaced you cooling system because of the auditor's recommendation. What type of air conditioning system is the new system? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B18b **(ONLY IF REPLACED COOLING SYSTEM AT RR4 OR RR18a>RR18)**
(IF REPLACE COOLING SYSTEM AT RR4: Since replacing your cooling system)
(IF RR18a>RR18 AND DID NOT REPLACE COOLING SYSTEM) Since using fans more often) which statement best describes the way your household uses the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)

R (REFUSED)

B23a At the time of the audit, what type of windows did you have in your home? Was it single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify)
D (DON'T KNOW)
R (REFUSED)

B23b1 **(IF WINDOWS REPLACED AT RR4)** What type of window frames did you have at the time of the audit?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [Define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23b2 **(IF B23b = 1)** Did it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23c **(IF WINDOWS REPLACED AT RR4)** What type of glass did your windows have at the time of the audit? (SELECT ALL THAT APPLY)

1 Clear
2 Tinted
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B23e **(IF WINDOWS REPLACED AT RR4)** Previously you mentioned that you replaced your windows because of the auditor's recommendation. Which of the following best describes the new type of window that you installed? Is it single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane

2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B23f **(IF WINDOWS REPLACED AT RR4)** How many windows did you replace?

__ Windows replaced
D (DON'T KNOW)
R (REFUSED)

B23g **(IF WINDOWS REPLACED AT RR4)** Did you also replace the frames at the same time you replaced the windows?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23h **(IF FRAMES REPLACED)** What type of frames did you install?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23h2 **(IF B23h = 1)** Does it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23i **(IF WINDOWS REPLACED AT RR4)** What type of glass are the new windows? (CHECK ALL THAT APPLY)

1 Clear
2 Tint
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B24 (IF CLOTHES WASHER NOT INSTALLED AS RECOMMENDATION)

(Just to confirm…)
Do you have a clothes washer and dryer in your home?

1 Washer
2 Dryer
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

B25 (ASK IF B24=2 OR 3) What type of fuel does your dryer use?

1 Gas
2 Electric
D (DON'T KNOW)
R (REFUSED)

B26 (ASK IF B24=1 OR 3) Do you have a high efficiency front load clothes washer?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B27 (IF NEW REFRIGERATOR)
Where is the freezer located on your refrigerator?

1 Freezer is on the bottom of the refrigerator
2 Freezer is on the top of the refrigerator
3 Freezer is on the side of the refrigerator
4 Refrigerator does not have an attached freezer
D (DON'T KNOW)
R (REFUSED)

B27a (IF NEW REFRIGERATOR)
Does your new refrigerator have a through the door ice machine, through the door water dispenser, both or neither ?

1 Ice machine only
2 Water dispenser only
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

B28 (IF NEW REFRIGERATOR)
What is the size of your refrigerator?

1 Mini refrigerator (dorm fridge/under bar)

2 Standard size home
3 Large size home
4 Other
D (DON'T KNOW)
R (REFUSED)

B29 (IF NEW REFRIGERATOR)
Approximately, how old is the refrigerator?

ENTER AGE IN YEARS __
77 (DON'T KNOW)
99 (REFUSED)

B30 (IF NEW REFRIGERATOR)
Is it high-efficiency (e.g. Energy Star)?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B31 (IF NEW REFRIGERATOR)
Is it in a conditioned or an unconditioned area of your home?
(A conditioned area of a home is an area that is heated or cooled)

1 Conditioned
2 Unconditioned
D (DON'T KNOW)
R (REFUSED)

B32 (IF NEW REFRIGERATOR)
What percentage of the year is the refrigerator on and running?

ENTER PERCENTAGE OF YEAR ___
777 (DON'T KNOW)
999 (REFUSED)

Additional Demographics

We're almost finished. I just have a few questions about your household to make sure we're getting a representative sample of participants.

D1 Including yourself, how many people currently live in your home year-round?

_____ people
D (DON'T KNOW)
R (REFUSED)

D2 (IF D1=1) Which of the following best describes your age?

1 Less than 18 years old

2 18-24 years old
3 25-34 years old
4 35-44 years old
5 45-54 years old
6 55-64 years old
7 65 or older
D (DON'T KNOW)
R (REFUSED)

D3 **(IF D1>1)** Including yourself, how many people currently living in your home year-round are in the following age groups? (TOTAL SHOULD EQUAL D1)

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older
R (REFUSED)

D5 Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .? *(READ)*

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more
D (DON'T KNOW)
R (REFUSED)

RECORD GENDER

1 Male
2 Female

END THANK YOU FOR YOUR TIME.

Community Energy Partnership Tune-up Audit – Residential Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding the Home Energy Efficiency Tune-up audit program you participated in. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how household uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the Tune-up audit program. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your home, and your opinions about these services. Your responses will be kept confidential.

Screening

S1 Our records indicate that around **[date]** someone from the Home Energy Efficiency Tune-up audit program came to your home to review how your home uses energy and provide recommendations on how to save energy in your home. At the time they came into your home they provided **[equipment].**

Do you remember this?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who might remember receiving the home audit, or what they may refer to as Home Energy Efficiency Tune-Up?

1 Yes → Get contact name and call back or continue if available
2 No → Thank and terminate

S3 Are you the right person to talk to about information you may have received as part of the home audit?

1 Yes
2 No [ASK TO SPEAK WITH CORRECT CONTACT; RESCHEDULE IF NECESSARY]

S4 Just for our records, from what utility do you buy your electricity?

1 Southern California Edison (SCE)
2 Pacific Gas & Electric (PG&E)
3 Los Angeles Department of Water and Power (LADWP)
4 Sacramento Municipal Utility District (SMUD)
5 San Diego Gas & Electric (SDG&E)
6 Other (record)
D DON'T KNOW
R REFUSED

S5. And from what utility do you buy natural gas?

1 Southern California Gas (SCG)
2 Pacific Gas & Electric (PG&E)
3 San Diego Gas & Electric (SDG&E)
4 Other (record)
D DON'T KNOW
R REFUSED

In-home Energy Audit Background

EA1 I now have a few questions about your experience with the Tune-up Audit program. How did you hear about the Tune-up audit?

1 Another program (SPECIFY PROGRAM)
2 Local government partnership activities (SPECIFY PROGRAM)
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community Sweeps
8 Community displays
9 Energy fairs
10 Friends/neighbors/relatives
11 Newspaper article
12 Website
13 Other [RECORD]
D DON'T KNOW
R REFUSED

EA2 Can you tell me who sponsored this Tune-up audit? [INDICATE ALL THAT APPLY]

1 Community Energy Partnership
2 The Energy Coalition
3 SCE
4 PG&E
5 SCG/The Gas Company
6 Other
D DON'T KNOW
R REFUSED

EA2b And do you recall who the auditor worked for? [INDICATE ALL THAT APPLY]

1 Community Energy Partnership
2 The Energy Coalition
3 SCE
4 PG&E
5 SCG/The Gas Company
6 Other
D DON'T KNOW/DON'T RECALL
R REFUSED

Recommended Equipment and Behavioral Measures

RR1 As part of the audit, did the auditor offer specific recommendations on energy efficient appliances or equipment you could install in your home to make it more energy efficient?

(INTERVIEWER: IF R MENTIONS DIRECT INSTALL MEASURE GIVEN BY AUDITOR, FOLLOW WITH "Thank you. We'll be talking about that equipment later in the interview.")

1	Yes	
2	No	[SKIP TO RECOMMENDATIONS – RR2B]
D	DON'T KNOW	[SKIP TO RECOMMENDATIONS – RR2B]
R	REFUSED	[SKIP TO RECOMMENDATIONS – RR2B]

RR2 What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1	Install an energy efficient refrigerator	2	Add tinted window film
3	Add interior shades/drapes		
4	Add Exterior awnings		
5	Add window caulking		
6	Add weather stripping		
7	Add door shoe		
8	Add attic exhaust fan		
9	Add a white roof		
10	Replace windows		
11	Replace water heater		
12	Install an energy efficient clothes washer		
13	Install an energy efficient dishwasher		
14	Replace heating system		
15	Replace cooling system		
16	Install CFLs		
17	Replace toilet with low-flow toilet		
18	Add/improve insulation		
19	Other (specify)		
D	DON'T KNOW		
R	REFUSED		

RR2B **[IF REPLACE REFRIGERATOR RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A]** Our records show that the auditor recommended that you install an energy efficient refrigerator. Is that correct?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

RR2C **[IF TINTED WINDOW FILM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A]** Our records show that the auditor recommended that you add tinted window film. Is that correct?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

RR2D **[IF INTERIOR SHADES/DRAPES RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A]** Our records show that the auditor recommended that you add interior shades and/or drapes. Is that correct?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

RR2E [IF EXTERIOR AWNINGS RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you add exterior awnings. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2F [IF WINDOW CAULKING RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you caulk your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2G [IF WEATHER STRIPPING RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you add weather stripping. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2H [IF DOOR SHOE RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you add a door shoe. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2I [IF ATTIC EXHAUST FAN RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an attic exhaust fan. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2J [IF WHITE ROOF RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install a white roof. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2K [IF WINDOWS RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you replace your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2L [IF WATER HEATER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you replace your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2M [IF CLOTHES WASHER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an energy efficient clothes washer. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2N [IF DISHWASHER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you replace install an energy efficient dishwasher. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2O [IF HEATING SYSTEM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install a new heating system. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2P [IF COOLING SYSTEM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install a new cooling system. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2Q [IF CFL RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install compact fluorescent light bulbs or CFLs. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2R [IF LOW FLOW TOILET RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install low-flow toilets. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2S [IF INSULATION RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you add or improve your home's insulation. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

[IF RR1 = NO, DK, REF AND NO RECOMMEDATION RECALLED IN RR2 SERIES, SKIP TO RR15]

RR3 Have you installed any of the energy saving appliances or equipment that the auditor recommended?

1	Yes	
2	No	[SKIP TO RR14]
D	DON'T KNOW	[SKIP TO RR14]

RR4 What have you installed? [RECORD ALL THAT APPLY]

1	Replace refrigerator
2	Add tinted window film
3	Add interior shades/drapes
4	Add Exterior awnings/shade trees
5	Add window caulking
6	Add weather stripping
7	Add door shoe
8	Add attic exhaust fan
9	Add a white roof
10	Replace windows
11	Replace water heater
12	Install an energy efficient clothes washer
13	Install an energy efficient dishwasher
14	Replace heating system
15	Replace cooling system
13	Install CFLs
14	Replace toilet with low-flow toilet
15	Add/improve insulation
16	Other (specify)
D	DON'T KNOW
R	REFUSED

RR4b **(IF NEW REFRIGERATOR)** Where is the freezer located (mounted) on the new refrigerator?

1	Freezer is on the bottom of the refrigerator
2	Freezer is on the top of the refrigerator
3	Freezer is on the side of the refrigerator
4	Refrigerator does not have an attached freezer
D	DON'T KNOW
R	REFUSED

RR4c **(IF NEW REFRIGERATOR)** Does your new refrigerator have a through the door ice machine, through the door water dispenser, both or neither ?

1	Ice machine only
2	Water dispenser only
3	Both
4	Neither
D	(DON'T KNOW)
R	(REFUSED)

RR4d (IF NEW CLOTHES WASHER) How many loads of laundry do you typically wash in a week?

____ loads
D DON'T KNOW
R REFUSED

RR4e How many loads of laundry do you typically dry in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR4f (IF CFLs) I am going to read a list of rooms in your home. Please tell me the number of CFLs in these rooms.

(READ LIST, FILL IN BLANKS WITH QUANTITY AND HOURS OF USE)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify:_____ _____)	
(DON'T KNOW)	

RR4fw On average, what was the wattage of the bulbs you replaced with CFLs? For example, 60 watt, 75 watts, or three-watt bulb.

ENTER WATTAGE _____
D (DON'T KNOW)
R (REFUSED)

RR4g **(IF WINDOW FILM)** What color is the window film you installed?

1 Amber
2 Silver
3 Nickel
4 Neutral
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR4h **(IF WINDOW FILM)** On how many windows did you install this film?

ENTER NUMBER OF WINDOWS__

RR4i **(IF INTERIOR SHADES/DRAPES)** What type of shades or drapes did you purchase?

1 Drapes or curtains
2 Horizontal blinds
3 Vertical blinds
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR4j **(IF INTERIOR SHADES/DRAPES)** How many hours on a typical day do you keep these shades/drapes drawn or closed?

ENTER NUMBER OF HOURS __

RR4k **(IF INTERIOR SHADES/DRAPES**) On how many windows did you install these shades/drapes?

ENTER NUMBER OF WINDOWS __

RR4l **(IF EXTERIOR AWNINGS)** What size are the awnings you installed?

ENTER SIZE IN FEET __ INCHES __

RR4m **(IF EXTERIOR AWNINGS)** How high are the awnings above the windows?

ENTER DISTANCE IN FEET __ INCHES __

RR4n **(IF EXTERIOR AWNINGS)** How far do the awnings extend outward?

ENTER DISTANCE IN FEET __ INCHES __

RR4o **(IF EXTERIOR AWNINGS)** On how many windows did you install these awnings?

ENTER NUMBER OF WINDOWS __

RR4p (IF ATTIC EXHAUST FAN) What size is the attic exhaust fan that you installed?

ENTER SIZE IN INCHES __

RR4q (IF ATTIC EXHAUST FAN) What type of roof do you have?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR4r (IF INSULATION ADDED OR IMPROVED) Did you add insulation in the walls, the attic or ceiling or both?

1 Wall Only
2 Ceiling Only
3 Both
D (DON'T KNOW)
R (REFUSED)

RR4r1a (IF INSULATION ADDED TO WALLS OR BOTH) Did you have insulation in the walls before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1b (IF INSULATION ADDED TO WALLS OR BOTH AND PREVIOUSLY HAD INSULATION IN WALLS) What was the R value of the wall insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r1c (IF INSULATION ADDED TO WALLS OR BOTH) What is the current R value of the wall insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1d (IF INSULATION ADDED TO WALLS OR BOTH) And how many walls did you insulate?

__ NUMBER OF WALLS INSULATED
D (DON'T KNOW)
R (REFUSED)

RR4r2a (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) Did you have insulation in the attic or ceilings before adding this insulation?

RR4r2b (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH AND PREVIOUSLY HAD INSULATION IN THE ATTIC/CEILINGS)

What was the R value of the ceiling insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH)

What is the current R value of the attic insulation?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

RR4r2b2 (IF RR4r2b = DK/REFUSED) How many inches of attic insulation did you have before you added more?

__ ENTER INCHES OF INSULATION

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c2 (IF RR4r2c = DK/REFUSED)

How many inches of insulation would you say are now in the attic?

__ ENTER INCHES OF INSULATION
77 (DON'T KNOW)
99 (REFUSED)

RR4r2d (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) And what percent of your attic is insulated?

__ ENTER PERCENT OF ATTIC INSULATED
D (DON'T KNOW)
R (REFUSED)

RR5 Please think back to the time when you decided purchase the equipment referred to you by the auditor, perhaps recalling things that occurred in your household shortly before and after **[DATE]**. What factors motivated you to purchase this equipment?

[DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit recommendation
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the auditor
8 Because of past experience with another utility program
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Part of a remodeling project
16 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR6 **(ASK FOR EACH MEASURE INSTALLED)** Did you receive a rebate for this **[installed measure**] through a local utility program? ? (If say yes, follow up: Which program?)

1 Yes-→Which program? _____
2 No
D DK
R REFUSED

(ASK RR7-RR8 ONLY FOR EACH MEASURE <u>NOT</u> INSTALLED THROUGH UTILITY PROGRAM - RR6 = 2,D or R. IF REBATE RECEIVED, SKIP TO RR13a)

RR7 (REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR4 = 1, 10-15) Now I'd like to ask some additional questions about the equipment you purchased.

Is the new **[installed measure**] energy efficient?

1 Yes
2 No [SKIP TO NEXT MEASURE OR RR14]
D DK [SKIP TO NEXT MEASURE OR RR14]
R REFUSED [SKIP TO NEXT MEASURE OR RR14]

RR8 **(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR7=1)** How do you know that this equipment is energy efficient? (PROBE: IS IT ENERGY STAR® RATED? INDICATE ALL THAT APPLY)

1 It is ENERGY STAR® rated
2 It is the brand and model that the auditor recommended
3 The rating (SPECIFY)
4 The sales person told me it was
5 It was new
6 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR9 **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 11-15)** Did the new **[installed measure**] replace existing equipment?

1 Yes
2 No [SKIP TO RR10]
D DK [SKIP TO RR10]
R REFUSED [SKIP TO RR10]

RR9c **(ASK FOR EACH INSTALLED MEASURE IF RR4 RR4 = 1, 11-15)** Was the old **[product type]** working or not working?

1 Working
2 Not working [SKIP TO RR10]
D DON'T KNOW [SKIP TO RR10]
R REFUSED [SKIP TO RR10]

RR9d **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 11-15)** Was the old **[product type]** in good, fair, or poor working condition?

1 Good
2 Fair
3 Poor
D DON'T KNOW
R REFUSED

RR10 Do you recall what month and year you purchased the new **[installed equipment]**?

_____month _____year
D DON'T KNOW D DON'T KNOW

RR10b (IF DON'T KNOW MONTH IN RR10) Do you recall if it was during the winter, spring, summer or fall?

1 Winter
2 Spring
3 Summer
4 Fall
D DON'T KNOW
R REFUSED

Free Ridership

RR11 At the time that the auditor recommended **[installed equipment]**, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing (**installed equipment**)?	Y	N
b. Already begun collecting information about (**installed equipment**)?	Y	N
c. Already decided to buy the (**installed equipment**)?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

RR12 Just to be sure I understand, did you have specific plans to install **[installed equipment]** before the auditor recommended it?

1 Yes
2 No
D DON'T KNOW
R REFUSED

RR13b What influence, if any, did the auditor's recommendation have on your decision to purchase and install the **[installed equipment]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

RR13a Please rate the influence on a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, that the auditor's recommendation had on your decision to purchase and install **[installed equipment]**?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

(IF INSTALLED ALL RECOMMENDATIONS, SKIP TO RR15)

RR14 Do you have plans to install any of the other equipment or appliances that were recommended by the audit within the next two years?

1	Yes	
2	No	[SKIP TO RR15]
D	Don't know	[SKIP TO RR15]

RR14b What do you plan to install? [RECORD ALL THAT APPLY AND SPECIFY NUMBER OF MONTHS BEFORE INSTALL)

1	Replace refrigerator
2	Add tinted window film
3	Add interior shades/drapes
4	Add Exterior awnings/shade trees
5	Add window caulking
6	Add weather stripping
7	Add door shoe
8	Add attic exhaust fan
9	Add a white roof
10	Replace windows
11	Replace water heater
12	Install an energy efficient clothes washer
13	Install an energy efficient dishwasher
14	Replace heating system
15	Replace cooling system
16	Install CFLs
17	Replace toilet with low-flow toilet
18	Add/improve insulation
19	Other (specify)
D	DON'T KNOW
R	REFUSED

RR14c (REPEAT FOR EACH PIECE OF EQUIPMENT MENTIONED AT RR14b) When do you plan to install a **[fill equipment from RR14b]**? Would you say in the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now?

1	Within the next 3 months
2	3 to 6 months from now
3	6 to 12 months from now
4	More than a year from now
D	Don't Know
R	Refused

RR15 Did the auditor offer specific recommendations on inexpensive changes or behavior changes you could take to save energy or water in your home?

1 Yes
2 No [SKIP TO **RR27**]
D Don't know [SKIP TO **RR27**]

RR15b What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1 Lower Heating thermostat
2 Increase air conditioner thermostat setting
3 Use fans instead of air conditioning
4 Lower water heater temperature
5 Retired or recycled a refrigerator
6 Retired or recycled a freezer
7 Turn off lights when not in use
8 Unplug electronics when not in use
9 Stop over-drying clothes
10 Reduce energy use at peak times
11 Clean refrigerator coils and gasket
12 Replace the refrigerator gasket
13 Replace or clean the AC filter
14 Replace the AC window seal
15 Replace or clean the heater filter
16 Repair faucet leaks
17 Repair toilet leaks
18 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR15C (IF REMOVE REFRIGERATOR RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you remove your extra refrigerator. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15D (IF RECYCLE REFRIGERATOR RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you recycle your old refrigerator. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15E (IF CLEANING REFRIGDERATOR COILS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you clean your refrigerator's coils. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15F (IF REPLACE REFRIGDERATOR GASKET RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace your refrigerator's gasket. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15G (IF REPLACE OR CLEAN A/C FILTER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace or clean your A/C filter. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15H (IF REPLACE A/C WINDOW SEAL RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace the A/C window seal. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15I (IF REPLACE OR CLEAN HEATER FILTER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace or clean your heater filter. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15J (IF REPAIR FAUCET LEAKS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you repair faucet leaks Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15K (IF REPAIR TOILET LEAKS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you repair toilet leaks Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

ASK RR16-RR25 FOR APPLICABLE ACTIONS RECOMMENDED

Lower Heating Thermostat

RR16 Since the Tune-up Audit, have you lowered your heating thermostat setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR16a (IF YES TO RR16) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your heating thermostat?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR16b (IF RR16a>6) Before the audit, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __

RR16c (IF RR16a>6) Before the audit, at what temperature did you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __

__

RR16d (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __

RR16e (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __

Increase Air Conditioner Thermostat Setting

RR17 Since the Tune-up audit, have you turned up your air conditioner thermostat setting so the temperature is warmer?

0 No air conditioner (SKIP TO RR19)
1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR17a (IF YES TO RR17) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn up your air conditioner thermostat setting?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR17b (IF RR17a>6) Before the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __

RR17c (IF RR17a>6) Before the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __

RR17d (IF RR17a>6) After the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __

RR17e (IF RR17a>6) After the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __

Use Fans instead of Air Conditioner

RR18 Before the Tune-up Audit, did you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18a Since the Tune-up Audit, do you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18b (IF RR18a > RR18) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use fans rather than air conditioning?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR18c (IF RR18b > 6) What type of fans do you use most often rather than air conditioning? PROBE: How many do you use? (INDICATE ALL THAT APPLY)

Lowered Water Heater Temperature

RR19 Since the Tune-up Audit, have you lowered the hot water temperature on your water heater?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR19b (IF YES TO RR19) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your hot water temperature?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR19c (IF RR19b>6) Before the audit, at what temperature did you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __

RR19d(IF RR19b>6) After the audit, at what temperature do you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __

Recycle Refrigerator

RR20 Since the Tune-up audit, have you retired or recycled an old refrigerator?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

RR20a (IF YES TO RR20) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to retire or recycle your old refrigerator?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR20b (IF RR20a>6) Where was the freezer located (mounted) on the old refrigerator?

1 Freezer was on the bottom of the refrigerator
2 Freezer was on the top of the refrigerator
3 Freezer was on the side of the refrigerator
4 Refrigerator did not have an attached freezer
D (DK)
R (REFUSED)

RR20c (IF RR20a>6) Did the old refrigerator have a through the door ice machine?

1 Yes
2 No
D (DK)
R (REFUSED)

RR20d (IF RR20a>6) During the time just before you decided to get rid of the refrigerator, was it being used as your main refrigerator, or had it been a secondary or spare?

(Interviewer: a main refrigerator is typically in the kitchen, a secondary or spare is usually kept someplace else and might or might not be running. If the person recently bought a new main refrigerator, it should be classified as "main.")

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

RR20e (IF RR20a>6) Where was it located?

1 Kitchen
2 Garage
3 Porch/Patio
4 Basement
5 Other (SPECIFY:)
D DON'T KNOW
R REFUSED

RR20f (IF RR20a>6 AND RR20d = 2) Prior to retiring this refrigerator, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

RR20g(IF RR20a>6) Did you get rid of the refrigerator(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

Retire Freezer

RR21 Since the Tune-up audit, have you retired or recycled an old freezer?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

RR21a (IF YES TO RR21) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to retire or recycle your old freezer?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR21b (IF RR21a>6) Was the old freezer a chest freezer or a stand-up unit?

1 Chest
2 Standup
D (DK)
R (REFUSED)

RR21c (IF RR21a>6) Was the old freezer a frost free unit?

1 Yes
2 No
D (DK)
R (REFUSED)

RR21d (IF RR21a>6) During the time just before you decided to get rid of the freezer, was it being used as your main freezer, or had it been a secondary or spare?

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

RR21e (IF RR21a>6) Where was it located?

1 Kitchen
2 Garage
3 Porch/Patio
4 Basement
5 Other (SPECIFY:)
D DON'T KNOW
R REFUSED

RR21f (IF RR21a>6 AND RR21d = 2) Prior to retiring this freezer, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

RR21g (IF RR21a>6) Did you get rid of the freezer(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

Turned Off Lights When Not is Use

RR22 Before receiving the Tune-up audit, did you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR22a Since you received the Tune-up audit, do you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR22b (IF R22a> RR22) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn off lights when ?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

Unplug Electronics When Not is Use

RR23 Before the Tune-up Audit, did you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR23a Since the Tune-up Audit, do you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR23b (IF RR23A > RR23) What type of electronics do you now always or sometimes unplug when not in use? (READ ONLY IF NEEDED AS EXAMPLE; INDICATE ALL THAT APPLY)

1 TV
2 DVD player
3 Cell phone chargers
4 Computer
5 Power strip
6 Electronic games
7 Stereo equipment
8 Other (SPECIFY)

RR23c (IF RR23A > RR23) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to unplug this/these electronic(s) when not in use?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Stop Overdrying Clothes

RR24 How many loads of laundry do you typically wash in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR24a There are several ways to use your clothes dryer less, including using the automatic sensor, removing clothes while still damp, or line drying them. Since the Tune-up audit, have you lowered your clothes dryer?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR24b (IF YES TO 24a) How are you using it less? (INDICATE ALL THAT APPLY)

1 Use for shorter period of time
2 Use automatic sensor
3 Line dry more often
D (DON'T KNOW)
R (REFUSED)

RR24c (IF YES TO 24a) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use your clothes dryer less?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

RR24d (IF LINE DRY MORE DUE TO AUDIT) Before the audit, how many loads of laundry did you typically line dry in a week?

__ loads
D (DON'T KNOW)
R (REFUSED)

RR24e (IF LINE DRY MORE DUE TO AUDIT) Since the audit, how many loads of laundry do you now typically line dry in a week?

__ loads
D (DON'T KNOW)
R (REFUSED)

Reduce Energy Use at Peak Times

RR25 Have you reduced the amount of energy that you use on weekdays between the high demand hours of noon to 7 PM?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR25a (IF YES TO RR25) What have you done to reduce the amount of energy that you use during these high demand times? (SPECIFY ACTIONS OR APPLIANCES TURNED OFF)

_____

RR25b (IF YES TO RR25) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on you decision to reduce the amount of energy that you use during high demand times?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Other Behavioral

RR26 (READ QUESTIONS)

Since the audit, have you . . . ?	
RR26_a Cleaned refrigerator coils and gasket more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_b Replaced the refrigerator gasket?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_c Replaced or cleaned the AC filter more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_d Replaced the AC window seal?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_e Replaced or cleaned the heater filter more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED

RR27 What benefits, if any, have you or your household received from participating in the Tune-up Audit program? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Learned how to change energy using behaviors / learned how to save energy
2 Able to share what I learned with others
3 Installed more measures on my own
4 Saved energy
5 Saved money on energy bills
6 Other (specify_____)
7 No benefits
8 Don't know

RR28 Since receiving the audit from the Community Energy Partnership program, do you feel you are just as aware or more aware of ways to save energy in your home?

1 Just as aware
2 More aware
D Don't know
R Refused

RR29 **[IF MORE AWARE]** How much more aware are you? Please rate on a 0 to 10 scale, where 0 means you are slightly more aware and 10 means you are significantly more aware.

_____

RR30 Do you feel that, as a result of what you learned about through the audit and program, you are less likely, just as likely, or more likely to consider the energy efficiency of equipment when making appliance or equipment purchases?

1 Less likely
2 Just as likely
3 More likely
D Don't know
R Refused

RR31 How likely is it that you and members of your household will continue to use the information you received through the audit and program to reduce energy use in your household? Please rate on a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely.

_____

Resource Measures—Recall, Installation

EA4 According to the records I have, the auditor provided your household **with (quantity) (equipment).** Is this correct? (ASK FOR EACH MEASURE IN DATABASE)

(IF RECALL) Did the auditor install this or leave it with you to install yourself?

Measure Type	Is this correct?	Did the auditor install or leave it with you to install?	Is this the first you've had in your home?
(QTY) Indoor Compact Fluorescent light bulb(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
(QTY) Outdoor compact fluorescent light bulb(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED

Measure Type	Is this correct?	Did the auditor install or leave it with you to install?	Is this the first you've had in your home?
(QTY) Indoor fluorescent fixture(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
(QTY) Outdoor fluorescent fixture(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
(QTY) Nightlight(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
(QTY) Torchiere(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
(QTY) Low Flow Showerhead(s)	1 Yes 2 No, wrong quantity (SPECIFY CORRECT QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	
(QTY) Faucet aerator(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	
Weather-stripping	1 Yes 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
Pipe wrap	1 Yes 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED

EA4a **(IF CFLs)** Where is this/are the CFLs the auditor provided installed in your residence? Approximately how many hours a day is this/are these bulbs normally used? (READ LIST, FILL IN BLANKS WITH QUANTITY AND HOURS OF USE)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify:_____ _____)	
(DON'T KNOW)	

EA4c **(IF NIGHTLIGHT)** Since installing the auditor-provided nightlight, have you stopped using some other light during the night?

1 Yes
2 No
D DON'T KNOW
R REFUSED

EA4d **(IF EA4c = 1)** What kind of light did you stop using? Why do response categories 1, 2 and 3 say 'nightlight'? Where did these response categories come from?

1 Incandescent nightlight
2 CFL nightlight
3 LED nightlight
4 Incandescent fixture or lamp
5 CFL fixture or lamp
D DON'T KNOW
R REFUSED

[REPEAT EA6-EA12 FOR EACH MEASURE CATEGORY R RECALLS, REGARDLESS OF WHETHER IT WAS INSTALLED BY THE AUDITOR OR NOT]

EA6 **(IF QUANTITY=1 OR IF MEASURE = WEATHERSTRIPPING OR PIPE WRAP)** Now, I would like to understand what you did with the [**measure type**]**.** Is this [**measure type**] currently installed at your home (either indoors or outdoors)? (RECORD ONE NUMBER)

1	Yes	(SKIP TO NEXT MEASURE OR W1)
2	No	
D	(DON'T KNOW)	(IF NO OTHER KNOWLEDGEABLE R, TERMINATE OR GO TO NEXT MEASURE CATEGORY)
R	(REFUSED)	(IF NO OTHER KNOWLEDGEABLE R, TERMINATE OR GO TO NEXT MEASURE CATEGORY)

EA7 (**IF QUANTITY=1 OR IF MEASURE = WEATHERSTRIPPING OR PIPE WRAP)** Which of the following best describes what happened with the [**measure type**]? (READ LIST AND RECORD ONE RESPONSE)

1	It is installed at some other location	(SKIP TO EA9)
2	It was installed at your home but is now permanently removed (example: broke, burned out, don't fit, don't like, etc.)	(SKIP TO EA10)
3	It is in storage for some other reason	(SKIP TO EA12)
4	It was sold or given away	(SKIP TO EA9)
5	Something else (SPECIFY)	(SKIP TO NEXT MEASURE)
D	(DON'T KNOW)	(SKIP TO NEXT MEASURE)
R	(REFUSED)	(SKIP TO NEXT MEASURE)

EA8 **(IF QUANTITY>1)** Now, I would like to understand what you did with the [**quantity**] [**measure type**]**.** (READ LIST, RECORD NUMBER)

a____ How many are currently installed at <u>your</u> home (either indoors or outdoors) **(IF RESPONSE=QUANTITY, SKIP TO NEXT MEASURE OR W1)**
b____ How many are installed at some other location?
c____ How many were installed at your home (either indoors or outdoors) but are now permanently removed (example: broke, burned out, don't fit, don't like, etc.)
d____ How many are in storage for some other reason?
e____ How many were sold or given away?
f____ Something else? (SPECIFY)

EA9 **(ASK IF EA7=1, EA7=4, EA8b>0, EA8e>0)** Is the/Are these [**measure type**] located in your electric or gas utility company's service territory?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

Removed Measures

(ASK ONLY IF THEY SAY THEY REMOVED A MEASURE AFTER INSTALLED, EA7=2 or EA8c>0)

EA10 Now let's talk about **[measure type]** you said was installed but has since been removed. Why was this removed? (DO NOT READ LIST, RECORD ALL THAT APPLY)

1 (Equipment failed/broke)
2 (Didn't work properly)
3 (Wrong size—too small or too large)
4 (Low water flow)
5 (Didn't like the color)
6 (Didn't like appearance/unattractive)
7 (Other, Specify:_____)
D (DON'T KNOW)
R (REFUSED)

EA11 What did you replace **[measure type]** with? (DO NOT READ LIST; PROBE FOR EFFICIENCY, RECORD ALL THAT APPLY)

1 (With a new high efficiency [**measure type**])
2 (With a less efficient [**product type**])
3 (Re-installed old equipment)
4 (Did not replace)
5 (Other, Specify: _____)
D (DON'T KNOW)
R (REFUSED)

Measures in Storage

(ASK ONLY IF THEY SAY MEASURE IS IN STORAGE FOR SOME OTHER REASON, EA7=4 or EA8d>0)

EA12 When do you think you will install the **[measure type]**? Would you say within the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now, or never?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
5 Never
D (DON'T KNOW)
R (REFUSED)

Resource Measures—Free Ridership

[FROM THIS POINT ON, INDIVIDUAL MEASURES ARE GROUPED INTO ONE OF SIX MEASURE CATEGORIES: ENERGY SAVING CFLS/LAMPS, ENERGY SAVING TORCHIERES, ENERGY SAVING FLOURESCENT FIXTURES, ENERGY SAVING NIGHTLIGHT, WATER SAVING MEASURES, WEATHERSTRIPPING AND PIPE WRAP. W2-FR12 WILL BE ASKED FOR EACH MEASURE STILL INSTALLED.]

Warm-up Questions/Background Context

W1 Please think back to the time when you decided to have the Tune-up audit, perhaps recalling things that occurred in your household shortly before and after [**timeframe**]. What factors motivated you to have the audit? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit was free
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program and/or audit
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
D DON'T KNOW
R REFUSED

[REPEAT W2-FR12 FOR EACH MEASURE CATEGORY]

[ASK W2-W3 ONLY FOR INCREMENTAL EFFICIENCY MEASURES— CFLS/LAMPS, TORCHIERES, FLOURESCENT FIXTURES, NIGHTLIGHTS]

W2 Did this **[measure]** replace existing lighting?

1 Yes
2 No [SKIP TO FR1]
D Don't Know [SKIP TO FR1]
R Refused [SKIP TO FR1]

W3 Was the old lighting working or not working?

1 Working
2 Not working
D DON'T KNOW
R REFUSED

W4 **(IF PIPE WRAP OR WEATHERSTRIPPING)** Did you have any existing pipe wrap/weatherstripping prior to the auditor's visit?

1 Yes
2 No
D DON'T KNOW
R REFUSED

W5 **(IF FAUCET AERATORS OR SHOWERHEADS)** Did you have any existing faucet aerators or low flow showerheads installed prior to the auditor's visit?

1 Yes (SPECIFY QUANTITY)
2 No
D DON'T KNOW
R REFUSED

Free-Ridership Questions

FR1 At the time that you first heard about the Tune-up Audit program, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing (**product type**)?	Y	N
b. Already begun collecting information about (**product type**)?	Y	N
c. Already decided to buy the (**product type**)?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

FR2 Just to be sure I understand, did you have specific plans to install a(n) [**product type**] before learning that you could get it free through the Tune-up Audit?

1 Yes
2 No
D DON'T KNOW
R REFUSED

[REPEAT AS NEEDED FOR FR4 PARTS A – D] If the free [measure] had not been offered through the Tune-up Audit program, would you still have . . . .

FR4a Purchased the **[product type]**?

1 Yes
2 No [SKIP TO FR5]
D DON'T KNOW
R REFUSED

FR4b Purchased the **[product type]** at approximately the same time as when the auditor installed or left it with you? (PROBE: That would be around **[date of participation]**)

1	Yes	[SKIP TO FR4C]
2	No	
D	DON'T KNOW	[SKIP TO FR4C]
R	REFUSED	[SKIP TO FR4C]

FR4b1 Would you have purchased the **[product type]** earlier than you did, or later?

1	Earlier	
2	Same Time	[REPEAT QUESTION FR4B]
3	Later	
D	DON'T KNOW	[SKIP TO FR4C]
R	REFUSED	[SKIP TO FR4C]

FR4b2 How much **[earlier/later]** would you have bought the **[product type]**?

_____ Years [and/or] _____Months
D DON'T KNOW
R REFUSED

FR4c **[IF QUANTITY > 1, OR MEASURE IS WEATHERSTRIPPING OR PIPE WRAP]** Without the Tune-up audit, would you have purchased the same quantity of [**product type**] as what the auditor installed or left with you?

1	Yes	[SKIP TO FR4D]
2	No	
D	DON'T KNOW	[SKIP TO FR4D]
R	REFUSED	[SKIP TO FR4D]

FR4c1 How many/much would you have purchased without the audit?

_____ [record number]
D DON'T KNOW
R REFUSED

FR4c2 **(IF FR4c = DK/REFUSED)** On a scale of 0 to 10, where 0 is not very likely and 10 is very likely, how likely is it that you would have purchased the same quantity of **[equipment]** as what you received through the program?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

FR4d **[FOR INCREMENTAL EFFICIENCY MEASURES – LIGHTING AND WATER SAVING DEVICES. IF, PIPE WRAP OR WEATHERSTRIPPING, SKIP]**

Would you have purchased the same efficiency of **[product type]**?

1 Yes
2 No
D DON'T KNOW
R REFUSED

FR4e If the free **[measure]** had not been available through the Tune-up program, would you have done anything else differently?

1	Yes	
2	No	[SKIP TO FR5]
D	DON'T KNOW	[SKIP TO FR5]
R	REFUSED	[SKIP TO FR5]

FR4e1 What would you have done differently?

[record response]: _____

FR5 On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have bought the same [**measure**] at the same time if you had not received it free through the Tune-up Audit program?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

FR11 On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with this statement? I would have bought [**product type**] within a year of when I did if the auditor had not installed it through the Tune-up program.

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

FR12 Please tell me in your own words what influence, if any, the program or audit had on your decision have the auditor install the **[measure]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

Participation in Other Core Programs (funneling)

M1 As part of your participation in this program, did you receive information about other utility programs?

1 Yes
2 No [SKIP TO B1]
D DK [SKIP TO B1]

M2 What information did the program give you? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Brochures about the program
2 Application forms for participating in the program
3 Assistance in filling out the application form
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3 Did you participate in any of these programs?

1 Yes
2 No [SKIP TO B1]
D DK [SKIP TO B1]

M4 Which programs? [INDICATE ALL THAT APPLY]

1 SCE Summer Discount Plan
2 Home Energy Efficiency Rebate Program
3 Multifamily Energy Efficiency Rebate Program
4 Refrigerator and Freezer Recycling Program
5 SCE Home Energy Survey
6 The Gas Company Home Energy Efficiency Survey
7 CARE Rate Discount Program
8 Family Electric Rate Assistance (FERA)
9 Energy Management Assistant program (EMA)
10 Direct Assistance Program (DAP)
11 Other (SPECIFY)

Building Characteristics

Next I'd like to ask about your home.

B1 Do you own or rent your home?

1 Own
2 Rent
3 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B2 In what type of building do you live? *(READ LIST IF NEEDED)*

1 A mobile home
2 A one-family home detached from any other house
3 A one-family home attached to one or more houses
4 A building with 2 apartments
5 A building with 3 or 4 apartments
6 A building with 5 or more apartments
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B3 About when was this building first built? *(READ LIST IF NEEDED)*

1 Before 1970's
2 1970's
3 1980's
4 1990-94
5 1995-99
6 2000's
D (DON'T KNOW)
R (REFUSED)

B4 How large is your home / [if apartment: unit] in square feet?

__ ENTER SQUARE FEET
D (DON'T KNOW)
R (REFUSED)

B4a Since the audit on **[audit date]**, has the size of your home changed?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B4b **(IF B4a = YES)** At the time of the audit, how large was your home / [if apartment: unit] in square feet?

_____ ENTER SQUARE FEET

B5 How many *floors* of living space are there in your home, NOT COUNTING unheated basements? Please answer only about *your home*, not the building as a whole]

1 1 floor
2 2 floors
3 3 floors
4 More than 3 floors
D Don't know/Not sure/Can't remember
R Refused

B6 **(SKIP IF RENT AND LIVE IN MF AND RR4r1a NOT ASKED)** At the time of the audit, were your walls insulated?

1 Yes
2 No
D Don't know
R Refused

B7 **(SKIP IF RENT AND LIVE IN MF AND RR4r1a NOT ASKED)** At the time of the audit, was your ceiling insulated?

1 Yes
2 No
D Don't know
R Refused

B8a At the time of the audit, did you heat your home with electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B9a **(IF B8a = 2)** At the time of the audit, was your home heated centrally, or was each room heated individually?

1 Central
2 Individual
D (DON'T KNOW)
R (REFUSED)

B9b **(SKIP IF RENT AND LIVE IN MF)** Was this heating system energy efficient?

1 Yes → How can you tell?_____
2 No

B9c **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, how old was your heating system?

____ AGE IN YEARS

B12a At the time of the audit, what type of fuel did your water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B12b **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, what type of water heater did you own?

1 Standard tank
2 Tankless [SKIP TO B12d]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B12c **(SKIP IF RENT AND LIVE IN MF)** Was this water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B12d **(SKIP IF RENT AND LIVE IN MF)** Was this water heater energy efficient?

1 Yes → How can you tell?_____
2 No
D Don't know
R Refused

B12e **(SKIP IF RENT AND LIVE IN MF)** At the time of the audit, how old was your water heater?

___ ENTER AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B13a (**IF REPLACED WATER HEATER AT RR4)** Previously, you said you replaced your water heater because of the auditor's recommendation. What type of fuel does the new water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B13b (IF REPLACED WATER HEATER AT RR4) Which of the following best describes the new water heater? Is it a standard tank water heater, tankless or something else?

1 Standard tank
2 Tankless [SKIP TO B16]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B13c (IF REPLACED WATER HEATER AT RR4) Is your new water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B16 (SKIP IF RENT AND LIVE IN MF) At the time of the audit, did you insulate your water heater or pipes?)NOTE: COULD INCLUDE TANK WRAP, BLANKET,ETC.)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B17a At the time of the audit, what type of air conditioning system, if any, did you use in your home? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Do not have air conditioning [SKIP TO B18a]
5 Other (Specify) _____
D (DON'T KNOW) [SKIP TO B18aB17b]
R (REFUSED) [SKIP TO B18aB17b]

[IF RENTS AND LIVES IN MF, SKIP TO B17d]

B17b Was that AC unit energy efficient?

1	Yes	
2	No	[SKIP TO B17d]
D	(DON'T KNOW)	[SKIP TO B17d
R	(REFUSED)	[SKIP TO B17d]

B17b1 Do you know what its SEER rating was?

(SEER = Seasonal Energy Efficiency Ratio)

1	Yes	(SPECIFY)	[SKIP TO B17d]
2	No		
D	(DON'T KNOW)		
R	(REFUSED)		

B17c At the time of the audit ,how old was your air conditioning unit?

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B17d At the time of the audit, which statement best describes the way your household used the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer, or something else?

1	Not used at all
2	Tuned on only a few days or nights when really needed
3	Turned on quite a bit
4	Turned on just about all summer
5	Other (SPECIFY)
D	(DON'T KNOW)
R	(REFUSED)

B18a (IF REPLACED COOLING SYSTEM AT RR4) Previously, you said that you replaced you cooling system because of the auditor's recommendation. What type of air conditioning system is the new system? (INDICATE ALL THAT APPLY)

1	Central air conditioner	
2	Room/wall air conditioner	
3	Evaporative cooler	
4	Other (Specify) _____	
D	(DON'T KNOW)	[SKIP TO B17a]
R	(REFUSED)	[SKIP TO B17a]

B18b (ONLY IF REPLACED COOLING SYSTEM AT RR4 OR RR18a>RR18)
(IF REPLACE COOLING SYSTEM AT RR4: Since replacing your cooling system)
(IF RR18a>RR18 AND DID NOT REPLACE COOLING SYSTEM: Since using fans more often) which statement best describes the way your household uses the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B23a At the time of the audit, what type of windows did you have in your home? Single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B23b (IF WINDOWS REPLACED AT RR4) What type of window frames did you have at the time of the audit?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [Define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23b2 (IF B23b = 1) Did it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23c **(IF WINDOWS REPLACED AT RR4)** What type of glass did your windows have at the time of the audit?

1 Clear
2 Tinted
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B23e **(IF WINDOWS REPLACED AT RR4)** Previously you mentioned that you replaced your windows because of the auditor's recommendation. Which of the following best describes the new type of window that you installed? Is it single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B23f **(IF WINDOWS REPLACED AT RR4)** How many windows did you replace?

__ Windows replaced
D (DON'T KNOW)
R (REFUSED)

B23g **(IF WINDOWS REPLACED AT RR4)** Did you also replace the frames at the same time you replaced the windows?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23h **(IF FRAMES REPLACED)** What type of frames did you install?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23h2 **(IF B23h = 1)** Does it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23i **(IF WINDOWS REPLACED AT RR4)** What type of glass are the new windows?

1 Clear
2 Tint
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B24 **(IF CLOTHES WASHER NOT INSTALLED AS RECOMMENDATION)**

(Just to confirm…) Do you have a clothes washer and dryer in your home?

1 Washer
2 Dryer
3 Both
4 Neither (SKIP TO D1)
D (DON'T KNOW)
R (REFUSED)

B25 **(ASK IF B24=2 OR 3)** What type of fuel does your dryer use?

1 Gas
2 Electric
D (DON'T KNOW)
R (REFUSED)

B26 **(ASK IF B24=1 OR 3)** Do you have a high efficiency front load clothes washer?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

Additional Demographics

We're almost finished. I just have a few questions about your household to make sure we're getting a representative sample of participants.

D1 Including yourself, how many people currently live in your home year-round?

_____ people
D (DON'T KNOW)
R (REFUSED)

D2 **(IF D1=1)** Which of the following best describes your age?

1 Less than 18 years old
2 18-24 years old
3 25-34 years old
4 35-44 years old
5 45-54 years old
6 55-64 years old
7 65 or older
D (DON'T KNOW)
R (REFUSED)

D3 **(IF D1>1)** Including yourself, how many people currently living in your home year-round are in the following age groups? (TOTAL SHOULD EQUAL D1)

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older
R (REFUSED)

D4 What is the highest level of education you have completed?

1 no schooling
2 less than high school
3 some high school
4 high school graduate or equivalent (e.g., GED)
5 trade or technical school
6 some college
7 college graduate degree
8 some graduate school
9 graduate degree
10 other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D5 Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .? *(READ)*

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more
D (DON'T KNOW)
R (REFUSED)

D6 Are you Spanish/Hispanic/Latino?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

D7 What is your race? *(INDICATE ALL THAT APPLY)*

1 White
2 Black, African American or Negro
3 American Indian or Alaska Native
4 Asian
5 Chinese
6 Japanese
7 Korean
8 Vietnamese
9 Filipino
10 Native Hawaiian
11 Guamanian or Chamorro
12 Samoan
13 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D8 What is the primary language spoken in your home? *(DO NOT READ)*

1 English
2 Spanish
3 Mandarin
4 Cantonese
5 Tagalog
6 Korean
7 Vietnamese
8 Russian
9 Japanese
10 Other (specify)
D (DON'T KNOW)
R (REFUSED)

RECORD GENDER

1 Male
2 Female

END THANK YOU FOR YOUR TIME.

COMMUNITY ENERGY PARTNERSHIP TUNE-UP AUDIT – SMALL BUSINESS SURVEY

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding the Energy Efficiency Tune-up Audit program you participated in. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how business uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the Tune-up audit program. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your business, and your opinions about these services. Your responses will be kept confidential.

Screening

S1 Our records indicate that around **[date]** someone from the Energy Efficiency Tune-up program came to your business to review how your business uses energy and provide recommendations on how to save energy. At the time they came into your business they provided **[equipment]**.

Do you remember this?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who might remember receiving the audit, or what they may refer to as Energy Efficiency Tune-Up?

1 Yes → Get contact name and call back or continue if available
2 No → Thank and terminate

S3 Are you the right person to talk to about information you may have received as part of the audit?

1 Yes
2 No [ASK TO SPEAK WITH CORRECT CONTACT; RESCHEDULE IF NECESSARY]

S4 Just for our records, from what utility do you buy your electricity?

1 Southern California Edison (SCE)
2 Pacific Gas & Electric (PG&E)
3 Los Angeles Department of Water and Power (LADWP)
4 Sacramento Municipal Utility District (SMUD)
5 San Diego Gas & Electric (SDG&E)
6 Other (record)
D DON'T KNOW
R REFUSED

S5 And from what utility do you buy natural gas?

1 Southern California Gas (SCG)
2 Pacific Gas & Electric (PG&E)
3 San Diego Gas & Electric (SDG&E)
4 Other (record)
D DON'T KNOW
R REFUSED

On-site Energy Audit - Background

B1 I now have a few questions about your experience with the Tune-up Audit program. How did you hear about the Tune-up audit?

1 Another program (SPECIFY PROGRAM)
2 Local government partnership activities (SPECIFY PROGRAM)
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community Sweeps
8 Community displays
9 Energy fairs
10 Friends/neighbors/relatives
11 Newspaper article
12 Website
13 Other [RECORD]
D DON'T KNOW
R REFUSED

B2a Can you tell me who sponsored this Tune-up audit? [INDICATE ALL THAT APPLY]

1 Community Energy Partnership
2 The Energy Coalition
3 SCE
4 PG&E
5 SCG/The Gas Company
6 Other
D DON'T KNOW
R REFUSED

B2b And do you recall who the auditor worked for? [INDICATE ALL THAT APPLY]

1 Community Energy Partnership
2 The Energy Coalition
3 SCE
4 PG&E
5 SCG/The Gas Company
6 Other
D DON'T KNOW/DON'T RECALL
R REFUSED

Recommended Equipment and Behavioral Measures

RR1 Did the auditor offer any specific recommendations on <u>energy efficient appliances or equipment</u> you could install in your business to make it more energy efficient?

1	Yes	
2	No	[SKIP TO RR2b]
D	DON'T KNOW	[SKIP TO RR2b]
R	REFUSED	[SKIP TO RR2b]

RR2a What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1 Install an energy efficient refrigerator
2 Add tinted window film
3 Add interior shades/blinds
4 Add exterior awnings
5 Add window caulking
6 Add weather stripping
7 Add door shoe
8 Add attic exhaust fan
9 Add a white roof
10 Replace windows
11 Replace water heater
12 Install pre-rinse spray valves
13 Install an energy efficient dishwasher
14 Replace heating system
15 Replace cooling system
16 Installed/retrofitted lighting
17 Add/improve insulation
18 Other (specify)
D DON'T KNOW
R REFUSED

RR2b **[IF REPLACE REFRIGERATOR RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you install an energy efficient refrigerator. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2c **[IF TINTED WINDOW FILM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you add tinted window film. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2d **[IF INTERIOR SHADES/DRAPES RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you add interior shades and/or drapes. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2e **[IF EXTERIOR AWNINGS RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you add exterior awnings. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2f **[IF WINDOW CAULKING RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you caulk your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2g **[IF WEATHER STRIPPING RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you add weather stripping. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2h **[IF DOOR SHOE RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you add a door shoe. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2i **[IF ATTIC EXHAUST FAN RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you install an attic exhaust fan. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2j **[IF WHITE ROOF RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you install a white roof. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2k **[IF WINDOWS RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you replace your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2l **[IF WATER HEATER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2a]** Our records show that the auditor recommended that you install an energy efficient water heater. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

[IF RR1 = NO, DK, REF AND NO RECOMMEDATION RECALLED IN RR2 SERIES, SKIP TO RR15]

RR3 Have you installed any of the energy saving appliances or equipment that the auditor recommended?

1 Yes
2 No [SKIP TO RR14]
D DON'T KNOW [SKIP TO RR14]

RR4 What have you installed? [RECORD ALL THAT APPLY]

1 Install an energy efficient refrigerator
2 Add tinted window film
3 Add interior shades/blinds
4 Add exterior awnings
5 Add window caulking
6 Add weather stripping
7 Add door shoe
8 Add attic exhaust fan
9 Add a white roof
10 Replace windows
11 Replace water heater
12 Install a pre-rinse spray valve
13 Install an energy efficient dishwasher
14 Replace heating system
15 Replace cooling system
16 Installed/retrofitted lighting
17 Add/improve insulation
18 Other (specify)
D DON'T KNOW
R REFUSED

(IF NEW REFRIGERATOR)

RR4a1 Is the new refrigerator a display refrigerator? (INTERVIEWER: THIS IS A SEE-THROUGH REFRIGERATOR OF GLASS)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF NEW REFRIGERATOR AND A DISPLAY)

RR4a2 Is the display refrigerator vertical or horizontal?

1 Vertical
2 Horizontal
D (DON'T KNOW)
R (REFUSED)

(NEW REFRIGERTOR AND NOT DISPLAY REFRIGERATOR)

RR4a3 Is there a freezer attached to the new refrigerator?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(NEW REFRIGERATOR AND FREEZER ATTACHED)

RR4a4 Where is the freezer located?

1 Freezer is on the bottom of the refrigerator
2 Freezer is on the top of the refrigerator
3 Freezer is on the side of the refrigerator
4 Refrigerator does not have an attached freezer
5 Other (Specify)
D DON'T KNOW
R REFUSED

(IF NEW REFRIGERATOR AND NOT A DISPLAY)

RR4a5 Does your new refrigerator have a through the door ice machine, through the door water dispenser, both or neither?

1 Ice machine only
2 Water dispenser only
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

(IF NEW REFRIGERATOR)

RR4a6 What is the size of the new refrigerator in cubic feet?

1 ____ size in cubic feet
D (DON'T KNOW)
R (REFUSED)

(IF NEW REFRIGERATOR)

RR4a7 How old was the refrigerator replaced?

1 _____ age in years
D (DON'T KNOW)
R (REFUSED)

(IF WINDOW FILM)

RR4b1 What color is the window film you installed?

1 Amber
2 Silver
3 Nickel
4 Neutral
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF WINDOW FILM)

RR4b2 On what percentage of your windows did you install the film?

ENTER PERCENT OF WINDOWS__
D (DON'T KNOW)
R (REFUSED)

(IF INTERIOR SHADES/BLINDS)

RR4c1 What type of shades or blinds did you purchase?

1 Drapes or curtains
2 Horizontal blinds
3 Vertical blinds
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF INTERIOR SHADES/BLINDS)

RR4c2 What time of the day do you typically keep these shades/blinds drawn or closed? (READ LIST IF NECESSARY. INDICATE ALL THAT APPLY)

1 All the time
2 Early morning (6:00 AM-9:00 AM)
3 Late morning (9:00 AM-11:00 AM)
4 Noon (11:00 AM-1:00 PM)
5 Mid-afternoon (1:00 PM-3:00 PM)
6 Late afternoon (3:00 PM-5:00 PM)
7 Early evening (5:00 PM-7:00 PM)
8 Late evening (7:00-MORNING)
9 Not at all
10 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF INTERIOR SHADES/BLINDS)

RR4c3 On what percent of windows did you install these shades/drapes?

ENTER PERCENT OF WINDOWS __
D (DON'T KNOW)
R (REFUSED)

(IF EXTERIOR AWNINGS)

RR4d1 What size are the awnings you installed?

ENTER SIZE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

(IF EXTERIOR AWNINGS)

RR4d2 How high are the awnings above the windows?

ENTER DISTANCE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

(IF EXTERIOR AWNINGS)

RR4d3 How far do the awnings extend outward?

ENTER DISTANCE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

(IF EXTERIOR AWNINGS)

RR4d4 On what percent of your windows did you install these awnings?

ENTER PERCENT OF WINDOWS __
D (DON'T KNOW)
R (REFUSED)

(IF WEATHERSTRIPPING)

RR4f1 What percent of your perimeter doors are treated with weatherstripping?

1 _____ Percent Doors
D (DON'T KNOW)
R (REFUSED)

(IF ATTIC EXHAUST FAN)

RR4h1 What size is the attic exhaust fan that you installed?

ENTER SIZE IN INCHES __
D (DON'T KNOW)
R (REFUSED)

(IF ATTIC EXHAUST FAN OR WHITE ROOF)

RR4h2 What type of roof did you have at the time of the audit?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF ATTIC EXHAUST FAN OR WHITE ROOF)

RR4h3 What color was the roof?

1 Aluminum paint
2 Black
3 Brown
4 Gray
5 Green
6 Orange
7 Red
8 Silver
9 White
10 Yellow
11 Other (SPECIFY)
12 Don't know
13 Refused

(IF WHITE ROOF)

RR4h4 What type of roof do you now have?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF WHITE ROOF)

RR4h5 What color is the roof now?

1 Aluminum paint
2 Black
3 Brown
4 Gray
5 Green
6 Orange
7 Red
8 Silver
9 White
10 Yellow
11 Other (SPECIFY)
12 Don't know
13 Refused

(IF WINDOWS)

RR4i1 Which of the following best describes the windows before being replaced? Were they single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane - → Are the windows air filled or argon filled?
3 Triple pane - → Are the windows air filled or argon filled?
4 Quadruple pane - → Are the windows air filled or argon filled?
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

(IF WINDOWS)

RR4i2 What type of glass were the windows before being replaced?

1 Clear
2 Tint
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF WINDOWS)

RR4i3 What percent of you windows were replaced?

__ Percent windows replaced
D (DON'T KNOW)
R (REFUSED)

(IF WINDOWS)

RR4i4 Did you also replace the frames at the same time you replaced the windows?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF FRAMES REPLACED)

RR4i5 What type of frames were installed before they were replaced?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [define]
6 Other
D (DON'T KNOW)
R (REFUSED)

(IF RR4i5 = 1)

RR4i6 Did it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF WATER HEATER)

RR4j1 Previously, you said you replaced your water heater because of the auditor's recommendation. What type of fuel did the old water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

(IF WATER HEATER)

RR4j2 Which of the following best describes your old water heater? Was it a standard tank water heater, tankless or something else?

1 Standard tank
2 Tankless [SKIP TO RR4k1]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

(IF WATER HEATER)

RR4j3 Was the old water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DON'T KNOW)
R (REFUSED)

(IF DISHWASHER)

RR4k1 What type of dishwasher did you install?

1 Under counter
2 Door type
3 Single tank
4 Multi-tank
5 Residential dishwasher
6 Other (Specify)
D (DON'T KNOW)
R (REFUSED)

(IF DISHWASHER)

RR4k2 Is the dishwasher a high-temperature dishwasher?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF DISHWASHER)

RR4k3 Do you have a booster water heater?

1 Yes
2 No [SKIP]
D (DON'T KNOW)
R (REFUSED)

(IF DISHWASHER)

RR4k4 What type of fuel does your booster water heater use? (INDICATE ALL THAT APPLY)

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

(IF DISHWASHER)

RR4k5 Approximately how many times do you run your dishwasher each day?

1 _____ RECORD TIMES
D (DON'T KNOW)
R (REFUSED)

(IF HEATING SYSTEM)

RR4l1 Previously you said you replaced your heating system because of the auditor's recommendation. Which of the following best describes the fuel the old system used to heat your business? Was it electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

(IF HEATING SYSTEM)

RR4l2 Was this heating system energy efficient?

1 Yes → How can you tell?_____
2 No
D (DON'T KNOW)

(IF HEATING SYSTEM)

Rr4l3 How old was the heating system you replaced

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

(IF COOLING SYSTEM)

RR4m1 Previously, you said that you replaced you cooling system because of the auditor's recommendation. At the time of the audit, what type of air conditioning system, if any, did you use in your business? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Direct expansion air conditioner
5 Chilled water, electric
6 Chilled water, gas (absorption)
7 Do not have air conditioning [SKIP TO RR4n1]
8 Other (Specify) _____
D (DON'T KNOW) [SKIP TO RR4n1]
R (REFUSED) [SKIP TO RR4n1]

(IF COOLING SYSTEM)

RR4m2 Was that AC unit energy efficient?

1 Yes
2 No [SKIP TO RR4n1]
D (DON'T KNOW) [SKIP TO RR4n1
R (REFUSED) [SKIP TO RR4n1]

(IF COOLING SYSTEM)

RR4m3 Do you know what its SEER rating was?

(SEER = Seasonal Energy Efficiency Ratio)

1 Yes (SPECIFY) [SKIP TO RR4n1]
2 No
D (DON'T KNOW)
R (REFUSED)

(IF COOLING SYSTEM)

RR4m4 At the time of the audit, how old was your air conditioning unit?

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

(IF COOLING SYSTEM)

RR4m5 At the time of the audit, which statement best describes the way your business used the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer, or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF LIGHTING)

RR4n1 What type of lighting did you install after the audit? (SELECT ALL THAT APPLY)

1 CFLs
2 Occupancy sensors
3 LED exit signs
4 Indoor fixture
5 Outdoor fixture
6 T5
7 T8
8 T12
9 Daylight bulbs
10 Other (SPECIFY)
11 (DON'T KNOW)
12 (REFUSED)

(FOR EACH LIGHTING MENTIONED ABOVE)

RR4n2 How many **[light type]** did you install?

1 ENTER NUMBER _____
D (DON'T KNOW)
R (REFUSED)

(IF LIGHTING AND CFLS IN RR4n1)

RR4n3 On average, what was the wattage of the CLFs you installed? For example, 13 watts, 20 watts, 23 watts, or 30 watts?

1 ENTER WATTAGE _____
D (DON'T KNOW)
R (REFUSED)

(IF CFLS IN RR4n1)

RR4n4 On average, what was the wattage of the bulbs or fixtures you replaced with CFLs? For example, 60 watt, 75 watts, or three-watt bulb.

1 ENTER WATTAGE _____
D (DON'T KNOW)
R (REFUSED)

(IF T5, T8, OR T12 IN RR4n1)

RR4n5 On average, what was the length of the fixtures you installed? For example, 4 foot or 8 foot fixtures.

1 ENTER LENGTH _____
D (DON'T KNOW)
R (REFUSED)

(IF T5, T8, OR T12 IN RR4n1)

RR4n6 What type of lights did they replace? (RECORD OPEN RESPONSE)

(FOR EACH TYPE OF LIGHT MENTIONED ABOVE)

RR4n7 What percentage of business hours are these lights on?

1 ENTER PERCENTAGE _____
D (DON'T KNOW)
R (REFUSED)

(FOR EACH TYPE OF LIGHT MENTIONED ABOVE)

RR4n8 What percentage of after-hours are these lights on?

1 ENTER PERCENTAGE _____
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED OR IMPROVED)

RR4o1 Did you add insulation in the walls, the ceiling or both?

1 Wall Only
2 Ceiling Only
3 Both
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH)

RR4o2 Did you have insulation in the walls before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH AND PREVIOUSLY HAD INSULATION IN WALLS)

RR4o3 What was the R value of the wall insulation previously?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH)

RR4o4 And how many walls did you insulate?

__ NUMBER OF WALLS INSULATED
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO CEILINGS

RR4o5 Did you have insulation in the ceilings before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO CEILINGS OR BOTH AND PREVIOUSLY HAD INSULATION IN THE CEILINGS)

RR4o6 What was the R value of the ceiling insulation previously?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

(IF INSULATION AND RR4o6 = DK/REFUSED)

RR4o7 How many inches of ceiling insulation did you have before you added more?

__ ENTER INCHES OF INSULATION
77 (DON'T KNOW)
99 (REFUSED)

(IF PRE-RINSE SPRAY VALVE)

RR4p1 How many pre-rinse spray valves did you replace?

1 ENTER NUMBER _____
D (DON'T KNOW)
R REFUSED)

RR5 Please think back to the time when you decided purchase the equipment referred to you by the auditor, perhaps recalling things that occurred in your business shortly before and after **[DATE]**. What factors motivated you to purchase this equipment?

[DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit was free/recommendation
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the auditor
8 Because of past experience with another utility program
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Part of a remodeling project
16 Other (SPECIFY)
D DON'T KNOW
R REFUSED

(ASK FOR EACH MEASURE INSTALLED)

RR6 Did you receive a rebate for this **[installed measure**] through a local utility program? ? (If say yes, follow up: Which program?)

1 Yes-→Which program? _____
2 No
D DK
R REFUSED

[ASK RR7-RR8 ONLY FOR EACH MEASURE <u>NOT</u> INSTALLED THROUGH UTILITY PROGRAM - RR6 = 2,D or R. IF REBATE RECEIVED, SKIP TO RR13a]

RR7 (REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR4 = 1, 10-15) Now I'd like to ask some additional questions about the equipment you purchased.

Is the new **[installed measure**] energy efficient?

1 Yes
2 No [SKIP TO NEXT MEASURE OR RR14]
D DK [SKIP TO NEXT MEASURE OR RR14]
R REFUSED [SKIP TO NEXT MEASURE OR RR14]

(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR7=1)

RR8 How do you know that this equipment is energy efficient?

(PROBE: IS IT ENERGY STAR® RATED? INDICATE ALL THAT APPLY)

1 It is ENERGY STAR® rated
2 It is the brand and model that the auditor recommended
3 The rating (SPECIFY)
4 The sales person told me it was
5 It was new
6 Other (SPECIFY)
D DON'T KNOW
R REFUSED

(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 11-15)

RR9a Did the new **[installed measure**] replace existing equipment?

1 Yes
2 No [SKIP TO RR10]
D DK [SKIP TO RR10]
R REFUSED [SKIP TO RR10]

(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 11-15)

RR9b Was the old **[product type]** working or not working?

1 Working
2 Not working [SKIP TO RR10]
D DON'T KNOW [SKIP TO RR10]
R REFUSED [SKIP TO RR10]

(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 11-15)

RR9c Was the old **[product type]** in good, fair, or poor working condition?

1 Good
2 Fair
3 Poor
D DON'T KNOW
R REFUSED

RR10a Do you recall what month and year you purchased the new **[installed equipment]**?

_____ month
D DON'T KNOW
R REFUSED

_____ year
D DON'T KNOW
R REFUSED

(IF DON'T KNOW MONTH IN RR10a)

RR10b Do you recall if it was during the winter, spring, summer or fall?

1 Winter
2 Spring
3 Summer
4 Fall
D DON'T KNOW
R REFUSED

Free Ridership

RR11 At the time that the auditor recommended **(installed equipment)**, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing (**installed equipment**)?		Y	N
b. Already begun collecting information about (**installed equipment**)?	Y	N	
c. Already decided to buy the (**installed equipment**)?	Y	N	
d. (DON'T READ) Other (SPECIFY)	Y	N	

RR12 Just to be sure I understand, did you have specific plans to install **[installed equipment]** before the auditor recommended it?

1 Yes
2 No
D DON'T KNOW
R REFUSED

RR13a What influence, if any, the auditor's recommendation have on your decision to purchase and install the **[installed equipment]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

RR13b Please rate the influence on a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, that the auditor's recommendation had on your decision to purchase and install **[installed equipment]**?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

(IF INSTALLED ALL RECOMMENDATIONS, SKIP TO RR15)

RR14a Do you have plans to install any of the other equipment or appliances that were recommended by the audit within the next two years?

1 Yes
2 No [SKIP TO RR15]
D Don't know [SKIP TO RR15]

RR14b What do you plan to install? (RECORD ALL THAT APPLY)

1 Install an energy efficient refrigerator
2 Add tinted window film
3 Add interior shades/drapes
4 Add Exterior awnings
5 Add window caulking
6 Add weather stripping
7 Add door shoe
8 Add attic exhaust fan
9 Add a white roof
10 Replace windows
11 Replace water heater
13 Install an energy efficient dishwasher
14 Replace heating system
15 Replace cooling system
16 Installed/retrofitted lighting
17 Add/improve insulation
18 Install a pre-rinse spray valve
19 Other (specify)
D DON'T KNOW
R REFUSED

(REPEAT FOR EACH PIECE OF EQUIPMENT MENTIONED AT RR14b)

RR14c When do you plan to install a **[fill equipment from RR14b]**? Would you say in the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
D Don't Know
R Refused

Recommended Behavioral Measures—Recall, Action and Free Ridership

RR15a Did the auditor offer specific recommendations on inexpensive changes or behavior changes you could take to save energy or water in your business?

1 Yes
2 No [SKIP TO EA4]
D Don't know [SKIP TO EA4]

RR15b What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1 Lower heating thermostat
2 Increase air conditioner thermostat setting
3 Use fans instead of air conditioning
4 Lower water heater temperature
5 Retired or recycled a refrigerator
6 Retired or recycled a freezer
7 Turn off lights when not in use
8 Use lighting occupancy sensor
9 Unplug electronics when not in use
10 Reduce energy use at peak times
11 Clean refrigerator coils and gasket
12 Replace the refrigerator gasket
13 Perform refrigeration maintenance
14 Replace or clean the AC filter
15 Replace the AC window seal
16 Replace or clean the heater filter
17 Repair faucet leaks
18 Repair toilet leaks
19 Other (SPECIFY)
D DON'T KNOW
R REFUSED

ASK RR16-RR25 FOR APPLICABLE ACTIONS RECOMMENDED

Lower Heating Thermostat

RR16 Since the Tune-up Audit, have you lowered your heating thermostat setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF YES TO RR16)

RR16a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your heating thermostat?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

(IF RR16a>6)

RR16b Before the audit, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

(IF RR16a>6)

RR16c After the audit, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

(IF RR16a>6)

RR16d Before the audit, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

(IF RR16a>6)

RR16e After the audit, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

Increase Air Conditioner Thermostat Setting

RR17 Since the Tune-up audit, have you turned up your air conditioner thermostat setting so the temperature is warmer?

0 No air conditioner (SKIP TO RR19)
1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF YES TO RR17)

RR17a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn up your air conditioner thermostat setting?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

(IF RR17a>6)

RR17b Before the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

(IF RR17a>6)

RR17c After the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

(IF RR17a>6)

RR17d Before the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

(IF RR17a>6)

RR17e After the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

Use Fans instead of Air Conditioner

RR18 Before the Tune-up Audit, did you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18a Since the Tune-up Audit, do you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

(IF RR18a > RR18)

RR18b On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use fans rather than air conditioning?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

(IF RR18b > 6)

RR18c What type of fans do you use most often rather than air conditioning? PROBE: How many do you use? (INDICATE ALL THAT APPLY)

1 Box fan
2 Oscillating table fan
3 Oscillating floor fan
4 Ceiling fan
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF RR18b > 6)

RR18d How many do you use?

ENTER NUMBER

__ Box fans
__ Oscillating table fans
__ Oscillating floor fans
__ Ceiling fans
__ Other

Lowered Water Heater Temperature

RR19 Since the Tune-up Audit, have you lowered the hot water temperature on your water heater?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF YES TO RR19)

RR19b On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your hot water temperature?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

(IF RR19b>6)

RR19c Before the audit, at what temperature did you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __
D DON'T KNOW
R REFUSED

(IF RR19b>6)

RR19d After the audit, at what temperature do you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __
D DON'T KNOW
R REFUSED

Recycle Refrigerator

RR20 Since the Tune-up audit, have you retired or recycled an old refrigerator?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

(IF YES TO RR20)

RR20a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to retire or recycle your old refrigerator?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

(IF RR20a>6)

RR20b Where was the freezer located (mounted) on the old refrigerator?

1 Freezer was on the bottom of the refrigerator
2 Freezer was on the top of the refrigerator
3 Freezer was on the side of the refrigerator
4 Refrigerator did not have an attached freezer
D (DK)
R (REFUSED)

(IF RR20a>6)

RR20c Did the old refrigerator have a through the door ice machine?

1 Yes
2 No
D (DK)
R (REFUSED)

(IF RR20a>6)

RR20d During the time just before you decided to get rid of the refrigerator, was it being used as your main refrigerator, or had it been a secondary or spare?

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

(IF RR20a>6 AND RR20d = 2)

RR20e Prior to retiring this refrigerator, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

(IF RR20a>6)

RR20f Did you get rid of the refrigerator(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

RR20g Approximately how large was this/were these refrigerators, in cubic feet?

1 _____ size in cubic feet
D (DON'T KNOW)
R (REFUSED)

(IF RR20g=DK)

Rr20h Could you tell me approximately how high, wide, and deep the refrigerator was in feet?

1 Yes can provide dimensions
2 No, don't know
R Refused

RR20i-RR20k

___ Height
___ Width
___ Depth

RR20l How old was this/were these refrigerators, in years?

1 ____ Years old
D (DON'T KNOW)
R (REFUSED)

Retire Freezer

RR21 Since the Tune-up audit, have you retired or recycled an old freezer?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

(IF YES TO RR21)

RR21a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to retire or recycle your old freezer?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

(IF RR21a>6)

RR21b Was the old freezer a chest freezer or a stand-up unit?

1 Chest
2 Standup
D (DK)
R (REFUSED)

(IF RR21a>6)

RR21c Was the old freezer a frost free unit?

1 Yes
2 No
D (DK)
R (REFUSED)

(IF RR21a>6)

RR21d During the time just before you decided to get rid of the freezer, was it being used as your main freezer, or had it been a secondary or spare?

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

(IF RR21a>6 AND RR21d = 2)

RR21e Prior to retiring this freezer, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

(IF RR21a>6)

RR21f Did you get rid of the freezer(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

(IF RR21a>6)

RR21g Approximately how large was this/were these freezers, in cubic feet?

1 _____ size in cubic feet
D (DON'T KNOW)
R (REFUSED)

(IF RR21g=DK)

Rr21h Could you tell me approximately how high, wide, and deep the refrigerator was in feet?

1 Yes can provide dimensions
2 No, don't know
R Refused

RR21i-RR21k

___ Height
___ Width
___ Depth

(IF RR21a>6)

RR21l How old was this/were these freezers, in years?

1 ____ Years old
D (DON'T KNOW)
R (REFUSED)

Turned Off Lights When Not is Use

RR22 Before receiving the Tune-up audit, did you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR22a Since you received the Tune-up audit, do you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

(IF R22a> RR22)

RR22b On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn off lights when you leave a room??

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

(IF R22b > 6)

RR22c On average, how many additional hours a day are the lights now turned off because you turn them off when you leave the room?

ENTER NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

(IF R22b > 6)

RR22d What is the wattage of the most common type of light fixture in your business?

ENTER WATTAGE __
D (DON'T KNOW)
R (REFUSED)

Unplug Electronics When Not is Use

RR23 Before the Tune-up Audit, did you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR23a Since the Tune-up Audit, do you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)

R (REFUSED)

(IF UNPLUG THE SAME AMOUNT OR LESS FREQUENTLY, OR RR23 < RR23a, SKIP TO RR24)

RR23b What type of electronics do you now always or sometimes unplug when not in use? (READ ONLY IF NEEDED AS EXAMPLE; INDICATE ALL THAT APPLY)

1 TV
2 DVD player
3 Cell phone chargers
4 Computer
5 Power strip
6 Electronic games
7 Stereo equipment
8 Other (SPECIFY)

(FOR ALL MENTIONED IN RR23b)

RR23c How many [FILL APPLIANCE] are unplugged?

1 _____ ENTER NUMBER
D (DON'T KNOW)
R REFUSED)

RR23d What hours of the day are they typically unplugged?
(READ LIST IF NECESSARY. INDICATE ALL THAT APPLY)

1 All the time
2 Early morning (6:00 AM-9:00 AM)
3 Late morning (9:00 AM-11:00 AM)
4 Noon (11:00 AM-1:00 PM)
5 Mid-afternoon (1:00 PM-3:00 PM)
6 Late afternoon (3:00 PM-5:00 PM)
7 Early evening (5:00 PM-7:00 PM)
8 Late evening (7:00-MORNING)
9 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR23e And what days of the week?
(INDICATE ALL THAT APPLY)

1 Sunday
2 Monday
3 Tuesday
4 Wednesday
5 Thursday
6 Friday
7 Saturday
D (DON'T KNOW)
R (REFUSED)

RR23f On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to unplug this/these electronic(s) when not in use?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Use Occupancy Sensors

RR24 What percentage of lit space is controlled by occupancy sensors?

1 _____ PERCENT LIT SPACE
D (DON'T KNOW)
R (REFUSED)

RR24a What percentage of the time are the lights off that otherwise would have been on during primary operating hours?

1 _____ PERCENT OF PRIMARY OPERATING HOURS
D (DON'T KNOW)
R (REFUSED)

RR24b What percentage of the time are the lights off that otherwise would have been on during non-operating hours?

1 _____ PERCENT OF PRIMARY OPERATING HOURS
D (DON'T KNOW)
R (REFUSED)

Reduce Energy Use at Peak Times

RR25 Have you reduced the amount of energy that you use on weekdays between the high demand hours of noon to 7 PM?

1	Yes	
2	No	(SKIP TO RR26)
D	(DON'T KNOW)	(SKIP TO RR26)
R	(REFUSED)	(SKIP TO RR26)

(IF YES TO RR25)

RR25a What have you done to reduce the amount of energy that you use during these high demand times? (SPECIFY ACTIONS OR APPLIANCES TURNED OFF)

_____

(IF YES TO RR25)

RR25b On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on you decision to reduce the amount of energy that you use during high demand times?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Other Behavioral

RR26 (READ QUESTIONS)

Since the audit, have you . . . ?	
RR26_a Cleaned refrigerator coils and gasket more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_b Replaced the refrigerator gasket?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_c Replaced or cleaned the AC filter more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_d Replaced the AC window seal?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_e Replaced or cleaned the heater filter more often than you did before the audit?	1 Yes 2 No D DON'T KNOW R REFUSED
RR26_f Performed maintenance on the refrigeration in your business?	1 Yes 2 No D DON'T KNOW R REFUSED

RR27 What benefits, if any, have you or your business received from participating in the Tune-up Audit program? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Learned how to change energy using behaviors / learned how to save energy
2 Able to share what I learned with others
3 Installed more measures on my own
4 Saved energy
5 Saved money on energy bills
6 Other (specify_____)
7 No benefits
8 Don't know

RR28 Since receiving the audit from the Community Energy Partnership program, do you feel you are just as aware or more aware of ways to save energy in your business?

1 Just as aware
2 More aware
D Don't know
R Refused

(IF MORE AWARE)

RR29 How much more aware are you? Please rate on a 0 to 10 scale, where 0 means you are slightly more aware and 10 means you are significantly more aware.

_____

RR30 Do you feel that, as a result of what you learned about through the audit and program, you are less likely, just as likely, or more likely to consider the energy efficiency of equipment when making appliance or equipment purchases?

1 Less likely
2 Just as likely
3 More likely
D Don't know
R Refused

RR31 How likely is it that you and your employees will continue to use the information you received through the audit and program to reduce energy use in your business? Please rate on a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely.

_____

Resource Measures—Recall, Installation

EA1 According to the records I have, the auditor provided your business with **(quantity) (equipment)**. Is this correct? (ASK FOR EACH MEASURE IN DATABASE)

(IF RECALL) Did the auditor install this or leave it with you to install yourself?

Measure Type	**Is this correct?**	**Did the auditor install or leave it with you to install?**	**Is this the first you've had in your business?**
(QTY) Indoor Compact Fluorescent light bulb(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
(QTY) Outdoor compact fluorescent light bulb(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D DON'T KNOW R REFUSED	1 Auditor installed 2 Left with me to install D DON'T KNOW R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED)

Measure Type	Is this correct?	Did the auditor install or leave it with you to install?	Is this the first you've had in your business?
(QTY) Indoor fluorescent fixture(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
(QTY) Faucet aerator(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	
Weather-stripping	1 Yes 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
Pipe wrap	1 Yes 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
LED Exit	1 Yes 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
Pre-rinse spray valve	1 Yes 3 No, did not receive any D (DON'T KNOW) R (REFUSED)	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R (REFUSED)	1 Yes 2 No D (DON'T KNOW) R (REFUSED)

[REPEAT EA2-EA8 FOR EACH MEASURE CATEGORY R RECALLS, REGARDLESS OF WHETHER IT WAS INSTALLED BY THE AUDITOR OR NOT]

(IF QUANTITY=1 OR IF MEASURE = WEATHERSTRIPPING OR PIPE WRAP)

EA2 Now, I would like to understand what you did with the [**measure type**]. Is this [**measure type**] currently installed at your business (either indoors or outdoors)? (RECORD ONE NUMBER)

1	Yes	(GO TO NEXT MEASURE CATEGORY)
2	No	
D	(DON'T KNOW)	(GO TO NEXT MEASURE CATEGORY)
R	(REFUSED)	(GO TO NEXT MEASURE CATEGORY)

(IF QUANTITY=1 OR IF MEASURE = WEATHERSTRIPPING OR PIPE WRAP)

EA3 Which of the following best describes what happened with the [**measure type**]? (READ LIST AND RECORD ONE RESPONSE)

1	It is installed at some other location	(SKIP TO EA9)
2	It was installed at your business but is now permanently removed (example: broke, burned out, don't fit, don't like, etc.)	(SKIP TO EA10)
3	It is in storage for some other reason	(SKIP TO EA12)
4	It was sold or given away	(SKIP TO EA9)
5	Something else (SPECIFY)	(SKIP TO NEXT MEASURE)

D (DON'T KNOW) (SKIP TO NEXT MEASURE)
R (REFUSED) (SKIP TO NEXT MEASURE)

(IF QUANTITY>1)

EA4 Now, I would like to understand what you did with the [**quantity**] [**measure type**]. (READ LIST, RECORD NUMBER)

a____ How many are currently installed at <u>your</u> business (either indoors or outdoors) **(IF RESPONSE=QUANTITY, SKIP TO NEXT MEASURE OR W1)**
b____ How many are installed at some other location?
c____ How many were installed at your business (either indoors or outdoors) but are now permanently removed (example: broke, burned out, don't fit, don't like, etc.)
d____ How many are in storage for some other reason?
e____ How many were sold or given away?
f____ Something else? (SPECIFY)

(ASK IF EA3=1, EA3=4, EA4b>0, EA4e>0)

EA5 Is the/Are these [**measure type**] located in your electric or gas utility company's service territory?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

Removed Measures

(ASK ONLY IF THEY SAY THEY REMOVED A MEASURE AFTER INSTALLED, EA3=2 or EA4c>0)

EA6 Now let's talk about [**measure type**] you said was installed but has since been removed. Why was this removed? (DO NOT READ LIST, RECORD ALL THAT APPLY)

1 (Equipment failed/broke)
2 (Didn't work properly)
3 (Wrong size—too small or too large)
4 (Low water flow)
5 (Didn't like the color)
6 (Didn't like appearance/unattractive)
7 (Other, Specify:_____)
D (DON'T KNOW)
R (REFUSED)

EA7 What did you replace [**measure type**] with? (DO NOT READ LIST; PROBE FOR EFFICIENCY, RECORD ALL THAT APPLY)

1 (With a new high efficiency [**measure type**])
2 (With a less efficient [**product type**])
3 (Re-installed old equipment)
4 (Did not replace)
5 (Other, Specify: _____)
D (DON'T KNOW)
R (REFUSED)

Measures in Storage

(ASK ONLY IF THEY SAY MEASURE IS IN STORAGE FOR SOME OTHER REASON, EA3=4 or EA4d>0)

EA8 When do you think you will install the [**measure type**]? Would you say within the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now, or never?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
5 Never
D (DON'T KNOW)
R (REFUSED)

[FROM THIS POINT ON, INDIVIDUAL MEASURES ARE GROUPED INTO ONE OF EIGHT MEASURE CATEGORIES: 1) CFLS/LAMPS, 2) FLOURESCENT FIXTURES, 3) FAUCET AERATORS, 4) WEATHERSTRIPPING, 5) PIPE & WATER HEATER WRAP, 6) LED EXIT SIGNS, 7) PRE-RINSE SPRAY VALVES AND 8) CEILING FANS . W2-FR12 WILL BE ASKED FOR ALL MEASURE CATEGORIES STILL INSTALLED.]

Warm-up Questions/Background Context

W1 Please think back to the time when you decided to have the Tune-up audit, perhaps recalling things that occurred in your business shortly before and after [**timeframe**]. What factors motivated you to have the audit? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit was free
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program and/or audit
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
D DON'T KNOW
R REFUSED

[REPEAT W2-FR12 FOR EACH MEASURE CATEGORY INSTALLED.]

[ASK W2-W3 ONLY FOR INCREMENTAL EFFICIENCY MEASURES— CFLS/LAMPS, , FLOURESCENT FIXTURES,]

W2 Did this **[measure]** replace existing lighting?

1 Yes
2 No [SKIP TO W4]
D Don't Know [SKIP TO W4]
R Refused [SKIP TO W4]

W3 Was the old lighting working or not working?

1 Working
2 Not working
D DON'T KNOW

R REFUSED

(IF PIPE WRAP OR WEATHERSTRIPPING)

W4 Did you have any existing pipe wrap or weather-stripping prior to the auditor's visit?

1 Yes
2 No
D DON'T KNOW
R REFUSED

(IF FAUCET AERATORS)

W5a Did you have any existing faucet aerators installed prior to the auditor's visit?

1 Yes (SPECIFY QUANTITY)
2 No
D DON'T KNOW
R REFUSED

W5b How many did you replace?

1 _____SPECIFY QUANTITY)
D DON'T KNOW
R REFUSED

W5c What percent were installed in bathroom sinks, and what percent were installed in kitchen sinks?

1 _____ Percent installed bathroom
2 _____ Percent installed in kitchen
D (DON'T KNOW)
R (REFUSED)

Free-Ridership Questions

FR1 At the time that you first heard about the Tune-up Audit program, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing **(product type)**?	Y	N
b. Already begun collecting information about **(product type)**?	Y	N
c. Already decided to buy the **(product type)**?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

FR2 Just to be sure I understand, did you have specific plans to install a(n) **[product type]** before learning that you could get it free through the Tune-up Audit?

1 Yes
2 No
D DON'T KNOW
R REFUSED

FR3a **[REPEAT AS NEEDED FOR FR4 PARTS A – D]** If the free **[measure]** had not been offered through the Tune-up Audit program, would you still have . . .

Purchased the **[product type]**?

1	Yes	
2	No	[SKIP TO FR4]
D	DON'T KNOW	
R	REFUSED	

FR3b Purchased the **[product type]** at approximately the same time as when the auditor installed or left it with you? (PROBE: That would be around **[date of participation]**)

1	Yes	[SKIP TO FR3c]
2	No	
D	DON'T KNOW	[SKIP TO FR3c]
R	REFUSED	[SKIP TO FR3c]

FR3b1 Would you have purchased the [**product type]** earlier than you did, or later?

1	Earlier	
2	Same Time	[REPEAT QUESTION FR3b]
3	Later	
D	DON'T KNOW	[SKIP TO FR3b]
R	REFUSED	[SKIP TO FR3b]

FR3b2 How much **[earlier/later]** would you have bought the **[product type]**?

_____ Years [and/or] _____Months
D DON'T KNOW
R REFUSED

[IF QUANTITY > 1, OR MEASURE IS WEATHERSTRIPPING OR PIPE WRAP]

FR3c Without the Tune-up audit, would you have purchased the same quantity of **[product type]** as what the auditor installed or left with you?

1	Yes	[SKIP TO FR3d]
2	No	
D	DON'T KNOW	[SKIP TO FR3d]
R	REFUSED	[SKIP TO FR3d]

FR3c1 How many/much would you have purchased without the audit?

_____ [record number]
D DON'T KNOW
R REFUSED

(IF FR3c = DK/REFUSED)

FR3c2 On a scale of 0 to 10, where 0 is "not very likely" and 10 is "very likely," how likely is it that you would have purchased the same quantity of **[equipment]** as what you received through the program?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

[FOR INCREMENTAL EFFICIENCY MEASURES – LIGHTING AND WATER SAVING DEVICES. IF PIPE WRAP OR WEATHERSTRIPPING, SKIP]

FR3d Would you have purchased the same efficiency of [**product type**]?

1 Yes
2 No
D DON'T KNOW
R REFUSED

FR3e If the free **[measure]** had not been available through the Tune-up program, would you have done anything else differently?

1	Yes	
2	No	[SKIP TO FR4]
D	DON'T KNOW	[SKIP TO FR4]
R	REFUSED	[SKIP TO FR4]

FR3e1 What would you have done differently?

[Record response]: _____

FR4 On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have bought the same **[measure]** at the same time if you had not received it free through the Tune-up Audit program?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

FR11 On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with this statement? I would have bought [**product type**] within a year of when I did if the auditor had not installed it through the Tune-up program.

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

FR12 Please tell me in your own words what influence, if any, the program or audit had on your decision have the auditor install the **[measure]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

Participation in Other Core Programs (funneling)

M1 As part of your participation in this program, did you receive information about other utility programs?

1 Yes
2 No [SKIP TO B1]
D DK [SKIP TO B1]

M2 What information did the program give you? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Brochures about the program
2 Application forms for participating in the program
3 Assistance in filling out the application form
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3 Did you participate in any of these programs?

1 Yes
2 No [SKIP TO CC1]
D DK [SKIP TO CC1]

M4 Which programs?

RECORD PROGRAMS

_____

Building Characteristics

Now, I'd like to ask you questions regarding your facility.

CC1 How many square feet of heated or cooled floor area is your facility?

__ Enter square footage **(SKIP TO CC3)**
D (DON'T KNOW)
R (REFUSED)

CC2 Would you say that the heated or cooled floor area is ...?
(READ UNTIL RESPONDENT SAYS YES)

1 < 1,500 sqft
2 1,500 - 5,000 sqft
3 5,000 - 10,000 sqft
4 10,000 – 25,000 sqft
5 25,000 – 50,000 sqft
6 50,000 – 75,000 sqft
7 75,000 – 100,000 sqft
8 > 100,000 sqft CC4
D (DON'T KNOW)
R (REFUSED)

CC3 Has the square footage of the facility increased, decreased or remained the same since January 2004?

1 Increased (SKIP TO CC4)
2 Decreased (SKIP TO CC5)
3 Stayed the same(SKIP TO CC8)
D (DON'T KNOW) (SKIP TO CC8)
R (REFUSED) (SKIP TO CC8)

CC4 How many square feet were added?
__ Enter square feet (SKIP TO CC6)
D (DON'T KNOW) (SKIP TO CC6)
R (REFUSED) (SKIP TO CC6)

CC5 By how many square feet was the facility reduced?
__ Enter square feet
D (DON'T KNOW)
R (REFUSED)

CC6 What year did this change in square feet occur?

(IF DON'T KNOW, ASK FOR BEST GUESS)

1	2005	
2	2006	
3	2007	
4	2008	
D	(DON'T KNOW)	(SKIP TO CC8)
R	(REFUSED)	(SKIP TO CC8)

CC7 What month did this change in square feet occur? If you can not get month, try to get the season.

(IF DON'T KNOW, ASK FOR BEST GUESS)

1	January
2	February
3	March
4	April
5	May
6	June
7	July
8	August
9	September
10	October
11	November
12	December
13	Fall
14	Winter
15	Spring
16	Summer
D	(DON'T KNOW)
R	(REFUSED)

CC8 How many stories tall is the facility?

__	Enter number of stories
D	(DON'T KNOW)
R	(REFUSED)

CC9a What type of fuel does your water heater use? (INDICATE ALL THAT APPLY)

1	Gas
2	Electric
3	Propane
4	Solar
5	Other (Specify) _____
D	(DON'T KNOW)
R	(REFUSED)

CC9b What type of water heater do you own?

1 Standard tank
2 Tankless
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

CC9c Is this water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

CC9d Is this water heater energy efficient?

1 Yes → How can you tell?_____
2 No
D Don't know
R Refused

CC9e How old is your water heater?

___ ENTER AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

CC10a Is this facility heated with gas, electric, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

CC10b What is the main type of equipment is used to heat the facility? (INDICATE ALL THAT APPLY)

1 Furnace
2 Electric resistance
3 Heat pump
4 Hot water coils
5 Other (Please record)
D (DON'T KNOW)
R (REFUSED)

CC11a What is the main type of equipment is used to cool this facility? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Direct expansion
4 Chilled water
5 Evaporative cooler
6 Do not have air conditioning
7 Other (Please record)
D (DON'T KNOW)
R (REFUSED)

(IF HAVE COOLING EQUIPMENT)

B11b Which statement best describes the way your business uses the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

CC12a Does your facility have roof insulation?

1	Yes	
2	No	(SKIP TO CC13a)
D	(DON'T KNOW)	(SKIP TO CC13a)
R	(REFUSED)	(SKIP TO CC13a)

CC12b What is the R value or thickness of the roof insulation?

1 Enter R value _____
2 Enter thickness in inches _____
3 Other (Please record)
D (DON'T KNOW)
R (REFUSED)

CC13a Does your facility have wall insulation?

1	Yes	
2	No	(SKIP TO CC14a)
D	(DON'T KNOW)	(SKIP TO CC14a)
R	(REFUSED)	(SKIP TO CC14a)

CC13b What is the R value or thickness of the wall insulation?

1 Enter R value _____
2 Enter thickness in inches _____
3 Other (Please record)
D (DON'T KNOW)
R (REFUSED)

CC14a Does your facility have ceiling insulation?

1	Yes	
2	No	(SKIP TO CC15)
D	(DON'T KNOW)	(SKIP TO CC15)
R	(REFUSED)	(SKIP TO CC15)

CC14b What is the R value or thickness of the ceiling insulation?

1 Enter R value _____
2 Enter thickness in inches _____
3 Other (Please record)
D (DON'T KNOW)
R (REFUSED)

CC14c And what percent of your ceiling is insulated?

__ ENTER PERCENT OF ATTIC INSULATED
D (DON'T KNOW)
R (REFUSED)

CC15 In what year was the facility built?

__ ENTER YEAR (SKIP TO CC17)
D (DON'T KNOW)
R (REFUSED)

CC16 Would you say it was…
(READ LIST UNTIL R SAYS YES)

1 After 2000
2 In the 1990's
3 1980s
4 1970s
5 1960s
6 1950
7 Before 1950
D (DON'T KNOW)
R (REFUSED)

CC17 In general, what type of windows do you have in your business? Single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

CC18 What type of window frames do you have?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Other
D (DON'T KNOW)
R (REFUSED)

(IF CC18 = 1)
CC19 Do most of the windows have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

CC20 What type of glass do your windows have?

1 Clear
2 Tinted
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

CC21 What is the main business ACTIVITY at your facility? (FOR ALL ACTIVITY QUESTIONS PROMT BY READING OPTIONS IF NECESSARY)

1 Community Center
2 Conference/convention center
3 Health (fitness, inpatient, outpatient)
4 Lodging (hotel/motel)
5 Manufacturing, general
6 Manufacturing, bio-tech
7 Museum
8 Office building (high-rise, mid-rise, etc.)
9 Religious worship
10 Restaurant (full-service, bar/lounge, etc.)
11 Retail (department store, convenience store, etc.)
12 School (preschool, high school, etc.)
13 Storage
14 Theatre
15 Other (Please specify)
D (DON'T KNOW)
R (REFUSED)

CC21a (IF HEALTH) What type of health facility?

1 Outpatient hospital
2 Inpatient clinic
3 Long-term care (nursing home)
4 Other (Please record)
D Don't know
R Refused

CC21b (IF LODGING) What type of lodging?

1 Motel
2 High-rise hotel
3 Other (Please record)
D Don't know
R Refused

CC21c (IF OFFICE BUILDING) What type of office building?

1 High-rise
2 Mid-rise
3 Two story
4 Bank/financial
5 Other (Please record)
D Don't know
R Refused

CC21d (IF RESTAURANT) What type of restaurant?

1 Full service (full menu)
2 Fast food
3 Bar/lounge
4 Other (Please record)
D Don't know
R Refused

CC21e (IF RETAIL) What type of building is your retail facility?

1 Department store (120,000 square feet)
2 Large single storey (70,000 square feet)
3 Stand-alone structure (5,000 square feet)
4 Single storefront (2,500 square feet)
5 Strip mall
6 Service station
7 Convenience store
8 Warehouse sales
9 Other (Please record)
D Don't know
R Refused

CC21f (IF SCHOOL) What type of school?

1 Preschool/daycare
2 Elementary
3 Middle
4 High
5 College/university
6 Other (Please record)
D Don't know
R Refused

CC21g (IF STORAGE) What type of storage facility?

1 Conditioned high-bay
2 Conditioned low-bay
3 Unconditioned low-bay
4 Other (Please record)
D Don't know
R Refused

CC22 Approximately how many people are currently working at the facility, including individuals either full- or part-time

(IF DON'T KNOW ASK FOR BEST GUESS)
__ Enter number of people
D (DON'T KNOW)
R (REFUSED)

CC23 Since January 2006 has the number of people working at this facility changed by more than 10%?

1 Yes
2 No (SKIP TO CC25)
D (DON'T KNOW)
R (REFUSED)

CC24 In 2005 approximately how many people were working at this facility, including both full- or part-time employees?

(IF DON'T KNOW ASK FOR BEST GUESS)

__ Enter number of people
D (DON'T KNOW)
R (REFUSED)

CC25 Thinking back to 2005, were any changes made to the facility during 2003 that would change the energy consumption by more than 10%?

1 Yes
2 No (SKIP TO CC29)
D (DON'T KNOW) (SKIP TO CC29)
R (REFUSED) (SKIP TO CC29)

CC26 What changes were made? (RECORD RESPONSE)

CC27 Would these changes have increased or decreased consumption?

1 Increased
2 Decreased
D (DON'T KNOW)
R (REFUSED)

CC28 During what season did these changes take place?

1 Fall
2 Winter
3 Spring
4 Summer
D (DON'T KNOW)
R (REFUSED)

[SKIP IF RR4o2 ASKED]

CC29 At the time of the audit, were your walls insulated?

1 Yes
2 No
D Don't know
R Refused

[SKIP IF RR4o5 ASKED]

CC30 At the time of the audit, was your ceiling insulated?

1 Yes
2 No
D Don't know
R Refused

CC31 At the time of the audit, did you insulate your water heater or pipes? [NOTE: COULD INCLUDE TANK WRAP, BLANKET,ETC.)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

CC32 Does your business own, lease or manage the facility?

1 Own
2 Lease/Rent
3 Manage
D (DON'T KNOW)
R (REFUSED)

Additional Firmagraphics

HR025 Now we'd like to talk about the hours that your business is open. Are you typically open every day, Monday through Friday?

1 Yes (SKIP TO HR030b)
2 No
D (DON'T KNOW) (SKIP TO HR030b)
R (REFUSED)

HR026 How many days are you closed Monday through Friday?

1 1
2 2
3 3
4 4
5 5
D (DON'T KNOW)
R (REFUSED)

HR030b What time do you open during the week?

__ Enter time (use 24 hour format eg 0700)
D (DON'T KNOW)
R (REFUSED)

HR030c What time do you close during the week?

__ Enter time (use 24 hour format eg 0700)
D (DON'T KNOW)
R (REFUSED)

[ASK IF ^HR030B=65, ELSE SKIP TO HR050]

HR040 How about Saturdays?

1	Open 24 Hrs	(SKIP TO HR050)
2	Never on	(SKIP TO HR050)
3	Open part of the day	
4	Same as weekday schedule	(SKIP TO HR050)
5	Open by appointment	(SKIP TO HR050)
D	(DON'T KNOW)	(SKIP TO HR050)
R	(REFUSED)	(SKIP TO HR050)

HR040b On Saturday you are open from:

__ Enter time (use 24 hour format eg 0700)
D (DON'T KNOW) (SKIP TO HR050)
R (REFUSED) (SKIP TO HR050)

HR040c On Saturday you are open until:

__ Enter time (use 24 hour format eg 0700)
D (DON'T KNOW)
R (REFUSED)

HR050 And Sundays?

1	Open 24 Hrs	(SKIP TO B50)
2	Closed	(SKIP TO B50)
3	Open part of the day	
4	Same as Saturday schedule	(SKIP TO B50)
5	Same as Weekday schedule	(SKIP TO B50)
6	Open by appointment	(SKIP TO B50)
D	(DON'T KNOW)	(SKIP TO B50)
R	(REFUSED)	(SKIP TO B50)

HR050b On Sunday you are open from:

__ Enter time (use 24 hour format eg 0700)
D (DON'T KNOW) (SKIP TO B50)
R (REFUSED) (SKIP TO B50)

HR050c On Sunday you are open until:

__	Enter time (use 24 hour format eg 0700)	
D	(DON'T KNOW)	(SKIP TO B50)
R	(REFUSED)	(SKIP TO B50)

B50 And what is your title at **[company]**?

Enter verbatim resposne

_____

END **THANK YOU FOR YOUR TIME.**

California Youth Energy Services Audit – Residential Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding the Energy Efficiency Tune-up Audit program you participated in. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how business uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the Tune-up audit program. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your business, and your opinions about these services. Your responses will be kept confidential.

Screening

S1 Our records indicate that around **[date]** a team from the California Youth Energy Services audit program came to your home to review how your home uses energy and provided recommendations on how to save energy in your home. At the time they came into your home they provided **[equipment]**.

Do you remember this?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who might remember receiving the home audit, or what they may refer to as California Youth Energy Services program?

1 Yes → Get contact name and call back or continue if available
2 No → Thank and terminate

S3 Are you the right person to talk to about information you may have received as part of the home audit?

1 Yes
2 No [ASK TO SPEAK WITH CORRECT CONTACT; RESCHEDULE IF NECESSARY]

In-home Energy Audit

Background

EA1 I now have a few questions about your experience with the audit program. How did you hear about the Youth Energy Services audit?

1 Another program (SPECIFY PROGRAM)
2 Local government partnership activities (SPECIFY PROGRAM)
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community Sweeps
8 Community displays
9 Energy fairs
10 Friends/neighbors/relatives
11 Newspaper article
12 Website
13 Other [RECORD]
D (DON'T KNOW)
R (REFUSED)

EA2 Can you tell me who sponsored this audit? [INDICATE ALL THAT APPLY]

1 California Youth Energy Services
2 Rising Sun
3 PG&E
4 Marin County Energy Watch
5 East Bay Energy Watch
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

EA2b And do you recall who the auditor worked for? [INDICATE ALL THAT APPLY]

1 California Youth Energy Services
2 Rising Sun
3 PG&E
4 Marin County Energy Watch
5 East Bay Energy Watch
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

Recommended Equipment and Behavioral Measures—Recall, Action, Free Ridership and Spillover

RR1 As part of the audit, did the auditor offer specific recommendations on energy efficient appliances or equipment you could install in your home to make it more energy efficient?

(INTERVIEWER: IF R MENTIONS DIRECT INSTALL MEASURE GIVEN BY AUDITOR, FOLLOW WITH "Thank you. We'll be talking about that equipment later in the interview.")

1 Yes
2 No [SKIP TO RR2B]
D (DON'T KNOW) [SKIP TO RR2B]

RR2A **(IF NECESSARY)** What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

INTERVIEWER NOTE: IF SAY 'INSTALL ENERGY STAR APPLIANCES' PROBE FOR SPECIFIC APPLIANCES.

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Install ENERGY STAR appliances (in general)
16 Other (specify)
D (DON'T KNOW)
R (REFUSED)

RR2B [IF ENERGY EFFICIENT REFRIGERATOR RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an energy efficient refrigerator. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2C [IF PIPE WRAP, WATER HEATER PIPES, OR WATER HEATER BLANKET RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install pipe wrap and insulate your water heater. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2D [IF WINDOW CAULKING OR WEATHER STRIPPING RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you caulk your windows or install weather stripping. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2E [IF WINDOWS RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you replace your windows. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2F [IF WATER HEATER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an energy efficient water heater. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2G [IF CLOTHES WASHER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an energy efficient clothes washer. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2H [IF EE DISHWASHER RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install an energy efficient dishwasher. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2I [IF HEATING SYSTEM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install a new heating system. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2J [IF COOLING SYSTEM RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install a new cooling system. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2K [IF CFL RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install compact fluorescent light bulbs or CFLs. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2L [IF INSULATION RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you add or improve your home's insulation. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2M [IF WATER SAVING DEVICES RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install faucet aerators or low-flow showerheads. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR2N [IF ENERGY STAR APPLIANCES RECOMMENDED IN SAMPLE AND NOT MENTIONED AT RR2A] Our records show that the auditor recommended that you install energy star appliances. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

[IF RR1 = NO, DK, REF AND NO RECOMMEDATION RECALLED IN RR2 SERIES, SKIP TO RR15]

RR3 Have you installed any of the energy saving appliances or equipment that the auditor recommended?

1 Yes
2 No [SKIP TO RR14]
D (DON'T KNOW) [SKIP TO RR14]

RR4 What have you installed? [RECORD ALL THAT APPLY]

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Other (specify)
D (DON'T KNOW)
R (REFUSED)

RR4b **(IF NEW REFRIGERATOR)** Where is the freezer located on the new refrigerator?

1 Freezer is on the bottom of the refrigerator
2 Freezer is on the top of the refrigerator
3 Freezer is on the side of the refrigerator
4 Refrigerator does not have an attached freezer
D (DON'T KNOW)
R (REFUSED)

RR4c **(IF NEW REFRIGERATOR)** Does your new refrigerator have a through the door ice machine, through the door water dispenser, both or neither ?

1 Ice machine only
2 Water dispenser only
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

RR4d **(IF NEW CLOTHES WASHER)** How many loads of laundry do you typically wash in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR4e How many loads of laundry do you typically dry in a week?

____ loads
D (DON'T KNOW)
R (REFUSED)

RR4f **(IF CFLs)** I am going to read a list of rooms in your home. Please tell me the number of CFLs in these rooms.

(READ LIST, FILL IN BLANKS WITH QUANTITY)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify)	
(DON'T KNOW)	

RR4fw On average, what was the wattage of the bulbs you replaced with CFLs? For example, 60 watt, 75 watts, or three-watt bulb.

ENTER WATTAGE _____
D (DON'T KNOW)
R (REFUSED)

RR4r (IF INSULATION ADDED OR IMPROVED) Did you add insulation in the walls, the attic or ceiling or both?

1 Wall Only
2 Attic or Ceiling Only
3 Both
D (DON'T KNOW)
R (REFUSED)

RR4r1a (IF INSULATION ADDED TO WALLS OR BOTH) Did you have insulation in the walls before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1b (IF INSULATION ADDED TO WALLS OR BOTH AND PREVIOUSLY HAD INSULATION IN WALLS) What was the R value of the wall insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r1c (IF INSULATION ADDED TO WALLS OR BOTH) What is the current R value of the wall insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r1d (IF INSULATION ADDED TO WALLS OR BOTH) And how many walls did you insulate?

__ NUMBER OF WALLS INSULATED
D (DON'T KNOW)
R (REFUSED)

RR4r2a (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH)
Did you have insulation in the attic or ceilings before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR4r2b (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH AND PREVIOUSLY HAD INSULATION IN THE ATTIC/CEILINGS)

What was the R value of the attic insulation previously?

__ R VALUE

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH)

What is the current R value of the attic insulation?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

RR4r2b2 (IF RR4r2b = DK/REFUSED)

How many inches of attic insulation did you have before you added more?

__ ENTER INCHES OF INSULATION

77 (DON'T KNOW)
99 (REFUSED)

RR4r2c2 (IF RR4r2c = DK/REFUSED)

How many inches of insulation would you say are now in the attic?

__ ENTER INCHES OF INSULATION
77 (DON'T KNOW)
99 (REFUSED)

RR4r2d (IF INSULATION ADDED TO ATTIC/CEILINGS OR BOTH) And what percent of your attic is insulated?

__ ENTER PERCENT OF ATTIC INSULATED
D (DON'T KNOW)
R (REFUSED)

RR5 Please think back to the time when you decided to purchase the equipment referred to you by the auditor perhaps recalling things that occurred in your household shortly before and after **[date]**. What factors motivated you to purchase this equipment?

[DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit recommendation
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the auditor
8 Because of past experience with another utility program
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Part of a remodeling project
16 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR6 **(ASK FOR EACH MEASURE INSTALLED)** Did you receive a rebate for this **[installed measure**] through a local utility program? (If say yes, follow up: Which program?)

1 Yes-→Which program? _____
2 No
D DK
R REFUSED

(ASK RR7-RR8 ONLY FOR EACH MEASURE <u>NOT</u> INSTALLED THROUGH UTILITY PROGRAM - RR6 = 2,D or R. IF REBATE RECEIVED, SKIP TO RR13a)

Now I'd like to ask some additional questions about the equipment you purchased.

RR7 **(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR4 = 1, 6-11)** Is the new **[installed measure**] energy efficient?

1 Yes
2 No [SKIP TO NEXT MEASURE OR RR14]
D DK [SKIP TO NEXT MEASURE OR RR14]
R REFUSED [SKIP TO NEXT MEASURE OR RR14]

RR8 **(REPEAT QUESTION FOR EACH INSTALLED MEASURE IF RR7=1)** How do you know that this equipment is energy efficient? (PROBE: IS IT ENERGY STAR® RATED? INDICATE ALL THAT APPLY)

1 It is ENERGY STAR® rated
2 It is the brand and model that the auditor recommended
3 The rating (SPECIFY)
4 The sales person told me it was
5 It was new
6 Other (SPECIFY)
D DON'T KNOW
R REFUSED

RR9 **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 7-11)** Did the new **[installed measure**] replace existing equipment?

1	Yes	
2	No	[SKIP TO RR10]
D	DK	[SKIP TO RR10]
R	REFUSED	[SKIP TO RR10]

RR9c **(ASK FOR EACH INSTALLED MEASURE IF RR4 RR4 = 1, 7-11)** Was the old **[product type]** working or not working?

1	Working	
2	Not working	[SKIP TO RR10]
D	(DON'T KNOW)	[SKIP TO RR10]
R	(REFUSED)	[SKIP TO RR10]

RR9d **(ASK FOR EACH INSTALLED MEASURE IF RR4 = 1, 7-11)** Was the old **[product type]** in good, fair, or poor working condition?

1 Good
2 Fair
3 Poor
D (DON'T KNOW)
R (REFUSED)

RR10 Do you recall what month and year you purchased the new **[installed equipment]**?

__	Month	__	Year
D	(DON'T KNOW)	D	(DON'T KNOW)
R	(REFUSED)	R	(REFUSED)

RR10b (IF (DON'T KNOW) MONTH IN RR10) Do you recall if it was during the winter, spring, summer or fall?

1 Winter
2 Spring
3 Summer
4 Fall
D (DON'T KNOW)
R (REFUSED)

Free Ridership

RR11 At the time that the auditor recommended **[installed equipment]**, had you . . . ? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing (**installed equipment**)?	Y	N
b. Already begun collecting information about (**installed equipment**)?	Y	N
c. Already decided to buy the (**installed equipment**)?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

RR12 Just to be sure I understand, did you have specific plans to install [**installed equipment]** before the auditor recommended it?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR13b What influence, if any, the auditor's recommendation have on your decision to purchase and install the **[installed equipment]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

RR13a Please rate the influence on a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, that the auditor's recommendation had on your decision to purchase and install **[installed equipment]**?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

[IF INSTALLED ALL RECOMMENDATIONS, SKIP TO RR15]

RR14 Do you have plans to install any of the other equipment or appliances that were recommended by the audit within the next two years?

1 Yes
2 No [SKIP TO RR15]
D (DON'T KNOW) [SKIP TO RR15]

RR14b What do you plan to install? [RECORD ALL THAT APPLY AND SPECIFY NUMBER OF MONTHS BEFORE INSTALL]

1 Install an energy efficient refrigerator
2 Install pipe wrap on water heater pipes
3 Install water heater blanket
4 Add window caulking
5 Add weather stripping
6 Replace windows
7 Replace water heater
8 Install an energy efficient clothes washer
9 Install an energy efficient dishwasher
10 Replace heating system
11 Replace cooling system
12 Install CFLs
13 Add or improve insulation
14 Install faucet aerators/low-flow showerheads
15 Install ENERGY STAR appliances
16 Other (specify)
D (DON'T KNOW)
R (REFUSED)

RR14c (REPEAT FOR EACH PIECE OF EQUIPMENT MENTIONED AT RR14b) When do you plan to install a **[fill equipment from RR14b]**? Would you say in the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
D Don't Know
R Refused

Recommended Behavioral Measures—Recall, Action and Free Ridership

RR15A Did the auditor offer specific recommendations on inexpensive changes or behavior changes you could take to save energy or water in your home?

1 Yes
2 No [SKIP TO RR15C]
D (DON'T KNOW) [SKIP TO RR15C]

RR15b What recommendations did the auditor make? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1	Lower heating thermostat	14	Use task lighting
2	Increase AC thermostat setting	15	Take shorter showers
3	Use fans instead of air conditioning	16	Wash clothes in cold waters
4	Lower water heater temperature	17	Wash and dry clothes with a full load only
5	Turn off lights when not in use	18	Use clothesline
6	Stop overdrying clothes	19	Use energy savings button on refrigerator
7	Clean refrigerator coils and gasket	20	Set refrigerator dial to middle setting
8	Replace or clean the AC filter	21	Reduce water pressure
9	Replace or clean the heater filter	22	Unplug electronics when not in use or use power strips
10	Repair faucet leaks		
11	Repair toilet leaks	23	Turn off faucets
12	Fix duct leaks	24	Other (SPECIFY)
13	Close shades in the summer	25	DON'T KNOW
		26	REFUSED

RR15C (IF USE FANS INSTEAD OF AIR CONDITIONING RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you use fans instead of air conditioning. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15D (IF LOWER WATER HEATER TEMPERATURE RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you lower your water heater temperature. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15E (IF REPLACE OR CLEAN THE AC FILTER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace or clean your AC filter. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15F (IF REPLACE OR CLEAN THE HEATER FILTER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you replace or clean your heater filter. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15G (IF FIX DUCT LEAKS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that fix any duct leaks. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15H (IF CLOSE SHADES IN THE SUMMER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you closet shades in the summer. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15I (IF USE TASK LIGHTING RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you use task lighting instead of general lighting. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15J (IF USE ENERGY SAVINGS BUTTON ON REFRIGERATOR RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that use the energy savings button on your refrigerator. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15K (IF TURNING OFF LIGHTS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you turn off lights and other electronics when not in use. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15L (IF FIXING WATER LEAKS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you fix water leaks in your home. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15M (IF REDUCING WATER PRESSURE RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you reduce your home's water pressure. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15N (IF CLEANING REFRIGDERATOR COILS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you clean your refrigerator's coils. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15O(IF **USING LESS WATER** RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you turn off faucets or take shorter showers to use less water. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15P (IF ADJUSTING THERMOSTAT RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you adjust your thermostat in the summer and winter. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15Q (IF POWERSTRIPS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you use power strips or unplug electronics to avoid "phantom" loads. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15R (IF USING CLOTHES DRYER LESS RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you use your clothes dryer less. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15S (IF REDUCING REFRIGERATOR TEMPERATURES RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you reduce the temperature in your refrigerator or freezer. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR15T (IF USING COLD WATER SETTING ON CLOTHES WASHER RECOMMENDED AND NOT MENTIONED ABOVE) Our records show that the auditor recommended that you use the cold water setting on your clothes washer. Is that correct?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

ASK RR16-RR25 FOR APPLICABLE ACTIONS RECOMMENDED

Lower Heating Thermostat

RR16 Since the Youth Energy Services audit, have you lowered your heating thermostat setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR16a (IF YES TO RR16) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your heating thermostat?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

RR16b (IF RR16a>6) Before the audit, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR16c (IF RR16a>6) Before the audit, at what temperature did you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

__

RR16d (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR16e (IF RR16a>6) After the audit, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

Increase Air Conditioner Thermostat Setting

RR17 Since the Youth Energy Services audit, have you turned up your air conditioner thermostat setting so the temperature is warmer?

0 No air conditioner (SKIP TO RR19)
1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR17a (IF YES TO RR17) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn up your air conditioner thermostat setting?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

RR17b (IF RR17a>6) Before the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR17c (IF RR17a>6) Before the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

RR17d (IF RR17a>6) After the audit, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D (DON'T KNOW)
R (REFUSED)

RR17e (IF RR17a>6) After the audit, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D (DON'T KNOW)
R (REFUSED)

Use Fans instead of Air Conditioner

RR18 Before the Youth Energy Services audit, did you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18a Since the Youth Energy Services audit, do you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR18b **(IF RR18a > RR18)** On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use fans rather than air conditioning?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R REFUSED

RR18c **(IF RR18b > 6)** What type of fans do you use most often rather than air conditioning? (INDICATE ALL THAT APPLY)

1 Box fan
2 Oscillating table fan
3 Oscillating floor fan
4 Ceiling fan
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR18d **(IF RR18b > 6)** How many do you use?

ENTER NUMBER

__ Box fans
__ Oscillating table fans
__ Oscillating floor fans
__ Ceiling fans
__ Other

Lowered Water Heater Temperature

RR19 Since the Youth Energy Services audit, have you lowered the hot water temperature on your water heater?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR19b **(IF YES TO RR19)** On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to lower your hot water temperature?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR19c **(IF RR19b>6)** Before the audit, at what temperature did you set your hot water heater? ?

ENTER TEMPERATURE IN DEGREES __
D (DON'T KNOW)
R (REFUSED)

RR19d **(IF RR19b>6)** After the audit, at what temperature do you set your hot water eater?

ENTER TEMPERATURE IN DEGREES __
D (DON'T KNOW)
R (REFUSED)

Turned Off Lights When Not is Use

RR22 Before receiving the Youth Energy Services audit, did you always, sometimes or rarely turn off lights when you left a room?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR22a Since you received the Youth Energy Services audit, do you always, sometimes or rarely turn off lights when you leave a room?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR22b (IF R22a> RR22) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn off lights when you leave a room?

RECORD RESPONSE (0-10) __

D (DON'T KNOW)
R (REFUSED)

RR22c (IF RR22b > 6) After the audit, in what rooms did you start turning off the lights when you were not in them? (DO NOT READ, CHECK ALL THAT APPLY)

1 Living/family room
2 Dining room
3 Den/Office
4 Kitchen
5 Bedrooms
6 Bathrooms
7 Closets
8 Hallways
9 Attic
10 Basement
11 Garage
12 Yard/Outside
13 Other (specify)
14 Don't know

RR22d (REPEAT FOR EACH ROOM MENTIONED IN RR22c) On average, how many additional hours a day are the lights in **[room]** now turned off because you turn them off when you leave the room?

ENTER NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

RR22e (REPEAT FOR EACH ROOM MENTIONED IN RR22c) What is the wattage of the most common type of light fixture in your **[room]**?

ENTER WATTAGE __
D (DON'T KNOW)
R (REFUSED)

Close Shades in the Summer

RR41a (CLOSE SHADES IN THE SUMMER) Before the audit, did you always, sometimes or rarely close the shades on your windows in the summer?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR41b (CLOSE SHADES IN THE SUMMER) After the audit, did you always, sometimes or rarely close the shades on your windows in the summer?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR41c (IF RR41a > RR41b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to close window shades in the summer?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR41d (IF RR41c > 6) On average, what time of day do you close the shades in the summer?

__:__ ENTER TIME
D (DON'T KNOW)
R (REFUSED)

RR41e (IF RR41c > 6) And on average, on how many windows did you close the shades?

__ ENTER NUMBER OF WINDOWS
D (DON'T KNOW)
R (REFUSED)

Take Shorter Showers

RR42a (IF TAKE SHORTER SHOWERS) Before the audit, in your household, how long was the average shower?

__ ENTER LENGTH IN MINUTES
D (DON'T KNOW)
R (REFUSED)

RR42b (IF TAKE SHORTER SHOWERS) After the audit, in your household, how long was the average shower?

__ ENTER LENGTH IN MINUTES
D (DON'T KNOW)
R (REFUSED)

RR42c (IF RR42a > RR42b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to take shorter showers?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR42d (IF RR42c > 6) On an average day, how many showers are taken in your household?

__ ENTER AVERAGE NUMBER OF SHOWERS
D (DON'T KNOW)
R (REFUSED)

Stop Overdrying Clothes

RR24a (IF STOP OVERDRYING CLOTHES RECOMMENDED) There are several ways to use your clothes dryer less, including using the automatic sensor, removing clothes while still damp, or line drying them. Since the youth audit, have you used your clothes dryer less?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR24b (IF YES TO RR24a) How are you using it less? (INDICATE ALL THAT APPLY)

1 Use for shorter period of time
2 Use automatic sensor
3 Line dry more often
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

RR24c (IF YES TO RR24a) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use your clothes dryer less?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

Use Clothesline

RR24d (IF LINE DRY MORE DUE TO AUDIT) Before the audit, how many loads of laundry did you typically line dry in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

RR24e (IF LINE DRY MORE DUE TO AUDIT) Since the audit, how many loads of laundry do you now typically line dry in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

RR24f (IF RR24d < RR24e) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to line dry your laundry?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

Wash Laundry in Cold Water

RR43a (IF WASH CLOTHES IN COLD WATER) Before the audit, did you always, sometimes or rarely wash your clothes in cold water?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR43b (IF WASH CLOTHES IN COLD WATER) After the audit, did you always, sometimes or rarely wash your clothes in cold water?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR43c (IF RR43a > RR43b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to take wash your clothes in cold water?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Wash and Dry Full Load Only

RR44a (IF LAUNDER FULL LOAD ONLY) Before the audit, did you always, sometimes or rarely wash and dry a full load of laundry? A full load of laundry is considered filling your washing machine to or near capacity.

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR44b (IF LAUNDER FULL LOAD ONLY) After the audit, did you always, sometimes or rarely wash and dry a full load of laundry?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR44c (IF RR44a > RR44b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to wash and dry a full load of laundry?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR24 (IF LAUNDRY MEASURE RECOMMENDED) How many loads of laundry do you typically wash in a week?

____ Number of loads
D (DON'T KNOW)
R (REFUSED)

Turn on Energy Savings Button

RR45a (IF AUDIT RECOMMENDED TURNING ON ENERGY SAVINGS BUTTON) After the audit, did you turn on the energy savings button on your refrigerator?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR45b (IF RR45a = 1) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to turn on the energy savings button on your refrigerator?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

Set Refrigerator to Middle Setting

RR45c (IF SET REFRIGERATOR TO MID SETTING) After the audit, did you set your refrigerator dial to the middle setting?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR45d (IF RR45c = 1) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to set your refrigerator dial to the middle setting?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR45e (IF RR45b > 6 OR RR45d > 6) Where is the freezer located (mounted) on your refrigerator?

1 Freezer is on the bottom of the refrigerator
2 Freezer is on the top of the refrigerator
3 Freezer is on the side of the refrigerator
4 Refrigerator does not have an attached freezer
D (DON'T KNOW)
R (REFUSED)

RR45f (IF RR45b > 6 OR RR45d > 6) Does your new refrigerator have a through the door ice machine, through the door water dispenser, both or neither?

1 Ice machine only
2 Water dispenser only
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

Use Task Lighting

RR46a (IF USE TASK LIGHTING) Before the audit, did you always, sometimes or rarely use task lighting (like small desk lamps) instead of other general use lighting (like overhead lights)?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR46b (IF USE TASK LIGHTING) After the audit, did you always, sometimes or rarely use task lighting instead of other general use lighting?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR46c (IF RR46a > RR46b) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use task lighting instead of other general use lighting?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR46d (IF RR46c > 6) How many hours in a typical day do you use task lighting when you would have used general use lighting before?

RECORD NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

Reduce Water Pressure

RR47a (IF REDUCED WATER PRESSURE)
Since the Youth Energy Services audit, have you reduced your home's water pressure?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

RR47b (IF YES TO RR47a) On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to reduced your home's water pressure?

RECORD RESPONSE (0-10) __
D (DON'T KNOW)
R (REFUSED)

RR47c (IF RR47b > 6) Before the audit, at what pressure was your home's water pressure regulator set? (ANSWER IN PSI)

__ PSI SETTING
D (DON'T KNOW)
R (REFUSED)

RR47d (IF RR47b > 6) After the audit, at what pressure was your home's water pressure regulator set? (ANSWER IN PSI)

__ PSI SETTING
D (DON'T KNOW)
R (REFUSED)

Use Power Strips or Unplug Electronics When Not in Use

RR23 (IF USES POWER STRIPS OR UNPLUGS ELECTRONICS TO SAVE ENERGY) Before the Tune-up Audit, did you always, sometimes or rarely use power strips to switch off or unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR23a Since the Tune-up Audit, do you always, sometimes or rarely use power strips to switch off or unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

RR23b (IF RR23A > RR23) What type of electronics do you now always or sometimes use power strips to switch off or unplug when not in use? (READ ONLY IF NEEDED AS EXAMPLE; INDICATE ALL THAT APPLY)

1 TV
2 DVD player
3 Cell phone chargers
4 Computer
5 Power strip
6 Electronic games
7 Stereo equipment
8 Other (SPECIFY)

RR23c **(IF RR23A > RR23)** On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the auditor's recommendation have on your decision to use power strips to switch off or unplug these electronic(s) when not in use?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Other Behavioral

RR26 (READ QUESTIONS)

Since the audit, have you . . . ?	
RR26_a Cleaned refrigerator coils and gasket more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR26_c Replaced or cleaned the AC filter more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR26_e Replaced or cleaned the heater filter more often than you did before the audit?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR26_g Fixed duct leaks?	1 Yes 2 No D (DON'T KNOW) R REFUSED
RR26_H Turned off faucets?	1 Yes 2 No D (DON'T KNOW) R REFUSED

RR27 What benefits, if any, have you or your household received from participating in the Youth Energy Services program? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Learned how to change energy using behaviors / learned how to save energy
2 Able to share what I learned with others
3 Installed more measures on my own
4 Saved energy
5 Saved money on energy bills
6 Other (specify)
7 No benefits
8 (DON'T KNOW)

RR28 Since receiving the audit from the Youth Energy Services program, do you feel you are just as aware or more aware of ways to save energy in your home?

1 Just as aware
2 More aware
D (DON'T KNOW)
R (REFUSED)

RR29 **[IF MORE AWARE]** How much more aware are you? Please rate on a 0 to 10 scale, where 0 means you are slightly more aware and 10 means you are significantly more aware.

ENTER VERBATIM RESPONSE

RR30 Do you feel that, as a result of what you learned through the audit and program, you are less likely, just as likely, or more likely to consider the energy efficiency of equipment when making appliance or equipment purchases?

1 Less likely
2 Just as likely
3 More likely
D (DON'T KNOW)
R (REFUSED)

RR31 How likely is it that you and members of your household will continue to use the information you received through the audit and program to reduce energy use in your household? Please rate on a 0 to 10 scale, where 0 is not at all likely and 10 is extremely likely.

ENTER VERBATIM RESPONSE

Resource Measures—Recall, Installation

EA4 According to the records I have, the auditor provided your household with **[quantity] [equipment]**. Is this correct? (ASK FOR EACH MEASURE IN DATABASE)

(IF RECALL) Did the auditor install this or leave it with you to install yourself?

Measure Type	**Is this correct?**	**Did the auditor install or leave it with you to install yourself?**	**Is this the first you've had in your home?**
(QTY) CFL bulb(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R REFUSED	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED)
(QTY) Torchiere(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R REFUSED	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED
(QTY) Low Flow Showerhead(s)	1 Yes 2 No, wrong quantity (SPECIFY CORRECT QTY) 3 No, did not receive any D (DON'T KNOW) R REFUSED	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R REFUSED	
(QTY) Faucet aerator(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R REFUSED	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R REFUSED	
(QTY) Clothesline(s)	1 Yes 2 No, wrong quantity (SPECIFY QTY) 3 No, did not receive any D (DON'T KNOW) R REFUSED	1 Auditor installed 2 Left with me to install D (DON'T KNOW) R REFUSED	1 Yes 2 No D (DON'T KNOW) R (REFUSED

EA4a (IF CFLs) Where is this/are the **[quantity]** CFLs the auditor provided installed in your residence? Approximately how many hours a day is this/are these bulbs normally used? (READ LIST, FILL IN BLANKS WITH QUANTITY AND HOURS OF USE)

	QUANTITY
Living/family room	
Dining room	
Den/Office	
Kitchen	
Bedrooms	
Bathrooms	
Closets	
Hallways	
Attic	
Basement	
Garage	
Yard/Outside	
Other (specify)	
(DON'T KNOW)	

EA4n (IF NO MEASURES INSTALLED – TOTMEAS = 1) Did the auditor leave or install any light bulbs, showerheads, facuet aerators, torchiere bulbs or clotheslines when he or she visisted your home?

1	Yes	
2	No	(SKIP TO NEXT SECTION)
D	(DON'T KNOW)	(SKIP TO NEXT SECTION)
R	(REFUSED)	(SKIP TO NEXT SECTION)

EA4n1 What did he or she leave? (CHECK ALL THAT APPLY)

1	CFL's
2	Showerheads
3	Faucet Aerators
4	Torchiere bulbs
5	Retractable clothesline
D	DON'T KNOW
R	REFUSED

[IF NO MEASURES IDENTIFIED IN SAMPLE, SKIP TO NEXT SECTION]

[REPEAT EA6-EA12 FOR EACH MEASURE CATEGORY R RECALLS, REGARDLESS OF WHETHER IT WAS INSTALLED BY THE AUDITOR OR NOT]

EA6 **[IF QUANTITY=1]** Now, I would like to understand what you did with the **[equipment].** Is this **[equipment]** currently installed at your home (either indoors or outdoors)? (RECORD ONE NUMBER)

1	Yes	(SKIP TO NEXT MEASURE OR W1)
2	No	
D	(DON'T KNOW)	(IF NO OTHER KNOWLEDGEABLE R, GO TO NEXT MEASURE CATEGORY)
R	(REFUSED)	(IF NO OTHER KNOWLEDGEABLE R, GO TO NEXT MEASURE CATEGORY)

EA7 **(IF QUANTITY=1)** Which of the following best describes what happened with the **[equipment]**? (READ LIST AND RECORD ONE RESPONSE)

1	It is installed at some other location	(SKIP TO EA9)
2	It was installed at your home but is now permanently removed (example: broke, burned out, don't fit, don't like, etc.)	(SKIP TO EA10)
3	It is in storage for some other reason	(SKIP TO EA12)
4	It was sold or given away	(SKIP TO EA9)
5	Something else (SPECIFY)	(SKIP TO NEXT MEASURE)
D	(DON'T KNOW)	(SKIP TO NEXT MEASURE)
R	(REFUSED)	(SKIP TO NEXT MEASURE)

EA8 **(IF QUANTITY>1)** Now, I would like to understand what you did with the **[quantity] [equipment].** (READ LIST, RECORD NUMBER)

a____ How many are currently installed at <u>your</u> home (either indoors or outdoors) **(IF RESPONSE=QUANTITY, SKIP TO NEXT MEASURE OR W1)**
b____ How many are installed at some other location?
c____ How many were installed at your home (either indoors or outdoors) but are now permanently removed (example: broke, burned out, don't fit, don't like, etc.)
d____ How many are in storage for some other reason?
e____ How many were sold or given away?
f____ Something else? (SPECIFY)

EA9 **(ASK IF EA7=1, EA7=4, EA8b>0, EA8e>0)** Is the/Are these **[equipment]** located in PG&E's service territory?

1	Yes
2	No
D	(DON'T KNOW)
R	(REFUSED)

Removed Measures

(ASK ONLY IF THEY SAY THEY REMOVED A MEASURE AFTER INSTALLED, EA7=2 or EA8c>0)

EA10 Now let's talk about **[equipment]** you said was installed but has since been removed. Why was this removed? (DO NOT READ LIST, RECORD ALL THAT APPLY)

1 (Equipment failed/broke)
2 (Didn't work properly)
3 (Wrong size—too small or too large)
4 (Low water flow)
5 (Didn't like the color)
6 (Didn't like appearance/unattractive)
7 (Other, Specify:_____)
D (DON'T KNOW)
R (REFUSED)

EA11 What did you replace **[equipment]** with? (DO NOT READ LIST; PROBE FOR EFFICIENCY, RECORD ALL THAT APPLY)

1 (With a new high efficiency [**equipment**])
2 (With a less efficient [**product type**])
3 (Re-installed old equipment)
4 (Did not replace)
5 (Other, Specify: _____)
D (DON'T KNOW)
R (REFUSED)

Measures in Storage

(ASK ONLY IF THEY SAY MEASURE IS IN STORAGE FOR SOME OTHER REASON, EA7=4 or EA8d>0)

EA12 When do you think you will install the **[equipment]**? Would you say within the next 3 months, 3 to 6 months from now, 6 to 12 months from now, more than a year from now, or never?

1 Within the next 3 months
2 3 to 6 months from now
3 6 to 12 months from now
4 More than a year from now
5 Never
D (DON'T KNOW)
R (REFUSED)

Resource Measures—Free Ridership

Warm-up Questions/Background Context

W1 Please think back to the time when you decided to have the Youth Energy Services audit, perhaps recalling things that occurred in your household shortly before and after **[date]**. What factors motivated you to have the audit? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment working poorly
3 The program and/or audit was free
4 The program and/or audit technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program and/or audit
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

[REPEAT W2-FR12 FOR EACH OF THE FOLLOWING MEASURE CATEGORIES: CFL, WATER SAVING DEVICES, TORCHIERE BULB AND CLOTHESLINE].

[ASK W2-W3 ONLY FOR INCREMENTAL EFFICIENCY MEASURES— CFLS AND TORCHIERES]

W2 Did this **[measure]** replace existing lighting?

1	Yes	
2	No	[SKIP TO FR1]
D	Don't Know	[SKIP TO FR1]
R	(REFUSED)	[SKIP TO FR1]

W3 Was the old lighting working or not working?

1 Working
2 Not working
D (DON'T KNOW)
R (REFUSED)

W5 (IF FAUCET AERATORS OR SHOWERHEADS) Did you have any existing faucet aerators or low flow showerheads installed prior to the auditor's visit?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

Free-Ridership Questions

FR1 At the time that you first heard about the Youth Energy Services program, had you..? (READ LIST UNTIL RESPONDENT SAYS 'NO')

a. Already been thinking about purchasing [**product type**]?	Y	N
b. Already begun collecting information about [**product type**]?	Y	N
c. Already decided to buy the [**product type**]?	Y	N
d. (DON'T READ) Other (SPECIFY)	Y	N

FR2 Just to be sure I understand, did you have specific plans to install a(n) **[product type]** before learning that you could get it free through the Youth Energy Services audit?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

[REPEAT AS NEEDED FOR FR4 PARTS A – D] If the free **[equipment]** had not been offered through the Youth Energy Services audit program, would you still have . . . .

FR4a Purchased the **[product type]**?

1 Yes
2 No [SKIP TO FR5]
D (DON'T KNOW)
R (REFUSED)

FR4b Purchased the **[product type]** at approximately the same time as when the auditor installed or left it with you? (PROBE: That would be around **[date]**)

1	Yes	[SKIP TO FR4C]
2	No	
D	(DON'T KNOW)	[SKIP TO FR4C]
R	(REFUSED)	[SKIP TO FR4C]

FR4b1 Would you have purchased the **[product type]** earlier than you did, or later?

1	Earlier	
2	Same Time	[REPEAT QUESTION FR4B]
3	Later	
D	(DON'T KNOW)	[SKIP TO FR4C]
R	(REFUSED)	[SKIP TO FR4C]

FR4b2 How much **[earlier/later]** would you have bought the **[product type]**?

_____ Years [and/or] _____Months
D (DON'T KNOW)
R (REFUSED)

FR4c **(IF QUANTITY > 1)** Without the Youth Energy Services audit, would you have purchased the same quantity of **[product type]** as what the auditor installed or left with you?

1	Yes	[SKIP TO FR4D]
2	No	
D	(DON'T KNOW)	[SKIP TO FR4D]
R	(REFUSED)	[SKIP TO FR4D]

FR4c1 How many/much would you have purchased without the audit?

_____ [record number]
D (DON'T KNOW)
R (REFUSED)

FR4c2 **(IF FR4c = DK/REFUSED)** On a scale of 0 to 10, where 0 is not very likely and 10 is very likely, how likely is it that you would have purchased the same quantity of **[equipment]** as what you received through the Youth Energy Services program?

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

FR4d **[FOR INCREMENTAL EFFICIENCY MEASURES – LIGHTING, SHOWERHEAD]** Would you have purchased the same efficiency of [**product type**]?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

FR4e If the free **[measure]** had not been available through the Youth Energy Services program, would you have done anything else differently?

1	Yes	
2	No	[SKIP TO FR5]
D	DON'T KNOW	[SKIP TO FR5]
R	REFUSED	[SKIP TO FR5]

FR4e1 What would you have done differently?

[Record response]: _____

FR5 On a 0 to 10 scale, with 0 being not at all likely and 10 being very likely, how likely is it that you would have bought the same **[equipment]** at the same time if you had not received it free through the Youth Energy Services audit program?

RECORD RESPONSE (0-10) _____
D (DON'T KNOW)
R (REFUSED)

FR11 On a scale of 0 to 10, where 0 is strongly disagree and 10 is strongly agree, how much do you agree with this statement? I would have bought **[product type]** within a year of when I did if the auditor had not installed it through the Youth Energy Services program.

[RECORD RESPONSE (0-10)] _____
D (DON'T KNOW)
R (REFUSED)

FR12 Please tell me in your own words what influence, if any, the program or audit had on your decision to have the auditor install the **[equipment]** at the time you did? (RECORD VERBATIM RESPONSE BELOW)

_____

Participation in Other Core Programs (funneling)

M1 As part of your participation in this program, did you receive information about other utility programs?

1	Yes	
2	No	[SKIP TO B1]
D	DON'T KNOW	[SKIP TO B1]

M2 What information did the program give you? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Brochures about the program
2 Application forms for participating in the program
3 Assistance in filling out the application form
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3 Did you participate in any of these programs?

1 Yes
2 No [SKIP TO B1]
D DON'T KNOW [SKIP TO B1]

M4 Which programs? [INDICATE ALL THAT APPLY]

1 SCE Summer Discount Plan
2 Home Energy Efficiency Rebate Program
3 Multifamily Energy Efficiency Rebate Program
4 Refrigerator and Freezer Recycling Program
5 SCE Home Energy Survey
6 The Gas Company Home Energy Efficiency Survey
7 CARE Rate Discount Program
8 Family Electric Rate Assistance (FERA)
9 Energy Management Assistant program (EMA)
10 Direct Assistance Program (DAP)
11 Other (SPECIFY)

Building Characteristics

Next I'd like to ask about your home.

B1 Do you own or rent your home?

1 Own
2 Rent
3 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B2 In what type of building do you live? *(READ LIST IF NEEDED)*

1 A mobile home
2 A one-family home detached from any other house
3 A one-family home attached to one or more houses
4 A building with 2 apartments
5 A building with 3 or 4 apartments
6 A building with 5 or more apartments
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B3 About when was this building first built? *(READ LIST IF NEEDED)*

1 Before 1970's
2 1970's
3 1980's
4 1990-94
5 1995-99
6 2000's
D (DON'T KNOW)
R (REFUSED)

B4 How large is your home / [if apartment: unit] in square feet?

_____ ENTER SQUARE FEET
D (DON'T KNOW)
R (REFUSED)

B4a Since the audit on **[audit date]**, has the size of your home changed?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B4b **(IF B4a = YES)** At the time of the audit, how large was your home / [if apartment: unit] in square feet?

___ ENTER SQUARE FEET
D (DON'T KNOW)
R (REFUSED)

B5 How many *floors* of living space are there in your home, NOT COUNTING unheated basements? Please answer only about *your home*, not the building as a whole]

1 1 floor
2 2 floors
3 3 floors
4 More than 3 floors
D (DON'T KNOW)/Not sure/Can't remember
R (REFUSED)

B6 **[SKIP IF RENT AND LIVE IN MF AND RR4r1a NOT ASKED]** At the time of the audit, were your walls insulated?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B7 **[SKIP IF RENT AND LIVE IN MF AND RR4r2a NOT ASKED]** At the time of the audit, was your attic insulated?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B8a At the time of the audit, did you heat your home with electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B9a **(IF B8a = 2)** At the time of the audit, was your home heated centrally, or was each room heated individually?

1 Central
2 Individual
D (DON'T KNOW)
R (REFUSED)

B9b **[SKIP IF RENT AND LIVE IN MF]** Was this heating system energy efficient?

1 Yes → How can you tell?_____
2 No
D (DON'T KNOW)
R (REFUSED)

B9c **[SKIP IF RENT AND LIVE IN MF]** At the time of the audit, how old was your heating system?

__ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B10a **(IF HEATING SYSTEM REPLACED AT RR4)** Previously you said you replaced your heating system because of the auditor's recommendation. Which of the following best describes the fuel the new system uses to heat your home? Is it electric, gas, or some other fuel?

1 Gas
2 Electric
3 Both
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B10b **(IF HEATING SYSTEM REPLACED AT RR4)** Does the new system heat your home centrally, or is each room heated individually?

1 Central
2 Individual
D (DON'T KNOW)
R (REFUSED)

B12a At the time of the audit, what type of fuel did your water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B12b **[SKIP IF RENT AND LIVE IN MF]** At the time of the audit, what type of water heater did you own?

1 Standard tank
2 Tankless [SKIP TO B12d]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B12c **[SKIP IF RENT AND LIVE IN MF]** Was this water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B12d **[SKIP IF RENT AND LIVE IN MF]** Was this water heater energy efficient?

1 Yes → How can you tell?_____
2 No
D (DON'T KNOW)
R (REFUSED)

B12e **[SKIP IF RENT AND LIVE IN MF]** At the time of the audit, how old was your water heater?

___ ENTER AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B13a **(IF REPLACED WATER HEATER AT RR4)** Previously, you said you replaced your water heater because of the auditor's recommendation. What type of fuel does the new water heater use?

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B13b **(IF REPLACED WATER HEATER AT RR4)** Which of the following best describes the new water heater? Is it a standard tank water heater, tankless or something else?

1 Standard tank
2 Tankless [SKIP TO B16]
3 Other (specify) _____
D (DON'T KNOW)
R (REFUSED)

B13c **(IF REPLACED WATER HEATER AT RR4)** Is your new water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DK)
R (REFUSED)

B16 **[SKIP IF RENT AND LIVE IN MF]** At the time of the audit, did you insulate your water heater or pipes? [NOTE: COULD INCLUDE TANK WRAP, BLANKET,ETC.)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B17a At the time of the audit, what type of air conditioning system, if any, did you use in your home? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Do not have air conditioning [SKIP TO B18a]
5 Other (Specify) _____
D (DON'T KNOW) [SKIP TO B18a]
R (REFUSED) [SKIP TO B18a]

[IF RENTS AND LIVES IN MF, SKIP TO B17d]

B17b Was that AC unit energy efficient?

1 Yes
2 No [SKIP TO B17d]
D (DON'T KNOW) [SKIP TO B17d]
R (REFUSED) [SKIP TO B17d]

B17b1 Do you know what its SEER rating was?

(SEER = Seasonal Energy Efficiency Ratio)

1 Yes (SPECIFY) [SKIP TO B17d]
2 No
D (DON'T KNOW)
R (REFUSED)

B17c At the time of the audit, how old was your air conditioning unit?

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

B17d At the time of the audit, which statement best describes the way your household used the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer, or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B18a **(IF REPLACED COOLING SYSTEM AT RR4)** Previously, you said that you replaced you cooling system because of the auditor's recommendation. What type of air conditioning system is the new system? (INDICATE ALL THAT APPLY)

1 Central air conditioner
2 Room/wall air conditioner
3 Evaporative cooler
4 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B18b **(ONLY IF REPLACED COOLING SYSTEM AT RR4 OR RR18a>RR18)**
(IF REPLACE COOLING SYSTEM AT RR4: Since replacing your cooling system)
(IF RR18a>RR18 AND DID NOT REPLACE COOLING SYSTEM: Since using fans more often) which statement best describes the way your household uses the air conditioning

unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B23a At the time of the audit, what type of windows did you have in your home? Was it single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify)
D (DON'T KNOW)
R (REFUSED)

B23b **(IF WINDOWS REPLACED AT RR4)** What type of window frames did you have at the time of the audit?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [Define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23b2 **(IF B23b = 1)** Did it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23c **(IF WINDOWS REPLACED AT RR4)** What type of glass did your windows have at the time of the audit? (SELECT ALL THAT APPLY)

1 Clear
2 Tinted
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)

D (DON'T KNOW)
R (REFUSED)

B23e **(IF WINDOWS REPLACED AT RR4)** Previously you mentioned that you replaced your windows because of the auditor's recommendation. Which of the following best describes the new type of window that you installed? Is it single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane
3 Triple pane
4 Quadruple pane
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

B23f **(IF WINDOWS REPLACED AT RR4)** How many windows did you replace?

__ Windows replaced
D (DON'T KNOW)
R (REFUSED)

B23g **(IF WINDOWS REPLACED AT RR4)** Did you also replace the frames at the same time you replaced the windows?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23h **(IF FRAMES REPLACED)** What type of frames did you install?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [define]
6 Other
D (DON'T KNOW)
R (REFUSED)

B23h2 **(IF B23h = 1)** Does it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

B23i **(IF WINDOWS REPLACED AT RR4)** What type of glass are the new windows? (CHECK ALL THAT APPLY)

1 Clear
2 Tint
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

B24 **(IF CLOTHES WASHER NOT INSTALLED AS RECOMMENDATION)** Just to confirm, do you have a clothes washer and dryer in your home?

1 Washer
2 Dryer
3 Both
4 Neither
D (DON'T KNOW)
R (REFUSED)

B25 **(ASK IF B24=2 OR 3)** What type of fuel does your dryer use?

1 Gas
2 Electric
D (DON'T KNOW)
R (REFUSED)

B26 (ASK IF B24=1 OR 3) Do you have a high efficiency front load clothes washer?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

Additional Demographics

We're almost finished. I just have a few questions about your household to make sure we're getting a representative sample of participants.

D1 Including yourself, how many people currently live in your home year-round?

_____ people
D (DON'T KNOW)
R (REFUSED)

D2 **(IF D1=1)** Which of the following best describes your age?

1 Less than 18 years old
2 18-24 years old
3 25-34 years old
4 35-44 years old
5 45-54 years old
6 55-64 years old
7 65 or older
D (DON'T KNOW)
R (REFUSED)

D3 **(IF D1>1)** Including yourself, how many people currently living in your home year-round are in the following age groups? (TOTAL SHOULD EQUAL D1)

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older
R (REFUSED)

D4 What is the highest level of education you have completed?

1 no schooling
2 less than high school
3 some high school
4 high school graduate or equivalent (e.g., GED)
5 trade or technical school
6 some college
7 college graduate degree
8 some graduate school
9 graduate degree
10 other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D5 Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .? *(READ)*

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more
D (DON'T KNOW)
R (REFUSED)

D6 Are you Spanish/Hispanic/Latino?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

D7 What is your race? *(INDICATE ALL THAT APPLY)*

1 White
2 Black, African American or Negro
3 American Indian or Alaska Native
4 Asian
5 Chinese
6 Japanese
7 Korean
8 Vietnamese
9 Filipino
10 Native Hawaiian
11 Guamanian or Chamorro
12 Samoan
13 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D8 What is the primary language spoken in your home? *(DO NOT READ)*

1 English
2 Spanish
3 Mandarin
4 Cantonese
5 Tagalog
6 Korean
7 Vietnamese
8 Russian
9 Japanese
10 Other (specify)
D (DON'T KNOW)
R (REFUSED)

RECORD GENDER:

1 Male
2 Female

END **THANK YOU FOR YOUR TIME.**

Referrals Local Governments and Small Businesses Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding the Energy Efficiency Tune-up Audit program you participated in. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how business uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the Tune-up audit program. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your business, and your opinions about these services. Your responses will be kept confidential.

Screening

S1 First, could you tell me if you help specify, recommend, or approve equipment purchases for your facilities?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who may have received information or make those decisions about energy savings programs for your facility?

1 Yes [RECORD OTHER CONTACT INFO] [RETURN TO BEGINNING]
2 No [terminate]

S3 What is your organization's primary building activity? Is it . . .
(READ)

1 Office
2 Retail (non-food)
3 College/University
4 School
5 Grocery Store
6 Restaurant
7 Health Care (other than Hospital)
8 Hospital
9 Hotel or Motel
10 Warehouse
11 Construction
12 Community Service/Church/Temple/ Municipality
13 Industrial Process/ Manufacturing/ Assembly
14 Condo Assoc./Apartment Mgr.
15 Other (Please specify)
88 (DON'T KNOW)
99 (REFUSED)

S4 I would like to confirm that your organization is located in **[CITY]**. Is this correct?

1 Yes
2 No [GET NAME OF CITY]

S5 Just for our records, from what utility do you buy your electricity?

1 Southern California Edison (SCE)
2 Pacific Gas & Electric (PG&E)
3 Los Angeles Department of Water and Power (LADWP)
4 Sacramento Municipal Utility District (SMUD)
5 San Diego Gas & Electric (SDG&E)
6 Other (record)
D DON'T KNOW
R REFUSED

S6 And from what utility do you buy natural gas?

1 Southern California Gas (SCG)
2 Pacific Gas & Electric (PG&E)
3 San Diego Gas & Electric (SDG&E)
4 Other (record)
D DON'T KNOW
R REFUSED

S7 What is your title? (DON'T READ)

Enter verbatim response

_____

REFERRAL TO PROGRAM QUESTIONS

[ASK R1 through NP4 for each program referred to]

R1 I'd like to ask you a few questions about the (FILL "NAME OF "REFERRED" PROGRAM). This program *(FILL DESCRIPTION OF THE PROGRAM)*. Before today, have you heard of this program?

1 Yes
2 No [SKIP TO NP2]
D Don't know [SKIP TO NP2]
R Refused [SKIP TO NP2]

R2 How did you <u>first</u> hear about the **[FILL "REFERRED"]** program? [RECORD ONE RESPONSE]

1 Another program (which program?)
2 Local government partnership activities
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community sweeps
8 Community displays
9 Energy fairs
10 Word of mouth
11 Newspaper article
12 Website
13 Other [RECORD]
14 DON'T KNOW
15 REFUSED

R3 From what other sources did you hear about the **[FILL "referred"]** program? [RECORD ALL RESPONSES]

1 Another program (which program?)
2 Local government partnership activities
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community sweeps
8 Community displays
9 Energy fairs
10 Word of mouth
11 Newspaper article
12 Website
13 No other sources
14 Other [RECORD]
15 DON'T KNOW
16 REFUSED

PROGRAM PARTICIPATION QUESTIONS

P1 Did a staff member or contractor from the utility, the local government partnership (FILL "program"), the (FILL "referred") itself, or other source contact you before you were aware of the program and recommend that you consider participating in this particular program? If so, who contacted you?

1 No one contacted me
2 A utility staff member contacted me
3 A person from the local government partnership contacted me
4 A person contacted me from the (FILL "referred")
5 A person contacted me from OTHER:_____
D Don't know
R Refused

P1a [IF P1=1 OR P1=D OR P1=R] Did a staff member from any of these sources ever contact you and recommend that you consider participating in this particular program? If so, who contacted you?

1 No one contacted me
2 A utility staff member contacted me
3 A person from the local government partnership contacted me
4 A person contacted me from the (FILL "referred")
5 A person contacted me from OTHER:_____
D Don't know
R Refused

P2 Did you participate in the **[FILL "referred"]** PROGRAM)?

1 Yes
2 No [SKIP TO NP1]
D Don't know [SKIP TO NP1]
R Refused [SKIP TO NP1]

P3 What did you have done through your participation in the program? [INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?]

1 Motors and compressors
2 Heating, ventilation, and air conditioning (HVAC) equipment
3 Lighting equipment and controls
4 Time clocks
5 Refrigeration equipment
6 Pre-rise spray valve
7 Appliances
8 EMS and controls
9 EE water heater
10 EE pool pumps
11 EE shower heads/faucet aerators
12 Add attic exhaust fan
13 Add a white roof
14 Replace windows
15 Add/improve insulation
16 Other (SPECIFY)
17 DON'T KNOW
18 REFUSED

P3_Mot [IF P3=Motors] What type of motors or compressors did you have installed? [INDICATE ALL THAT APPY]

1 Variable speed drives
2 Premium efficiency motors
3 Compressor heat recovery units
4 Scroll compressors
5 Other (SPECIFY)
6 Don't know
7 Refused

P3_HVC [IF P3=HVAC] What type of heating, ventilation or air conditioning equipment did you have installed? [INDICATE ALL THAT APPY]

1 Air conditioning thermostats, controllers, infrared sensors
2 Control improvements and economizer repairs to existing HVAC
3 Seal ductwork for cooling and heating systems
4 Energy efficient heating or cooling system
5 Energy efficient gas boiler
6 Efficient ventilation equipment
7 Other (SPECIFY)
8 Don't know
9 Refused

P3_Ltg [IF P3=Lighting] What type of lighting equipment did you have installed? [INDICATE ALL THAT APPY]

1 Energy efficient lighting equipment
2 Energy efficient lighting design assistance and incentives including daylighting, controls and latest generation lighting technologies
3 Lighting occupancy sensors
4 LED Exit Signs
5 Other (SPECIFY)
6 Don't know
7 Refused

P3_Ref [IF P3=Refrigeration] What type of refrigeration equipment did you have installed? [INDICATE ALL THAT APPY]

1 Energy efficient refrigeration system
2 Refrigeration controls
3 Refrigeration strip curtains, gaskets, other improvements
4 Vending misers/efficient vending machines
5 Energy efficient freezers
6 Energy efficient ice machines
7 Other (SPECIFY)
8 Don't know
9 Refused

P3_Apl [IF P3=Appliances] What type of appliances did you have installed? [INDICATE ALL THAT APPY]

1 High efficiency cooking equipment
2 High efficiency clothes washer(s)
3 High efficiency refrigerator
4 High efficiency dishwasher
5 Other (SPECIFY)
6 Don't know
7 Refused

P3a What factors motivated you to participate in the program? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment worked poorly
3 The program was free
4 The program provided technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
16 (DON'T KNOW)
17 (REFUSED)

P4 **[If P1=2,3,4,5 – ASK]** Do you think you would have participated in the program without the recommendation you received from (fill with response from P1)?

1 Yes
2 No
D Don't know
R Refused

P5 **[If P1=2,3,4,5 – ASK]** On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the recommendation have on your decision to participate in **[PROGRAM]**?

1 _____

P5a. **[If P1=2,3,4,5 – ASK]** Why do you say that?

P6 **[If P1=1, D, R – ASK]** On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the information you received about the program have on your decision to participate in **[PROGRAM]**?

1 _____

P6a **[If P1=1, D, R – ASK]** Why do you say that?

NON-PARTICIPANT QUESTIONS

NP1 **[ASK IF SAID AWARE OF PROGRAM, BUT DID NOT PARTICIPATE]** You said you heard of the program, but have not participated. Why haven't you participated in the program? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Do not need services provided by the program
2 Have not gotten around to participating
3 Do not know how to participate
4 Do not want to participate
5 Do not need equipment
6 Can't afford to purchase energy saving measures
7 I'm waiting for old equipment to fail
9 Other [RECORD]
10 Don't know
11 Refused

NP2 Please tell me if you feel you would be very interested, somewhat interested, or not at all interested in receiving services through a program such as the **[FILL "REFFERED" PROGRAM]**

1 Very interested
2 Somewhat interested
3 Not at all interested
D Don't know
R Refused

NP3 **[IF NP2=3]** Why wouldn't you be interested in receiving these services? [DO NOT READ; INDICATE ALL THAT APPLY]

1 No reason
2 Building is new
3 Do not need equipment
4 Too costly/payback isn't there
5 Don't know what to do
6 Already participated in programs to make building efficient
7 Don't know a reliable contractor
8 I don't care
9 Energy use is not a priority for organization
10 Other (please specify: _____)
11 Don't know
12 Refused

NP4 Do you know of other organizations in your area where you could receive these types of services?

1 Yes [What organization:_____]
2 No
D Don't know
R Refused

PARTICIPATION IN OTHER PROGRAMS

OP1 Have you participated in any other energy efficiency rebate and incentive programs offered by your electric or gas utility in the past 3 years?

1	Yes	
2	No	[SKIP TO DC1]
D	DON'T KNOW	[SKIP TO DC1]
R	REFUSED	[SKIP TO DC1]

OP2 Which programs? [INDICATE ALL THAT APPLY] Which programs? [INDICATE ALL THAT ARE MENTIONED]

1 CA Dairy Energy Efficiency Program
2 California Preschool Energy Efficiency Program (CPEEP)
3 Commercial Laundry Program"
4 Cool and Light Program
5 Cool Control Plus Program
6 Duct Test and Seal Program
7 Energy Smart Grocer Program
8 HeatWise Program
9 Light exChange Program (LCP)
10 Lodging Savers Program
11 PG&E Rebates and Incentives
12 SCE audit
13 SCE Ligthing Retrofit Program
14 SCE Programs (general)
15 SCE Vending Program
16 School Energy Efficiency Program
17 Small Commercial Comprehensive Refrigeration Program (CoolBiz)
18 Other (SPECIFY)
19 DON'T KNOW
20 REFUSED

COMMERCIAL FIRMOGRAPHICS

DC1 What is the zip code where your building is located?

zip code _____

DC2 Does your organization lease or own your facility?

1 Lease
2 Own
3 Other, specify

DC3 How old is your building?

1 Less than one year
2 Years – SPECIFY
3 (Don't know)
4 (Refused)

DC4 How many locations does your organization have in California?

1 1
2 2 to 4
3 5 to 10
4 11 to 25
5 Over 25
D (Don't know)
R (Refused)

END **THANK YOU FOR YOUR TIME.**

Referrals Households Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding the Energy Efficiency Tune-up Audit program you participated in. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how business uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the Tune-up audit program. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.)

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your business, and your opinions about these services. Your responses will be kept confidential.)

Screening

S1 First, could you tell me if you are the person who would receive information or make the decision to participate in a program to remove or install appliances or cooling systems to save energy in your home?

1 Yes [SKIP TO S3]
2 No

S2 Is there someone else we could speak to who may have received information or make those decisions about energy savings programs for your home?

1 Yes [RECORD OTHER CONTACT INFO] [RETURN TO BEGINNING]
2 No [terminate]

S3 Just for our records, from what utility do you buy your electricity?

1 Southern California Edison (SCE)
2 Pacific Gas & Electric (PG&E)
3 Los Angeles Department of Water and Power (LADWP)

4 Sacramento Municipal Utility District (SMUD)
5 San Diego Gas & Electric (SDG&E)
6 Other (record)
D DON'T KNOW
R REFUSED

S4 And from what utility do you buy natural gas?

0 Don't have natural gas
1 Southern California Gas (SCG)
2 Pacific Gas & Electric (PG&E)
3 San Diego Gas & Electric (SDG&E)
4 Other (record)
D DON'T KNOW
R REFUSED

REFERRAL TO PROGRAM QUESTIONS

R1 I'd like to ask you a few questions about the **["REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler]** This program will *(DESCRIPTION OF THE PROGRAM)*. Before today, have you heard of this program?

1 Yes
2 No [SKIP TO NP2]
D Don't know [SKIP TO NP2]

R2 How did you <u>first</u> hear about the **["REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler]** program? [RECORD ONE RESPONSE]

1 Another program (which program?)
2 ("Local government partnership") activities
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community sweeps
8 Community displays
9 Energy fairs
10 Friends/neighbors/relatives
11 Newspaper article
12 Website
13 Other [RECORD]
D DON'T KNOW
R REFUSED

R3 From what <u>other</u> sources did you hear about the **["REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler]** program? [RECORD ALL RESPONSES]

1 Another program (which program?)
2 ("Local government partnership") activities
3 Water utility bill stuffing
4 Electric / gas utility bill stuffing
5 Water utility mailing
6 Electric / gas utility mailing
7 Community sweeps
8 Community displays
9 Energy fairs
10 Word of mouth
11 Newspaper article
12 Website
13 Other [RECORD]
D DON'T KNOW
R REFUSED

PROGRAM PARTICIPATION QUESTIONS

P1 Did a staff member or contractor from the utility, the **["LOCAL GOVERNMENT PARTNERSHIP"]**, the **["REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler**] itself, or other source contact you <u>before</u> you were aware of the program and recommend that you consider participating in this particular program? If so, who contacted you?

1 No one contacted me
2 A utility staff member contacted me
3 A person from the local government partnership contacted me
4 A person contacted me from the (FILL NAME OF PROGRAM)
5 A person contacted me from OTHER (SPECIFY)
D Don't know

P1a **[IF P1=1 OR P1=D OR P1=R]** Did a staff member from any of those sources <u>ever</u> contact you and recommend that you consider participating in this particular program? If so, who contacted you?

1 No one contacted me
2 A utility staff member contacted me
3 A person from the local government partnership contacted me
4 A person contacted me from the
5 A person contacted me from another source (SPECIFY)
D DON'T KNOW
R REFUSED

P2 Did you participate in the **[NAME OF "REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler]**?

1 Yes
2 No [SKIP TO NP1]
D Don't know [SKIP TO NP1]

P3 What did you receive a rebate or incentive for through the program? (PROBE: types of measures installed) [INDICATE ALL THAT APPLY]

1 Installed an Energy Star (or energy efficient) refrigerator
2 Removed an old refrigerator
3 Removed an old freezer
4 Installed an energy efficient ducted evaporative cooler
5 Other (specify)
D DON'T KNOW
R REFUSED

P3a What factors motivated you to participate in the program? [DO NOT READ; INDICATE ALL THAT APPLY; ONCE THEY RESPONDENT HAS FINISHED, PROBE: Are there any other factors?]

1 Old equipment didn't work
2 Old equipment worked poorly
3 The program was free
4 The program provided technical assistance
5 Wanted to save energy
6 Wanted to reduce energy costs
7 The information provided by the Program staff
8 Because of past experience with another utility program and/or audit
9 Recommendation from other utility program (Probe: What program? _____)
10 Recommendation of someone else (Probe: Who?_____)
11 Advertisement in newspaper (Probe: For what program? _____)
12 Radio advertisement (Probe: For what program? _____)
13 Environmental concerns
14 Global warming
15 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

P4 **[If P1=2,3,4,5 – ASK]** Do you think you would have participated in the program without the recommendation you received from (fill with response from P1)?

1 Yes
2 No
D Don't know

P5 **[If P1=2,3,4,5 – ASK]** On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the recommendation have on your decision to participate in **[PROGRAM]**?

1 _____

P5a **[If P1=2,3,4,5 – ASK]** Why do you say that?

P6 **[IF NO RECOMMENDATION MADE IN P1 OR P1A]** On a scale of 0 to 10, with 0 being no influence and 10 being a great deal of influence, how much influence did the information you received about the program have on your decision to participate in the **[PROGRAM]**?

__ RECORD RESPONSE
D DON'T KNOW
R REFUSED

P6a **[IF NO RECOMMENDATION MADE IN P1 OR P1A]** Why do you say that?

NON-PARTICIPANT QUESTIONS

NP1 **[IF P2 <> 2 SKIP TO OP1] [ASK IF SAID AWARE OF PROGRAM, BUT DID NOT PARTICIPATE--P2=2]** You said you heard of the program, but have not participated. Why haven't you participated in the program? [DO NOT READ; INDICATE ALL THAT APPLY]

1 Do not need services provided by the program
2 Have not gotten around to participating
3 Do not know how to participate
4 Do not want to participate
5 Do not need equipment
6 Can't afford to purchase energy efficient appliances/equipment
7 I'm waiting for my old equipment to fail
8 Lost my job and can't afford new appliances/equipment
9 Other [RECORD]
D Don't know

NP2 Please tell me if you feel you would be very interested, somewhat interested, or not at all interested in receiving services through a program such as the **[NAME OF "REFERRED TO" PROGRAM—EnergyStar Refrigerator Program, Refrigerator or Freezer Recycling Program, or Energy Efficient Ducted Evaporative Cooler]**

1 Very interested
2 Somewhat interested
3 Not at all interested
D Don't know

NP3 **[IF NP2=3]** Why wouldn't you be interested in receiving these services? [DO NOT READ; INDICATE ALL THAT APPLY]

1 No reason
2 Home is new
3 Do not need appliances/equipment

4 Too costly/payback isn't there
5 Don't know what to do
6 Already participated in programs to make home efficient
7 Don't know a reliable contractor
8 I don't care
9 Energy savings is not a priority
10 Lost my job/can't afford
11 Other (please specify)
12 Don't know

NP4. Do you know of other organizations in your area where you could receive these types of services?

1 Yes [What organization?]
2 No

PARTICIPATION IN OTHER PROGRAMS

OP1 Have you participated in any other energy efficiency rebate and incentive programs offered by your electric or gas utility in the past 3 years?

1 Yes
2 No [SKIP to D1]
D DON'T KNOW [SKIP to D1]

OP2 Which programs? [INDICATE ALL THAT ARE MENTIONED]

1 SCE Summer Discount Plan	13 Heating and Cooling Rebate Program
2 Home Energy Efficiency Rebate Program	14 Lighting Rebate Program
3 Multifamily Energy Efficiency Rebate Program	15 Pool Pumps and Motors Rebate Program
4 Refrigerator and Freezer Pickup and Recycling Program	16 Appliances Rebate Program
5 Energy Star Refrigerator Rebate Program	17 Cool Roofs Rebate Program
6 Energy Efficient Ducted Evaporative Cooler Rebate Program	18 Insulation Rebate Program
7 SCE Home Energy Survey	19 Water Heating Rebate Program
8 The Gas Company Home Energy Efficiency Survey	20 California (Photovoltaic) Solar Systems
9 CARE Rate Discount Program	21 Other (SPECIFY)
10 Family Electric Rate Assistance (FERA)	22 DON'T KNOW
11 Energy Management Assistant program (EMA)	23 REFUSED
12 Direct Assistance Program (DAP)	

Demographics

Next I'd like to ask about your home.

D1 Do you own or rent your home?

1 Own
2 Rent
3 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D2 In what type of home do you live? *(READ LIST IF NEEDED)*

1 A mobile home
2 A one-family home detached from any other house
3 A one-family home attached to one or more houses
4 A building with 2 apartments
5 A building with 3 or 4 apartments
6 A building with 5 or more apartments
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D3 About when was this home first built? *(READ LIST IF NEEDED)*

1 Before 1970's
2 1970's
3 1980's
4 1990-94
5 1995-99
6 2000-2005
7 2006-2009
D (DON'T KNOW)
R (REFUSED)

D4 Including yourself, how many people currently living in your home year-round are in the following age groups?

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older
R (REFUSED)

D5 What is the highest level of education you have completed?

1 no schooling
2 less than high school
3 some high school
4 high school graduate or equivalent (e.g., GED)
5 trade or technical school
6 some college
7 college graduate degree
8 some graduate school
9 graduate degree
10 other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

D8 Which of the following best represents your annual household income from all sources in 2008, before taxes? Was it . . . .? *(READ)*

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more
D (DON'T KNOW)
R (REFUSED)

END **THANK YOU FOR YOUR TIME**

Title 24 Training – Participant Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding a Title 24 training event held at **[location]** around **[date]**. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how household uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the **[Course name]**. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.

(**Timing**: This survey should take less than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that could save energy in your home, and your opinions about these services. Your responses will be kept confidential.

Around **[DATE]**, you attended a course/activity, **[COURSE NAME]**, at **[CENTER]**. To understand the impact of courses such as **[COURSE NAME]**, we ask that you complete this brief survey. The survey should take no more than 15 minutes for you to complete.

Screeners

S1 Do you recall attending the Title 24 Energy Efficiency Standards course on **[COURSE DATE]** at **[CENTER]**?

1 Yes
2 No [terminate]

S2 Are you employed by or do you have any service contracts with any public utility or Energy Centers?

1 Yes [terminate]
2 No

Attendee Characterization

AC1 Which of the following best describes your motivation for taking the Title 24 Energy Efficiency Standards course? [READ CATEGORIES]

1 to learn something that I could apply at my home
2 to learn something that I could apply at my work or the property I manage
3 to learn something in general with no specific application in mind

[ASK IF Q AC1=2]

AC2 Which of the following best describes where you intend to apply the information you learned in the course? [READ CATEGORIES]

1 at the facility(ies) my business occupies
2 at the facility(ies) my business manages (e.g. property managers)
3 in facilities occupied or managed by customers to whom I provide services (e.g. architects, engineering firms, contractors, code inspectors)
4 somewhere else [specify]

RTYPE RESPONDENT TYPE DEFINED

[Classify AC1=1, as EUCR [residential end-use customer]]
[Classify AC1=2 and AC2=1, 2 as EUCC (commercial end-use customer)]
[Classify AC1=2 and AC2=3, 4 as MA[market actor]]
Missing classification for AC1=3. Set as MA

AC3 **[IF MA]** What is your title?

1 Building inspector/supervisor
2 Building department plan checker
3 Building permit technician
4 Building officials (e.g. safety, superintendents)
5 Planner
6 Architect
7 Designer
8 Draftsperson
9 Engineer
10 Public official, specify
11 Other, specify

AC4 Are you responsible for code compliance, code enforcement, both or neither?

1 Compliance
2 Enforcement
3 Both
4 Neither [SKIP TO K1]

AC5 Approximately what percent of your average work week is spent on code compliance or enforcement?

____%

MATYPE MARKET ACTOR TYPE DEFINED

[Classify AC4=2 or3, MATYPE=INS (inspector)]
[Classify AC4=1, MATYPE=SPE (specifier)]
[Else classify MATYPE=OTH (other)]

Knowledge

K1 Did the **[COURSE]** course provide you with any new information on Title 24 standards, new construction or renovation standards?

1 Yes
2 No
3 Don't know
4 Refused

[ASK IF K1=2]

K2 Although you don't think the course information was new, did your participation in the course [INS: make you any more likely to consistently enforce/SPE: make you any more likely to specify or comply with /OTH: improve your understanding of] Title 24 standards for new construction or renovation?

1 Yes
2 No
3 Don't know
4 Refused

The California 2005 Title 24 Energy Efficiency Standards course is a 2 hour workshop designed to inform you of building envelope, lighting, and mechanical requirements under Title 24 that impact commercial and residential new construction and renovation.

K3 Which of the following statements best describes the amount of knowledge you had regarding Title 24 standards for new construction and renovation prior to your participation in the course?

1 I had no knowledge of how to meet Title 24 standards
2 I had some knowledge of how to meet Title 24 standards
3 I had extensive knowledge of how to meet Title 24 standards

K4 Using a scale of 1 to 7 where 1 is no more knowledgeable and 7 is significantly more knowledgeable, as a result of your participation in this course, how much more knowledgeable do you feel regarding how to meet Title 24 standards?

1 2 3 4 5 6 7
No more knowledgeable Significantly more knowledgeable

K5 I am now going read a series of statements. Please rate your agreement with each statement using a scale of 1 to 7, where 1 is strongly disagree and 7 is strongly agree.

K5a As a result of taking the course, I have a better understanding of how to meet Title 24 standards.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5b As a result of taking the course, I am more aware of utility sponsored energy efficiency programs.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

[ASK K5c and K5d IF Respondent Type = MA ELSE SKIP TO K5e]

K5c As a result of taking the course, I am now more familiar with the tools and/or techniques that will enhance the service I provide to my clients

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5d As a result of taking the course, I have more confidence when I [INS or OTH: inspect or review plans/SPE: specify equipment or building practices] that they will meet Title 24 standards.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

[ASK K5e and K5f IF Respondent Type = EUCC ELSE SKIP TO K6]

K5e As a result of taking the course, I better understand how to meet Title 24 standards at my facility/the facilities I manage.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5f As a result of taking the course, I have more confidence that any improvements I make will meet Title 24 standards.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K6 Since taking the course, have you taken more in-depth training on Title 24 requirements?

1 Yes
2 No

Attribution

I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

[ASK IF RESPONDENT TYPE = EUCC, ELSE IF RESPONDENT TYPE = EUCR SKIP TO A2a, ELSE IF RESPONDENT TYPE = MA, SKIP TO A3a]

A1a To what degree do you think more about energy efficiency in new construction or renovation improvements at your facility as a result of the information presented in the course?

1 2 3 4 5 6 7
Not At All A Great Deal

A1b To what degree did the course lead you to take advantage of energy efficiency opportunities at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

A1c To what degree did the course increase your awareness of the requirements to meet Title 24 standards at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

A1d To what degree did the course increase your understanding of the specific requirements for meeting Title 24 standards or the different ways in which the Title 24 standards can be met at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

[SKIP TO R1]

A2a To what degree do you think more about energy efficiency in new construction or renovation improvements at your home as a result of the information presented in the course?

1 2 3 4 5 6 7
Not At All A Great Deal

A2b To what degree did you take advantage of energy efficiency opportunities at your home as a result of information presented at the course?

1 2 3 4 5 6 7
Not At All A Great Deal

A2c To what degree did the course increase your awareness of the requirements to meet Title 24 standards at your home during renovation or new construction?

1 2 3 4 5 6 7
Not At All A Great Deal

A2d To what degree did the course explain the importance of meeting Title 24 standards at your home during renovation or new construction?

1 2 3 4 5 6 7
Not At All A Great Deal

[SKIP TO R1]

A3a To what degree do you think more about energy efficiency in new construction or renovation improvements at client sites as a result of the information presented in the course?

1 2 3 4 5 6 7
Not At All A Great Deal

A3b To what degree did the course improve your ability to help your clients comply with Title 24 standards?

1 2 3 4 5 6 7
Not At All A Great Deal

A3c To what degree did the course increase your awareness of the requirements to meet Title 24 standards in the work you do for your clients?

1 2 3 4 5 6 7
Not At All A Great Deal

A3d To what degree did the course explain the importance of helping your clients meet Title 24 standards?

1 2 3 4 5 6 7
Not At All A Great Deal

Module to Support Regression Analysis

[SKIP TO R2 IF Respondent Type = EUCR]

R1 Using a scale of 1 to 7 where 1 means extremely difficult and 7 means extremely easy, please rate your ability to [INS: enforce/SPE: specify or comply with/OTH: understand] Title 24 standards in new construction or renovation projects with which you are involved?.

1	2	3	4	5	6	7
Extremely Difficult						Extremely Easy

R1a **[IF R1=1,2,6,7]** Could you please explain why it is extremely [easy/difficult]?

R2 Using a scale of 1 to 7 where 1 means not at all useful and 7 means very useful, please rate your perception of the usefulness of the information presented in the Title 24 training course.

1	2	3	4	5	6	7
Not At All Useful						Very Useful

R2b **(IF R2 < 5)** Why do you say that?

_____

Satisfaction

R2c On a scale of 1 to 7, where 1 means not at all satisfied, and 7 means very satisfied, how satisfied were you with the Title 24 workshop?

1	2	3	4	5	6	7
Not At All						Very Satisfied

R2d How would you rate the length of the Title 24 course? Was it too short, about right, or too long?

1 Too short
2 About right
3 Too long

R2e I am going to read a list of topics for you. For each, please tell me how would you rate the information provided in the course by telling me if it was too little information, about the right amount of information, too much information, or not applicable to your role?

a. nonresidential indoor lighting
b. residential lighting
c. residential parking lots and garage lighting
d. outdoor lighting
e. nonresidential ducts

f. demand control ventilation
g. residential ducts
h. insulation
i. duct leakage testing

1 Too little information
2 Right amount of information
3 Too much information
4 Not applicable to your role

Actions Taken - EUCC

[ASK IF Respondent Type = EUCC ELSE IF Respondent Type =EUCR SKIP TO TR1A ELSE SKIP TO TA0]

TC1. Using a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statements:

a. As a result of taking the course, I recommend Title 24 energy efficient technologies or practices to my management more often than I did prior to taking the course.
b. As a result of taking the course, I am better prepared to evaluate Title 24 energy efficient options.
c. As a result of taking the course, my recommendations regarding Title 24 energy efficient technologies or practices are viewed by my management as more informed.

1	2	3	4	5	6	7	8
Strongly disagree						Strongly agree	Not Applicable

TC1d Have you begun any new construction or major renovation at the facility[ies] your business occupies or manages since participating in the Title 24 Energy Efficiency Standards course?

1 Yes
2 No
3 Don't know

[ASK IF TC1d=1; ELSE SKIP TO TC4]

TC1e What did you do?

TC2 Did you make any efforts to apply the concepts taught in the course at the new or remodeled facility[ies] your business occupies or manages since participating in the Title 24 Energy Efficiency Standards course?

1 Yes
2 No
3 Don't know

TC2a [ASK IF TC2=1]
Did you meet all, some or none of the Title 24 standards at the new or remodeled facility[ies]?

1 All

2 Some
3 None

TC3 [ASK IF TC2=1]
Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to apply the concepts taught in the course at the facility(ies) your business occupies or manages?

1 2 3 4 5 6 7
Not At All Influential Very Influential

TC3_a In your opinion, have the changes or enhancements you have made resulted in measurable energy savings in your facility(ies)?

1 Yes
2 No [SKIP TO TC4]
3 Don't know [SKIP TO TC4]

[ASK IF TC3_a=1]
TC3_b In your opinion, how would you characterize the energy savings realized by your company as a result of your participation in the course? In general would you say these are …

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TC3_a=1]
TC3_c Have you estimated the average savings per building?

1. Yes
2. No [SKIP TO TC4]

TC3_d How did you estimate electricity savings, was it in …(Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)

[ASK IF TC3_d=1]
TC3_e Approximately how many dollars did you save? [NUMERIC OPEN END]

[ASK IF TC3_d=2]
TC3_f Approximately how many kWh did you save? [NUMERIC OPEN END]

TC4 Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely is it that you will use the concepts taught in the course in future new construction or renovation efforts?

1 2 3 4 5 6 7
Not at all likely Very likely

[ASK IF TC2= 2 or 3 OR TC4<4]

TC5 What are the reasons you have not used, and do not plan to use, the concepts taught in the course at your facility(ies)? [Record all that apply]

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 The Title 24 standards aren't enforced
6 The Title 24 standards are too complex
7 Lack of product availability
8 Lack of knowledgeable contractors to implement
9 The standards are not high enough and we want to go beyond them
10 Other, Specify

TC6 Since you participated in the course, have you: [Yes =1, No =2, Ask for each]

a. Sought out additional information related to the concepts taught in the course?
b. Shared information you learned in the course with a colleague?
c. Helped convince others in your organization to meet Title 24 standards?
d. Shared with others outside of your organization the requirements for meeting Title 24 standards?

[GO TO D0]

Actions Taken - EUCR

TR1a Have you begun any new construction or major renovation in your home since participating in the Title 24 Energy Efficiency Standards course?

1 Yes
2 No
3 Don't know

[ASK IF TR1a=1; ELSE SKIP TO TR2]

TR1b What did you do?

TR1 Have you made any efforts to apply the concepts taught in the course in your home?

1 Yes
2 No
3 Don't know

[ASK IF TR1=1]

TR1c Did you meet all, some or none of the Title 24 standards?

1 All
2 Some
3 None

[ASK IF TR1=1]

RAT1b Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to apply the concepts taught in the course at your home?

1 2 3 4 5 6 7
Not At All Influential Very Influential

TR1_a In your opinion, have the changes or enhancements you have made resulted in measurable energy savings in your home?

1 Yes
2 No [SKIP TO TR2]
3 Don't know [SKIP TO TR2]

[ASK IF TR1_a=1]

TR1_b In your opinion, how would you characterize the energy savings realized by your home as a result of your participation in the course? In general would you say these are …

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TR1_a=1]

TR1_c Have you estimated your average savings?

1 Yes
2 No [SKIP TO TR2]

TR1_d How did you estimate electricity savings, was it in…
(Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)

[ASK IF TR1_d=1]

TR1_e Approximately how many dollars did you save? [NUMERIC OPEN END]

[ASK IF TR1_d=2]

TR1_f Approximately how many kWh did you save? [NUMERIC OPEN END]

TR2 Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely are you to apply the concepts taught in the course at your home in the future?

1 2 3 4 5 6 7
Not at all likely Very likely

[ASK IF TR1= 2 or 3 OR TR2 <4]

TR3 What are the reasons you have not used or do not plan to use, the concepts taught in the course? [Record all that apply]

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 The Title 24 standards aren't enforced anyway
6 The Title 24 standards are too complex
7 Lack of product availability
8 Lack of knowledgeable contractors to implement
9 The standards are not high enough and we want to go beyond them
10 Other, Specify

TR4 Since you participated in the course, have you: [Yes =1, No =2, Ask for each]

a. Sought out additional information related to the concepts taught in the course?
b. Shared information you learned in the course with a family member, friend or neighbor?

[GO TO D0]

Actions Taken - MA

[ASK IF Respondent Type = MA, ELSE SKIP TO D1]

TA0 Based on a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statement: As a result of taking the Title 24 Energy Efficiency Standards course, I am more likely to [INS: enforce/SPE: specify or comply with/OTH: recommend] Title 24 eligible energy efficient equipment, designs or practices to my clients.

1	2	3	4	5	6	7	8
Strongly disagree						Strongly agree	Doesn't apply to my position (doesn't recommend/comply) Skip to TA11

TA1 Have you applied any of the concepts taught in the Title 24 Energy Efficiency Standards course to change or enhance the service you provide to your clients?

1 Yes
2 No

[ASK IF TA1= 1, ELSE SKIP TO TA11]

TA2 What changes did you make? Did you…

[1=Yes, 2=No, 3=Don't know]

a. Specify Title 24 standards of which you were unfamiliar prior to taking the course
b. Specify Title 24 standards more frequently than prior to taking the course
c. Apply building or system design principals or elements of which you were unfamiliar prior to taking the course
d. Use diagnostic tools or practices of which you were unfamiliar prior to taking the course
e. Utilize building or system design tools or practices of which you were unfamiliar prior to taking the course
f. [OTH] Change the manner in which you install or maintain energy consuming equipment
g. [INS] Change the manner in which you enforce energy efficiency standards in new construction or major renovation projects
h. [SPE] Change the methods you use to size and specify new energy consuming equipment for my clients
i. [INS] Integrate Title 24 standards into your building plan checks

TA3b We may not have captured all of your changes in the previous question. Please describe any other changes you have made. [OPEN END]

TA3c Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to make the changes you just described?

1 2 3 4 5 6 7
Not At All Influential Very Influential

TA4 Since your attendance at the Title 24 Energy Efficiency Standards course, have the changes or enhancements you just told me about become more of a standard practice for you?

1 Yes
2 No
3 Don't know

TA5 **[Ask of each change implemented in TA2]** Approximately how many times this year (2008) have you **[read change]** to your clients? [NUMERIC OPEN END]

TA6 In your opinion, have the changes or enhancements you have made to the service you provide resulted in measurable energy savings in your clients' facilities?

1 Yes
2 No [SKIP TO TA11]
3 Don't know [SKIP TO TA11]

[ASK IF TA6=1]

TA7 In your opinion, how would you characterize the energy savings realized by your customers as a result of your participation in the course? In general would you say these are …

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TA7=1]

TA8a Have you estimated the average savings per building?

1 Yes
2 No [SKIP TO TA11]

TA8b How did you estimate electricity savings, was it in… (Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)

[ASK IF TA8B=1]

TA9 Approximately how many dollars did each customer save? [NUMERIC OPEN END]

[ASK IF TA8B=2]

TA10 Approximately how many kWh did each customer save? [NUMERIC OPEN END]

[ASK IF TA1=2]

TA11 What is the principle reason you have not incorporated any of the Title 24 concepts taught in the course?

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 The Title 24 standards aren't enforced
6 The Title 24 standards are too complex
7 Lack of product availability
8 Lack of knowledgeable contractors to implement
9 The standards are not high enough and we want to go beyond them
10 Other, Specify

Demographic Module

D0 What suggestions do you have for improving the Title 24 course?

_____

[ASK IF RESPONDENT TYPE=MA, ELSE IF RESPONDENT TYPE=EUCC SKIP TO DC1, ELSE IF RESPONDENT TYPE=EUCR SKIP TO X1]

D1 What types of energy related services or equipment does your business provide? (Check all that apply)

1 Building inspection or plan review
2 Construction
3 Engineering or architectural design
4 Lighting design assistance, sales, installation
5 HVAC equipment sales, installation, repair or maintenance
6 Refrigeration equipment sales, installation, repair or maintenance
7 Motor equipment sales, installation, repair or maintenance
8 Pumping/hydraulic equipment sales, installation, repair or maintenance
9 Other equipment sales, installation, repair or maintenance (Specify)
10 Facility operations or maintenance
11 Energy technology research/consulting
12 Other, please specify

D2 Which of the following best describes your business?

1 I/My business provides services to business customers.
2 I/My business provides services to residential customers.
3 I/My business provides services to business and residential customers.

[ASK IF D2=1 OR 3]
D3 Which market segment do you work with most often?

1. Commercial
2. Agricultural
3. Industrial

END THANK YOU FOR YOUR TIME

[ASK IF RESPONDENT TYPE =EUCC]

DC1 Thinking of other companies like yours, would you describe your company as…

1 A small company
2 A medium-sized company
3 A large company
4 Not applicable

DC2 Does your company lease or own your facility?

1 Lease
2 Own
3 Other, specify

DC3 How long has your business been at this location?

1 Less than one year
2 Years – SPECIFY
3 (Don't know)
4 (Refused)

DC4 How many locations does your firm have in California?

1 1
2 2 to 4
3 5 to 10
4 11 to 25
5 Over 25
6 (Don't know)
7 (Refused)

DC5 What is the main activity in your business?

1 Office
2 Retail (Non-food)
3 College/university
4 School
5 Grocery store
6 Convenience store
7 Restaurant
8 Health care / hospital
9 Hotel / motel
10 Warehouse
11 Personal service
12 Community service / church/ temple / municipality
13 Industrial process / manufacturing / assembly
14 Condo association / apartment management
15 Agriculture
16 Other. Specify _____.
17 (Don't know)
18 (Refused)

END **THANK YOU FOR YOUR TIME**

[ASK IF RESPONDENT TYPE=EUCR]

X1 In what type of building do you live?

1 A mobile home
2 A one-family home detached from any other house
3 A one-family home attached to one or more houses
4 A building with 2 apartments
5 A building with 3 or 4 apartments
6 A building with 5 or more apartments
7 Other, Specify

X2 About when was this building first built?

1 Before 1970s
2 1970s
3 1980s
4 1990-94
5 1995-99
6 2000s

X3 What is the approximate square footage of your residence?

1 [OPEN END]
2 (Don't know)

X4 Including yourself, how many people currently live in your home year-round?

_____ people

X5 Which of the following best describes your age?

1 Less than 18 years old
2 18-24 years old
3 25-34 years old
4 35-44 years old
5 45-54 years old
6 55-64 years old
7 65 or older

(ASK IF X4>1)

X6 Including yourself, how many people currently living in your home year-round are in the following age groups? (TOTAL SHOULD EQUAL QX4)

____ Less than 18 years old
____ 18-24 years old
____ 25-34 years old
____ 35-44 years old
____ 45-54 years old
____ 55-64 years old
____ 65 or older

X7 What is the highest level of education you have completed?

1 less than high school
2 some high school
3 high school graduate or equivalent (e.g., GED)
4 trade or technical school
5 some college
6 college degree
7 some graduate school
8 graduate degree
9 other (SPECIFY)

X8 Which of the following best represents your annual household income from all sources in 2007, before taxes? Was it . . . .?

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more

X9 What is your ethnicity?

1 White
2 Black, African American
3 American Indian or Alaska Native
4 Asian
5 Chinese
6 Japanese
7 Korean
8 Vietnamese
9 Filipino
10 Native Hawaiian
11 Guamanian or Chamorro
12 Samoan
13 Hispanic/Latina(o)
14 Other (SPECIFY)

X10 What is the primary language spoken in your home?

1 English
2 Spanish
3 Mandarin
4 Cantonese
5 Tagalog
6 Korean
7 Vietnamese
8 Russian
9 Japanese
10 Other
98 (DON'T KNOW)
99 (REFUSED)

END **THANK YOU FOR YOUR TIME**

Trainings Focusing on Energy Efficient Measures – Participant Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding a **[COURSE]** workshop held at **[location]** around **[date]**. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how household uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the [Course name] workshop. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.)

(**Timing**: This survey should take no more than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that can save energy, and your opinions about these services. Your responses will be kept confidential.

(NOTE: For all questions, "don't know" and "refused" will be coded if offered as a response.)

Screening

Around **[DATE]**, you attended a course/activity, **[COURSE NAME]**, at **[CENTER]**. To understand the impact of courses such as **[COURSE NAME]**, we ask that you complete this brief survey. The survey should take about 15 minutes for you to complete.

S1 Do you recall attending the **[COURSE NAME]** course on **[DATE]** at **[CENTER]**?

1 Yes
2 No [terminate]

S2 Are you employed by or do you have any service contracts with any public utility or Energy Centers?

1 Yes [terminate]
2 No

S3 What is your organization's primary activity? Is it . . .
(READ)

1 Office
2 Retail (non-food)
3 College/University
4 School
5 Grocery Store
6 Restaurant
7 Health Care (other than Hospital)
8 Hospital
9 Hotel or Motel
10 Warehouse
11 Construction/Contracting
12 Municipality/local government
13 Community Service/Church/Temple
14 Industrial Process/ Manufacturing/ Assembly
15 Condo Assoc/Apartment Mgr.
16 Other (Please specify)
D (DON'T KNOW)
R (REFUSED)

ATTENDEE CHARACTERIZATION

AC1 Which of the following best describes where you intend to apply the information you learned in the course? [READ CATEGORIES]

1 at my home
2 at the facility(ies) my business occupies
3 at the facility(ies) my business manages (e.g. property managers)
4 in facilities occupied or managed by customers to whom I provide services (e.g. architects, engineering firms, contractors, code inspectors)
5 somewhere else [specify]

RESPONDENT TYPE DEFINED
[Classify AC1=1 as EUCR (residential end-use customer)]
[Classify AC1=2, 3 as EUCC (commercial end-use customer)]
[Classify AC1=3, 4 as MA (market actor)]

AC3 What is your title?

1 Building inspector/supervisor
2 Building department plan checker
3 Building permit technician
4 Building official (e.g. safety, superintendents)
5 Planner
6 Architect
7 Designer
8 Draftsperson
9 Engineer
10 Buyer/Purchasing mgr/Sourcing
11 Facilities manager/operator/maintenance manager
12 Public official, managers (SPECIFY)
13 Other, specify

KNOWLEDGE

K0. What did you hope to get out of the [COURSE] course?

OPEN

K1. Did the [COURSE] course provide you with any new information?

1. Yes
2. No
3. Don't know
4. Refused

[ASK IF K1=2 or 3]
K2. Although you're not sure the course information was new, did your participation in the course make you any more likely to implement efforts to save energy that you were already considering?

1. Yes
2. No
3. Don't know
4. Refused

[IF COURSE FLAG < 6]
K2a The **[COURSE NAME]** course was a **[COURSE LENGTH]** course designed to achieve the following objectives: [USE DESCRIPTIONS BELOW].

Advanced EE [IF COURSE FLAG=1 or 2]
Educate and assist cities and businesses within the San Gabriel Valley in meeting demand reduction and energy conservation goals and provide cities and businesses with links to energy-efficiency resources such as rebates and incentives offered by SCE

Advanced EE [IF COURSE FLAG=3]
Educate and assist organizations within the San Gabriel Valley in meeting demand reduction and energy conservation goals and provide organizations with links to energy-efficiency resources such as rebates and incentives offered by SCE

Motor Efficiency [IF COURSE FLAG=5]
Present information about how to manage motors, electric motors and systems, how to implement energy efficient motors, choices available for adjustable speed drives, and the energy cost savings made possible by this technology.

Refrigeration [IF COURSE FLAG=4]
To provide information on refrigeration equipment that could help food and wine service business owners cut their utility costs.

[IF COURSE FLAG = 6 AND MULT = 1]]
K2b The **[COURSE NAME]** course was a **[COURSE LENGTH]** course designed to achieve the following objectives: [USE DESCRIPTIONS BELOW].

[IF COURSE FLAG = 6 AND MULT > 1]]
K2c The HVAC courses you attended were each one-day courses designed to update HVAC professionals on new methods, some including hands-on activities. We have you listed as attending the following courses:

[COURSE DATE	**COURSE NAME**	**COURSE LOCATION]**
[COURSE DATE	**COURSE NAME**	**COURSE LOCATION]**
[COURSE DATE	**COURSE NAME**	**COURSE LOCATION]**
[COURSE DATE	**COURSE NAME**	**COURSE LOCATION]**

HVAC [IF COURSE FLAG = 6]
Proper Procedures for Charging Air Conditioners & Heat Pumps - Provide HVAC contractors with a detailed review of checking refrigerant charge and airflow for all residential and small commercial refrigerant system types. Familiarize HVAC contractors and service mechanics with most effective methods of charging HVAC systems.

HVAC Quality Installation – Introduction to the Air Conditioning Contractors of America Quality Installation Series. Present an overview of the keys to high quality HVAC system installations. Hands-on demonstrations will be utilized. To familiarize HVAC contractors and service mechanics with most energy efficient methods of installing quality HVAC systems.

HVAC System Air Flow and Static Pressure Diagnostics - A hands-on class utilizing a full-size horizontal HVAC system to measure actual air flow and static pressure as the system is assembled. Key system accessories are interchanged to see the total effects on the system air delivery capability. Designed to instruct HVAC contractors and mechanics on the effects on energy efficiency of various air flow and pressure obstacles.

Overview of ACCA Quality Installation Standards - This course is the introduction for the Air Conditioning Contractors of America Quality Installation Series. The instructor will present an overview of the keys to high quality HVAC system installations. Hands-on demonstrations will be utilized. Designed to familiarize HVAC contractors and their personnel with ACCA Quality installation standards for HVAC systems.

Equipment Sizing & Selection Using ACCA Manual J - A computer-based class designed to cover whole house and room-by-room ACCA manual J Version 8 Load Calculation methods. The instructor also reviewed the ACCA Manual S Equipment Selection manual. Designed to instruct HVAC contractors and their personnel on the use of ACCA Manual J software.

Optimizing Air Conditioners in California's Climate. – This course covered specific ways to make air conditioning systems perform exceptionally well in California's climate, including how to get the airflow performance of a premium furnace out of a standard furnace, how to make adjustments and parts replacements to make a superior California air conditioning system, and how the air conditioner interacts with the rest of the system.

Advanced ACCA Manual D – A follow-up to the ACCA Manual D Duct Design course, this class stepped beyond the introduction to ACCA Manual D to more advanced topics, including how to perform Manual D calculations both manually and using the official Wrightsoft ACCA computer software program using computers for hands-on training and had the opportunity to work on individual problems with the instructor's assistance.

Zoning Design and Beyond – Built on the content covered in the Equipment Sizing and Selection and the ACCA Manual D Duct Design courses and covered successful ways to solve residential comfort and energy problems using zoned HVAC systems in both new and existing single-family and multifamily homes. Course content included Title 24 credit for zoning, types of zoning hardware, and real world examples of zoning solutions that work.

K3 Using a scale of 1 to 7 where 1 is no knowledge and 7 is significant knowledge, please rate the amount of knowledge you had regarding the course objectives prior to your participation in the course?

1	2	3	4	5	6	7
No Knowledge						Significant Knowledge

K4 Using a scale of 1 to 7 where 1 is no more knowledgeable and 7 is significantly more knowledgeable, as a result of your participation in this course, to what degree did your knowledge of how to achieve the objectives increase?

1	2	3	4	5	6	7
No Knowledge						Significant Knowledge

K5 I am now going to read a series of statements. Please rate your agreement with each statement using a scale of 1 to 7, where 1 is strongly disagree and 7 is strongly agree.

K5a As a result of taking the course, I am better able to implement energy efficient solutions.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

K5b As a result of taking the course, I am more aware of utility sponsored energy efficiency programs.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

[ASK IF Respondent Type = MA ELSE SKIP TO K5e]
K5c As a result of taking the course, I am now more familiar with the tools and/or techniques that will enhance the service I provide to my clients

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5d As a result of taking the course, I have more confidence when I make recommendations for improving energy efficiency at my client's facilities that the expected level of energy savings will actually occur.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

[ASK IF Respondent Type = EUCC ELSE SKIP TO A1]
K5e As a result of taking the course, I better understand how to improve the energy efficiency at my facility or the facilities I manage.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5f As a result of taking the course, I have more confidence when I take steps to improve the energy efficiency at my facility(ies) that the expected level of energy savings will actually occur.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

ATTRIBUTION

[ASK IF RESPONDENT TYPE = EUCC,
ELSE IF RESPONDENT TYPE = EUCR SKIP TO A2,
ELSE IF RESPONDENT TYPE = MA, SKIP TO A3]

A1 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A1a To what degree did the course cause you to think differently about how to take advantage of energy efficiency opportunities at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

[IF A1a>4 ask]
A1aa How do you view energy efficiency improvements differently as a result of attending the course?

A1b To what degree did the course cause you to want to take advantage of energy efficiency opportunities at your facility?

1 2 3 4 5 6 7

Not At All A Great Deal

A1c To what degree did the course increase your awareness of methods for taking advantage of energy efficiency opportunities at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

[SKIP TO TC1]

A2 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A2a To what degree did the course cause you to think differently about how to take advantage of energy efficiency opportunities at your home?

1 2 3 4 5 6 7
Not At All A Great Deal

[IF A2a>4 ask]
A2aa How do you view energy efficiency improvements differently as a result of attending the course?

A2b To what degree did the course cause you to want to take advantage of energy efficiency opportunities at your home?

1 2 3 4 5 6 7
Not At All A Great Deal

A2c To what degree did the course increase your awareness of methods for taking advantage of energy efficiency opportunities at your home?

1 2 3 4 5 6 7
Not At All A Great Deal

[SKIP TO TC1]

A3 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A3a To what degree did the course cause you to think differently about how to take advantage of opportunities to introduce energy efficient elements to the work you do for your clients?

1 2 3 4 5 6 7
Not At All A Great Deal

[IF A3a>4 ask]
A3aa How do you view energy efficiency improvements differently as a result of attending the course?

A3b To what degree did the course cause you to want to take advantage of energy efficiency opportunities to introduce energy efficient elements to the work you do for your clients?

1	2	3	4	5	6	7
Not At All						A Great Deal

A3c To what degree did the course increase your awareness of methods for introducing energy efficient elements to the work you do for your clients?

1	2	3	4	5	6	7
Not At All						A Great Deal

ACTIONS TAKEN – EUCC

[ASK IF Respondent Type = EUCC
ELSE IF Respondent Type =EUCR SKIP TO TR1
ELSE SKIP TO QTA0]

TC1 Using a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statements:

d. As a result of taking the course, I recommend energy efficient technologies or practices to my management more often.
e. As a result of taking the course, I am better prepared to evaluate energy efficient options
f. As a result of taking the course, my recommendations regarding energy efficient technologies or practices are viewed by my management as more informed.

1	2	3	4	5	6	7	8
Strongly disagree						Strongly agree	Not Applicable

TC2 Since your participation in the [COURSE NAME] course, have you made any efforts to save energy at the facility[ies] your business occupies or manages where you applied the concepts taught in the course?

1 Yes
2 No
3 Don't know

[ASK IF TC2=1]
TC3 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to make the effort to save energy at your facility[ies]?

1	2	3	4	5	6	7
Not At All Influential						Very Influential

[ASK IF TC2=2 or 3]

TC4 Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely is it that you will make an effort within the next 12 months, to save energy at the facility[ies] your business occupies or manages using the concepts taught in the course?

1	2	3	4	5	6	7
Not at all likely					Very likely	

[ASK IF TC2= 2 or 3 AND TC4<4]
TC5 What are the principal reasons you have not, and do not plan to use the concepts taught in the course to save additional energy at your facility(ies)? Select all that apply.

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 Lack of product availability
6 Lack of knowledgeable contractors to implement
7 Other, Specify

TC6 Since you participated in the course, have you:

[Yes =1, No =2, Ask for each]

e. Sought out additional information related to the concepts taught in the course?
f. Shared information you learned in the course with a colleague?
g. Helped convince others in your organization that energy saving actions are needed?
h. Helped convince others outside of your organization that certain types of actions help save energy?

TC7 Have you had an audit done at a facility you occupy or manage within the past 3 years?

1 Yes
2 No
3 Don't know

[IF NO AUDIT (TC7=2)]
TC8 Why have you not had an audit done?

1 We feel it is too costly
2 Is not worth the time and effort
3 Do not need services provided by the audit
4 Interested by have not gotten around to it
5 Do not know how to participate/didn't know it was available
6 Do not want to participate
7 Do not need equipment
8 Other [RECORD]
D Don't know

[Skip to MM1]

[IF AUDIT DONE (TC7=1)]

TC9 Did you take any actions as a result of that audit?

1 Yes
2 No
3 Don't know

TC10 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to have an audit done at your facility[ies]?

1	2	3	4	5	6	7	9
Not At All Influential					Very Influential		Audit prior to training

ACTIONS TAKEN – EUCR

TR1 Since you participated in the course, have you made any efforts, such as installing new energy efficient equipment, to save energy in your home where you applied the concepts taught in the course?

1 Yes
2 No
3 Don't know

TR2. Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely are you to take action or make changes within the next 12 months, such as installing new energy efficient equipment, to save energy at your home using the concepts taught in the course?

1	2	3	4	5	6	7
Not at all likely					Very likely	

[ASK IF TR1= 2 or 3 AND TR2 <4]
TR3 What are the principal reasons you have not implemented any energy saving actions after attending the course. Select all that apply.

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 Lack of product availability
6 Lack of knowledgeable contractors to implement
7 Other, Specify

TR4 Since you participated in the course, have you:

[Yes =1, No =2, Ask for each]

c. Sought out additional information related to the concepts taught in the course?
d. Shared information you learned in the course with a family member, friend or neighbor?

TR5 Have you had an audit done at your home?

1 Yes
2 No
3 Don't know

[ASK IF NO AUDIT (TR5=2)]

TR6 Why have you not had an audit done?

1 We feel it is too costly
2 Is not worth the time and effort
3 Do not need services provided by the audit
4 Interested by have not gotten around to it
5 Do not know how to participate/didn't know it was available
6 Do not want to participate
7 Do not need equipment
8 Other [RECORD]
D Don't know

[SKIP TO TR9]

[ASK IF AUDIT DONE (TR5=1)]

TR7 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to have an audit done at your home?

1	2	3	4	5	6	7	9
Not At All Influential					Very Influential		Audit prior to training

[ASK IF AUDIT DONE (TR5=1)]

TR8 Did you take any actions as a result of that audit?

1 Yes
2 No
3 Don't know

[ASK IF TR1=1 or TR8=1]

TR9 Please describe any changes you have made?

[OPEN END]

[ASK IF TR1=1 or TR8=1]

TR10 Using a scale of 1 to 10 where 1 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to make the changes you just described?

1	2	3	4	5	6	7	8	9	10
Not At All Influential								Very Influential	

TR11 In your opinion, have the changes or enhancements you have made to your home resulted in measurable energy savings?

1 Yes
2 No
3 Don't know

[ASK IF TR11=1]

TR12 In your opinion, how would you characterize the energy savings you realized as a result of your participation in the course? In general would you say these are …

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TR12=1]

TR13 Have you estimated your average savings?

1 Yes
2 No [SKIP TO D0]

TR14 How did you estimate electricity savings, was it in… (Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)

[ASK IF TR14=1]

TR15 Approximately how many dollars did you save?

[NUMERIC OPEN END]

[ASK IF TR14=2]

TR16 Approximately how many kWh did you save?

[NUMERIC OPEN END]

MEASURES INSTALLED

MM1 There are many energy saving actions that businesses can take. Since the training have you...?

[ASK EACH AND RECORD 1=yes or 2=no]

1 Added or replaced refrigeration equipment
2 Added tinted window film
3 Added interior shades/blinds
4 Added exterior awnings
5 Added weatherization (window caulking, weather stripping)
6 Replaced a dishwasher
7 Added insulation
8 Added an attic exhaust fan
9 Added a white roof
10 Replaced windows
11 Replaced a water heater
12 Added controls (EMS, Prog therm, sensors, timer, dimmer, cycle mgr, VSD)
13 Replaced heating/cooling system
14 Added pre-rinse spray valve
15 Added Photovoltaics
16 Replaced lighting (T5, T8, CFL, LED Exits, induction lamps)
17 Had an HVAC tune up
18 Added or replaced motors
19 Other (specify)

[ASK IF MM1_16=yes]

MM2. You indicated that you have installed energy efficient lighting to save energy at your facility(ies). Have you made any of the following changes to the lighting equipment at your facility(ies)?

[Yes =1, No =2, Ask for each]

a. Replaced existing lighting fixtures with more efficient fixtures (Retrofit of existing fixtures)
b. Installed energy efficient lighting fixtures or bulbs where there were previously no existing fixtures
c. Removed existing lighting fixtures without replacement (de-lamping)
d. Changed lighting repair and maintenance practices
e. Changed lighting system operations

[ASK IF MM2a=yes or MM2b=yes]

MM3. Which of the following types of lighting fixtures were installed in your efforts to save energy at your facility(ies)?
[Yes =1, No =2, Ask for each]

a. T5 or T8
b. CFL
c. LED exit signs
d. Induction lamps

e. Other efficient lighting

[ASK IF MM1_12=yes]

MM4. You indicated that you have installed energy efficient controls to save energy at your facility(ies). Which of the following types of controls have you installed?

[Yes =1, No =2, Ask for each]

a. Occupancy sensors on lighting
b. Timers on lighting
c. Dimmers on lighting
d. Daylighting controls
e. Energy management system (EMS)
f. Programmable thermostat
g. Other HVAC controls (specify)
h. Adjustable/variable speed drive on motor
i. Voltage and current regulators

[ASK IF MM1_13=yes]

MM5 You indicated that you have replaced heating or cooling units to save energy at your facility(ies). Which of the following types of HVAC units have you installed?

[Yes =1, No =2, Ask for each]

a. Packaged AC (cooling only)
b. Split AC
c. Chiller
d. Packaged AC (cooling and heating in same unit)
e. Air cooled heat pump
f. Geothermal heat pump
g. Evaporative cooler
h. Heating unit
i. Other

[ASK IF MM1_1=yes]

MM5x You indicated that you added or replaced refrigeration equipment to save energy at your facility(ies). Which of the following equipment did you install or replace?

[Yes =1, No =2, Ask for each]

a. Display Case
b. Reach-in/Roll-in
c. Vending Machine
d. Ice Machine
e. Other

[ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS]

MM6. Using a scale of 1 to 10 where 1 means not at all influential and 10 means very influential, how much influence did the information provided in the workshop have on your decision to ***[MEASURE from MM1]***?

1 2 3 4 5 6 7 8 9 10

Not At All Influential Very Influential

[IF MM6<5- ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS]

MM6a In your own words, what influenced your decision to ***[MEASURE from MM1]***?

[ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS]

MM7. In the course of ***[MEASURE from MM1]***, did you or any party to this project receive financial assistance through a utility program to help you install the equipment?
[Financial assistance includes loans, rebates, incentives or grants.]

1 Yes
2 No
3 Don't know

[IF MM7=1 - ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS ELSE SKIP TO next section]

MM8 Through which program(s) did you receive financial assistance? [INDICATE ALL THAT APPLY]

1 PGE – ABAG
2 PGE – AMBAG
3 PGE – Redwood
4 PGE – SVEW (Silicon Valley Energy Watch)
5 SCE – Ventura County
6 SCE – Bakersfield-Kern
7 SCE – San Gabriel Valley
8 SCE – UC/CSU
9 SCE – LGEAR/Mammoth Lakes
10 SCE – LGEAR/Ridgecrest
11 SDGE – Chula Vista
12 SCE program (name unknown)
13 PGE program (name unknown)
14 SCG program (name unknown)
15 SDGE program (name unknown)
16 Other (SPECIFY)

[IF MM7=1 - ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS ELSE SKIP TO next section]

MM9 Did the course provide you information about the utility program in which you participated?

1 Yes
2 No
3 Don't know

[IF MM9=1 - ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS ELSE SKIP TO next section]

MM10 Using a scale of 1 to 10 where 1 means not at all influential and 10 means very influential, how much influence did the information provided in the workshop have on your decision to participate in the utility program?

1 2 3 4 5 6 7 8 9 10

Not At All Influential Very Influential

[IF MM9=1 - ASK FOR EACH TYPE INSTALLED TO FILTER BEFORE SAVINGS QUESTIONS ELSE SKIP TO next section]

MM11 Using a scale of 1 to 10 where 1 means not at all influential and 10 means very influential, how much influence did the financial assistance have on your decision to ***[MEASURE from MM1]***?

1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

[IF MM7=1 for all measures – SKIP TO BM1]
[ELSE ask specific equipment questions where MM7 is not equal to 1]

MEASURE SPECIFICS

[IF MM1_1=1 REFRIGERATION]
[IF MM5x=1 Display Case]

M1a You mentioned that you installed a display case. Was this a new display case or did it replace an existing display case?

1 New
2 Replaced existing

[IF M1a=1, SKIP to M1ab]

M1aa What type of display case was replaced?

1 open top w/ one shelf,
2 open top w/ one shelf as a unitized back-to-back case,
3 open front w/ multiple shelves, upright w/ glass doors)

M1ab What type of display case was installed?

1 open top w/ one shelf,
2 open top w/ one shelf as a unitized back-to-back case,
3 open front w/ multiple shelves, upright w/ glass doors)

[IF M1a=1, SKIP to M1ad]

M1ac What was the operating temperature of the replaced unit?

1 medium = 38 +/- 2°F,
2 low = 0 +/- 2°F,
3 ice-cream = -15 +/- 2°F

M1ad What was the operating temperature of the new unit?

1 medium = 38 +/- 2°F,
2 low = 0 +/- 2°F,
3 ice-cream = -15 +/- 2°F

[IF M1a=1, SKIP to M1af]

M1ae What was the total display area of the replaced unit?

_____ (cu ft, sq ft, or linear ft)

M1af What is the total display area of the new unit?

_____ (cu ft, sq ft, or linear ft)

[IF M1a=1, SKIP to M1ah]

M1ag Was the replaced unit equipped with an anti-sweat heater control?

1 Yes
2 No
3 Don't recall

[IF M1a=1, SKIP to M1ai]

M1ah How old was the refrigerator that was replaced?

M1ai Is the new unit equipped with an anti-sweat heater control?

1 Yes
2 No
3 Don't recall

M1aj What is the orientation of the new display case? Is it vertical, semi-vertical, or horizontal?

1 vertical
2 semi-vertical
3 horizontal

[IF MM5x=2 Reach-in/Roll-in]

M1b You mentioned you installed a reach-in/roll-in refrigerator. Was this a new reach-in/roll-in refrigerator or did it replace an existing unit?

1 New
2 Replaced existing

[IF M1b=1, SKIP to M1bb]

M1ba What was the volume of the replaced refrigerator in cubic feet?

_____ *(cu ft)*

M1bc What was the volume of the new refrigerator in cubic feet?

_____ *(cu ft)*

[IF MM5x=3 Vending Machine]

M1c You mentioned that you installed a vending machine. Was this a new vending machine or did it replace an existing machine?

1 New
2 Replaced existing

[IF M1c=1, SKIP to M1cb]

M1ca Did the old vending machine include energy saving software?

1 Yes
2 No
3 Don't recall

M1cb Does the new vending machine include energy saving software?

1 Yes
2 No
3 Don't recall

[IF M1c=1, SKIP to M1cd]

M1cc What was the capacity of the old vending machine in cans?

_____ cans/bottles

M1cd What is the capacity of the new vending machine in cans?

_____ cans/bottles

[IF MM5x=4 Ice Machine]

M1d You mentioned that you installed an ice machine. Was this a new ice machine or did it replace an existing machine?

1 New
2 Replaced existing

[IF M1d=1, SKIP to M1db]

M1da What type of ice machine was replaced?

1 Ice making head (IMH)
2 Remote condensing unit (RCU)
3 Split system unit
4 Self contained unit (SCU)

M1db What type of ice machine was the new unit?

1 Ice making head (IMH)
2 Remote condensing unit (RCU)
3 Split system unit
4 Self contained unit (SCU)

[IF M1d=1, SKIP to M1dd]

M1dc What was the harvest rate of the replaced ice machine

_____ (lbs ice/day)?

M1dd What is the harvest rate of the new ice machine

_____ (lbs ice/day)?

M1e What other steps did you take to improve your refrigeration efficiency?
(Read list and select all that apply)

1 Install Anti-Sweat Heaters
2 Install an EMS
3 Implement Mechanical Sub-Cooling
4 Implement Ambient Sub-Cooling
5 Install Liquid Pressure Amplifiers
6 Use High-Efficiency Evaporator Fans
7 Control Floating Condenser Head Pressure
8 Control Floating Condenser Suction Pressure
9 Use Evaporator Fan Controller, Cycling
10 Improved Insulation
11 Install Strip Curtain on Walk-in Boxes
12 Add Auto Door-Closers
13 NO OTHER STEPS TAKEN

[IF M1e=1 Install Anti-Sweat Heaters]

M1fa You mentioned that you installed anti-sweat heaters. On how many refrigerators were the anti-sweat heaters installed?

_____ number

M1fb How old were the refrigerators that they anti-sweat heaters were added to?

M1fc [If efficiency unknown]
How old is the refrigerator where the anti-sweat heater was installed?

M1fd What is the refrigerator capacity (in tons) where the anti-sweat heater was installed?

OPEN

M1fe On what type of equipment was the anti-sweat heater installed?
(Check all that apply)

1 display case
2 reach-in refrigerator
3 reach-in freezer
4 other (specify)

[IF M1e=2 Install an EMS]

M1ga You mentioned that you installed an EMS. What was the energy use of refrigeration system before the EMS was installed?

M1gb What is the energy use of refrigeration system after the EMS was installed?

[IF M1e=3 Implement Mechanical Sub-Cooling]

M1ha You mentioned that you implemented mechanical sub-cooling. How many systems were affected by the mechanical sub-cooling?

_____ number

M1hb How old is the refrigerator or affected?

M1hc What is the refrigerator capacity (in tons) affected?

OPEN

[If capacity unknown]
M1hd What are cu ft, sq ft, or linear ft of refrigerator affected?

OPEN

M1he How many sub-coolers were installed?

M1hf Are they powered by a medium- or high-temperature suction group?

1 medium-temperature
2 high-temperature

M1hg What is the sub-cooler temperature?

_____ (degrees)?

[IF M1e=4 Implement Ambient Sub-Cooling

M1ia You mentioned that you implemented ambient sub-cooling. How many refrigerators were affected by the ambient sub-cooling?

_____ number

M1ib What type of equipment was affected by the ambient sub-cooling?
(Check all that apply)

1 display case
2 reach-in refrigerator
3 reach-in freezer
4 other (specify)

M1ic Did you install an oversized condenser or an additional heat exchanger?

1 oversized condenser
2 additional heat exchanger
3 neither

[IF M1e=5 Install Liquid Pressure Amplifiers

M1ja You mentioned that you installed liquid pressure amplifiers. How many pumps were installed?

_____ number

M1jb Is your condenser air-cooled or water-cooled?

[IF M1e=6 Use High-Efficiency Evaporator Fans

M1ka You mentioned that you use high-efficiency evaporator fans. How many fans are you using?

M1kb On how many refrigerators are they being used?

M1kc How old are the refrigerators equipped with the fans?

M1kd What type of fan system was added?

1 Shaded-pole
2 Electronically Commutated (EC)
3 Permanent Split Capacitor (PSC)

[If M1kd=2]

M1ke What is the length (in ft) of the refrigeration system where the evaporator fans are used?

[If M1kd=3]

M1kf How many motors used with the fan system?

[IF M1e=7 Control Floating Condenser Head Pressure

M1la You mentioned that you control floating condenser head pressure. How old is the condenser?

M1lb What is the capacity (in tons) of the refrigerator affected?

[If capacity unknown]

M1lc What is the cu ft, sq ft, or linear ft of refrigerator?

M1ld Does the system use evaporative or air cooling?

M1le Is the setpoint fixed or variable?

M1lf Does it include a variable-speed fan control?

M1lg What is the SCT set-point (in degrees)?

M1lh What is the Energy Star rating?

[IF M1e=8 Control Floating Condenser Suction Pressure

M1ma You mentioned that you control floating condenser suction pressure. What is the age of the condenser (or refrigerator)

M1mb What is the capacity (in tons) of the refrigerator affected?

[If capacity unknown]
M1mc What is the cu ft, sq ft, or linear ft of refrigerator?

M1md What is the SST set-point (in degrees)?

M1me What is the Energy Star rating?

[IF M1e=9 Use Evaporator Fan Controller, Cycling]

M1na You mentioned that you use evaporator fan controller or cycling. How many fans does this system affect?

M1nb How many refrigerators are affected?

M1nc What is the age of the fan motor *(or refrigerator)*

[IF M1e=10 Improved Insulation]

M1oa You mentioned that you improved insulation. On how many refrigerators did you improve the insulation?

M1ob What is the age of the refrigerator that was insulated?

M1oc What is the refrigerator capacity (in tons) that received the additional insulation?

M1od What type of refrigeration unit received additional insulation?

1 display case
2 reach-in refrigerator
3 beverage merchandiser
4 ice machine
5 reach-in freezer
6 vending machine

[IF M1e=11 Install Strip Curtain on Walk-in Boxes]

M1pa You mentioned that you installed strip curtains on walk in boxes. How old were the walk-in boxes where the strip curtains were installed?

M1pb What was the display case length (in ft) where the strip curtains were installed?

M1pc On how many cases were the strip curtains installed?

[IF M1e=12 Add Auto Door-Closers]

M1qa You mentioned that you added auto door closers. On how many doors did you add these?

M1qb How many were added to walk-in coolers?

M1qc How many were added to walk-in freezers?

M1r What additional equipment installation and/or system design or redesign have you done for refrigeration?

1 Install High-Efficiency Compressor
2 Utilize Sub-Cooling in Compressor
3 Use High Efficiency Condenser
4 Use Efficient Fan in Condenser
5 Use Efficient Fan Motor in Condenser
6 Lower Condensing Temperature on Cycle Efficiency
7 Install Efficient Fan Motor ECM or PSC in Evaporator
8 Pressure Reset
9 Implement Microprocessor-Based Control Systems
10 Install Vending machine that Includes a Passive Infrared Occupancy Sensor.
11 Use Thermal Energy Storage to Take Advantage of Lower Energy Costs During Non-Peak Hours
12 Reduce Temperature Lift
13 Perform Commissioning
14 Implement Heat Reclaim
15 Install Insulation on Bare Suction Line
16 Use Night Covers/Doors
17 Install Glass Doors w/Low Anti-Sweat Heat
18 Install or Implement Lids
19 Install Occupancy Sensors for Walk-in and Break Rooms and Store Rooms
20 Use Efficient Defrost

M1s What other operational changes and/or repair and maintenance practices have you implemented for refrigeration?

1 Load Products Properly
2 Monitor All Critical Refrigeration Pressures and Temperatures; Check the Cleanliness of Evaporator and Condenser Coils
3 Verify Sequence of Operations
4 Provide Diagnostics for Operator
5 Calibrate Sensors
6 Use Timer to Make Ice During Off Peak Hours or at Night
7 Maintain Equipment, Insulation, Refrigerant Charge, Infiltration Barriers, and Moisture Barriers
8 Energy use Analysis

M1t Could you please describe for me what you had done?

(IF MM1_2=1 WINDOW FILM)

M2a You indicated that you installed window film to save energy.
What color is the window film you installed?

1 Amber
2 Silver
3 Nickel
4 Neutral/Clear
5 Bronze
6 Green
7 Grey
8 Blue
9 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M2b What type of window film did you install?

1 Tinted
2 Reflective
3 Low-e
4 Spectrally selective
5 Other (specify)

(IF WINDOW FILM)

M2c On what percentage of your window area did you install the film for each side of the building?

1 North facing windows _____%
2 South facing windows _____%
3 East facing windows _____%
4 West facing windows _____%
D (DON'T KNOW)
R (REFUSED)

M2d What is the typical number of panes on the windows with film?

1 Single
2 Double
3 Triple
4 Quadruple
5 Other (specify)

(IF MM1_3=1 INTERIOR SHADES/BLINDS)

M3a You indicated that you installed interior shades/blinds to save energy. What type of shades or blinds did you purchase?

1 Drapes or curtains
2 Horizontal blinds
3 Vertical blinds
4 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3b What time of the day do you typically keep these shades/blinds drawn or closed? (READ LIST IF NECESSARY. INDICATE ALL THAT APPLY)

1 All the time
2 Early morning (6:00 AM-9:00 AM)
3 Late morning (9:00 AM-11:00 AM)
4 Noon (11:00 AM-1:00 PM)
5 Mid-afternoon (1:00 PM-3:00 PM)
6 Late afternoon (3:00 PM-5:00 PM)
7 Early evening (5:00 PM-7:00 PM)
8 Late evening (7:00-MORNING)
9 Not at all
10 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M3c On what percent of windows did you install these shades/drapes?

ENTER PERCENT OF WINDOWS __
D (DON'T KNOW)
R (REFUSED)

(IF MM1_4=1 EXTERIOR AWNINGS)

M4a You indicated that you installed exterior awnings to save energy. What size are the awnings you installed?

ENTER SIZE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

M4b How high are the awnings above the windows?

ENTER DISTANCE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

M4c How far do the awnings extend outward?

ENTER DISTANCE IN FEET __ INCHES __
D (DON'T KNOW)
R (REFUSED)

M4d On what percent of your windows did you install these awnings?

ENTER PERCENT OF WINDOWS __
D (DON'T KNOW)
R (REFUSED)

(IF MM1_5=1 WEATHERIZATION)

M5a You indicated that you installed weatherization to save energy. Which of the following weatherization methods have you taken?

1 Weatherstripping on windows
2 Weatherstripping on doors
3 Caulking on windows
4 Caulking on doors
5 Outlet or switch plate gaskets
6 Other (specify)

M5b What was the percent of total door/window area that was weatherized?

1 Perimeter door area weatherized _____%
2 Window area weatherized _____%

(IF MM1_6=1 DISHWASHER)

M6a You indicated that you replaced a dishwasher to save energy. What type of dishwasher did you install?

1 Under counter
2 Door type
3 Single tank
4 Multi-tank
5 Residential dishwasher
6 Other (Specify)
D (DON'T KNOW)
R (REFUSED)

M6b Is the dishwasher a high-temperature dishwasher?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

M6c Do you have a booster water heater?

1 Yes
2 No [SKIP]
D (DON'T KNOW)
R (REFUSED)

M6d What type of fuel does your booster water heater use? (INDICATE ALL THAT APPLY)

1 Gas
2 Electric
3 Propane
4 Solar
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

M6e Approximately how many times do you run your dishwasher each day?

1 _____ RECORD TIMES
D (DON'T KNOW)
R (REFUSED)

(IF MM1_7=1 INSULATION ADDED OR IMPROVED)

M7a You indicated that you added or improved insulation to save energy.
Did you add insulation in the walls, the ceiling or both?

1 Wall Only
2 Ceiling Only
3 Both
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH)

M7b Did you have insulation in the walls before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH AND PREVIOUSLY HAD INSULATION IN WALLS)

M7c What was the R value of the wall insulation previously?

__ R VALUE
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO WALLS OR BOTH)

M7d And how many walls did you insulate?

__ NUMBER OF WALLS INSULATED
77 (DON'T KNOW)
99 (REFUSED)

(IF INSULATION ADDED TO CEILINGS)

M7e Did you have insulation in the ceilings before adding this insulation?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF INSULATION ADDED TO CEILINGS OR BOTH AND PREVIOUSLY HAD INSULATION IN THE CEILINGS)

M7f What was the R value of the ceiling insulation previously?

__ R VALUE
77 (DON'T KNOW)
99 (REFUSED)

(IF RR4r2b = DK/REFUSED)

M7g How many inches of ceiling insulation did you have before you added more?

__ ENTER INCHES OF INSULATION
77 (DON'T KNOW)
99 (REFUSED)

(IF MM1_8=1 ATTIC EXHAUST FAN)

M8a You indicated that you installed an attic exhaust fan to save energy.
What size is the attic exhaust fan that you installed?

ENTER SIZE IN INCHES __
D (DON'T KNOW)
R (REFUSED)

M8b What type of roof did you have at the time of the audit?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M8c What color was the roof at the time of the audit?

1 Aluminum Paint
2 Black
3 Brown
4 Gray
5 Green
6 Orange
7 Red
8 Silver
9 White
10 Yellow
11 Other (specify)

(IF MM1_9=1 WHITE ROOF)

M9a You indicated that you added a white roof to save energy. What type of roof did you have previously?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M9b What color was the roof previously?

12 Aluminum Paint
13 Black
14 Brown
15 Gray
16 Green
17 Orange
18 Red
19 Silver
20 White
21 Yellow
22 Other (specify)

M9c What type of roof do you now have?

1 Asphalt/Composite
2 Wood shingles or shakes
3 Metal
4 Tile (concrete or clay)
5 Slate
6 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

M9d What color is the roof you have now?

1 Aluminum Paint
2 Black
3 Brown
4 Gray
5 Green
6 Orange
7 Red
8 Silver
9 White
10 Yellow
11 Other (specify)

(IF MM1_10=1 WINDOWS REPLACED)

M10a You indicated that you replaced windows to save energy.
What percent of your windows were replaced?

1 North facing windows _____%
2 South facing windows _____%
3 East facing windows _____%
4 West facing windows _____%
D (DON'T KNOW)
R (REFUSED)

M10b What was the solar heat gain coefficient (SHGC) on your old windows?

M10c What is the solar heat gain coefficient SHGC on your new windows?

M10d Which of the following best describes the windows before being replaced? Were they single pane, double pane, triple pane, quadruple pane or something else?

1 Single pane
2 Double pane - → Are the windows air filled or argon filled?
3 Triple pane - → Are the windows air filled or argon filled?
4 Quadruple pane - → Are the windows air filled or argon filled?
5 Other (Specify) _____
D (DON'T KNOW)
R (REFUSED)

M10e Did you also replace the frames at the same time you replaced the windows?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF FRAMES REPLACED)

M10f What type of frames were installed before they were replaced?

1 Aluminum
2 Vinyl
3 Wood
4 Insulated fiberglass or vinyl
5 Structural glazing [define]
6 Other
D (DON'T KNOW)
R (REFUSED)

(IF M10f = 1)

M10g Does it have a thermal break?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

M10h What type of glass were the windows before being replaced?

1 Clear
2 Tint
3 Reflective
4 Low-e
5 Spectrally selective (secondary: U-factor, SHCG, VT)
6 Insulated glass (IG)
7 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF MM1_11=1 REPLACED WATER HEATER)

You indicated that you replaced a water heater to save energy.

	…old water heater	…new water heater
What type of hot water heater was/is the 1 Conventional storage water heater 2 Demand (tankless or instantaneous) water heater 3 Heat pump water heater 4 Solar water heater 5 Tankless coil and indirect water heater 6 Boiler 7 Other (specify)	**M11a**	**M11b**
What was/is the Energy factor of the	**M11c**	**M11d**
What was/is the Rated input (kW or kBtuh) of the	**M11e**	**M11f**
What was/is the Fuel type of the 1 Natural gas 2 Electric 3 Propane 4Other (specify)	**M11g**	**M11h**
What was/is the Recovery efficiency of the	**M11i**	**M11j**
What was/is the Tank thermostat set point (oF) of the	**M11k**	**M11l**
What was/is the location of the … 1 conditioned space 2 unconditioned space	**M11m**	**M11n**

M11o How many occupants are there in the building with the new water heater?

_____ number of occupants

M11p Was the old water heater . . . .? (READ LIST)

1 Very small: Less than 30 gallons
2 Small: 30-39 gallons
3 Medium: 40-59 gallons
4 Large: 60 gallons or more
D (DON'T KNOW)
R (REFUSED)

M11q Prior to the water heater replacement, did you insulate your water heater or pipes? [NOTE: COULD INCLUDE TANK WRAP, BLANKET,ETC.)

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

(IF MM1_12=1 CONTROLS)

Occupancy sensors on lighting

[ASK IF MM4a=1]

You indicated that you installed occupancy sensors to save energy.

AREAS	**M12aa**. Where are the occupancy sensors installed?	**M12ab**. What are the kW of lighting controlled in each area.	**M12ac**. What is the square footage of area controlled?	**M12ad**. Were there any controls on the lights before replacement?
Office				
Hallway				
Restroom				
Classroom				
Meeting room				
Manufacturing area				
Other (describe)				

[REPEAT THE FOLLOWING QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

M12ae What percent of the lights were on during operating hours before the installation of the occupancy sensors?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M12af What percent of the lights were on during non-operating hours before the installation of the occupancy sensors?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

Military time	Start time (lights on) (AFTER)	End time (lights off) (AFTER)	Start time (lights on) (BEFORE)	End time (lights off) (BEFORE)
Mon – Fri:	**M12ag**	**M12aj**	**M12am**	**M12ap**
Saturday:	**M12ah**	**M12ak**	**M12an**	**M12aq**
Sunday:	**M12ai**	**M12al**	**M12ao**	**M12ar**

M12as Please describe any seasonal variation BEFORE the occupancy sensors were installed

OPEN

M12at Please describe any seasonal variation AFTER the occupancy sensors were installed

OPEN

M12au Please describe any differences between BEFORE and AFTER the occupancy sensors were installed

OPEN

M12av What type of lights are now controlled by occupancy sensors?
[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

1 T5
2 T8
3 T8HO (high output),
4 T5HO (high output),
5 Thermal T8 (for use in refrigerator cases),
6 T10
7 T12
8 Metal halide,
9 Pulse start Metal halide,
10 Mercury vapor,
11 High pressure sodium,
12 Low pressure sodium,
13 Traditional halogen,
14 Halogen infra-red (IR),
15 Reflector lamp,
16 Ceramic metal halide,
17 Probe start ceramic metal halide,
18 Light emitting diodes (LEDs), and
19 Pulse start ceramic metal halides,
20 Compact fluorescent lightbulbs (CFLs),
21 Incandescent

Timers on lighting
[ASK IF MM4b=1]

You indicated that you installed timers on lighting to save energy.

AREAS	**M12ba**. Where are the occupancy sensors installed?	**M12bb**. What are the kW of lighting controlled in each area.	**M12bc**. What is the square footage of area controlled?	**M12bd**. Any controls on lights before replacement. Describe.
Office				
Hallway				
Restroom				
Classroom				
Meeting room				
Manufacturing area				
Other (describe)				

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

M12be What percent of the lights were on during operating hours before the timers were installed?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M12bf What percent of the lights were on during non-operating hours before the timers were installed?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

Military time	Turn lights on (AFTER)	Turn lights off (AFTER)	Lights on (BEFORE)	Lights off (BEFORE)
Mon – Fri:	**M12bg**	**M12bj**	**M12bm**	**M12bp**
Saturday:	**M12bh**	**M12bk**	**M12bn**	**M12bq**
Sunday:	**M12bi**	**M12bl**	**M12bo**	**M12br**

M12bs Please describe any seasonal variation BEFORE the timers were installed

OPEN

M12bt Please describe any seasonal variation AFTER the timers were installed

OPEN

M12bu Please describe any differences between BEFORE and AFTER the timers were installed
OPEN

M12bv What type of lights are now controlled by timers?

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

1 T5
2 T8
3 T8HO (high output)
4 T5HO (high output)
5 Thermal T8 (for use in refrigerator cases)
6 T10
7 T12
8 Metal halide
9 Pulse start Metal halide
10 Mercury vapor
11 High pressure sodium
12 Low pressure sodium
13 Traditional halogen
14 Halogen infra-red (IR)
15 Reflector lamp
16 Ceramic metal halide
17 Probe start ceramic metal halide
18 Light emitting diodes (LEDs)
19 Pulse start ceramic metal halides
20 compact fluorescent lightbulbs (CFLs)
21 incandescent

Dimmers on lighting

[ASK IF MM4c=1]

You indicated that you installed dimmers on lighting to save energy.

AREAS	**M12ca**. Where are the occupancy sensors installed?	**M12cb**. What are the kW of lighting controlled in each area.	**M12cc**. What is the square footage of area controlled?	**M12cd**. Any controls on lights before replacement. Describe.
Office				
Hallway				
Restroom				
Classroom				
Meeting room				
Manufacturing area				
Other (describe)				

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

M12ce What percent of the lights were on during operating hours before the dimmers were installed?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M12cf What percent of the lights were on during non-operating hours before the dimmers were installed?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

Military time	Dimmer Start time (AFTER)	Dimmer End time (AFTER)	Start time (BEFORE)	End time (BEFORE)
Mon – Fri:	**M12cg**	**M12cj**	**M12cm**	**M12cp**
Saturday:	**M12ch**	**M12ck**	**M12cn**	**M12cq**
Sunday:	**M12ci**	**M12cl**	**M12co**	**M12cr**

M12cs Please describe any seasonal variation BEFORE the dimmers were installed

OPEN

M12ct Please describe any seasonal variation AFTER the dimmers were installed

OPEN

M12cu Please describe any differences between BEFORE and AFTER the dimmers were installed

OPEN

M12cv What type of lights are now controlled by dimmers?

[REPEAT QUESTION FOR EACH SPACE WHERE THE CONTROLS WERE INSTALLED]

1 T5
2 T8
3 T8HO (high output)
4 T5HO (high output)
5 Thermal T8 (for use in refrigerator cases)
6 T10
7 T12
8 Metal halide
9 Pulse start Metal halide
10 Mercury vapor
11 High pressure sodium
12 Low pressure sodium
13 Traditional halogen
14 Halogen infra-red (IR)
15 Reflector lamp
16 Ceramic metal halide
17 Probe start ceramic metal halide
18 Light emitting diodes (LEDs)
19 Pulse start ceramic metal halides
20 compact fluorescent lightbulbs (CFLs)
21 incandescent

Daylighting controls

[ASK IF MM4d=1]

M12da You indicated that you installed daylighting controls to save energy. What type of daylighting controls were installed?

1 Side lighting
2 Top lighting
3 Other (specify)

M12db Was the control type continuous, 1-step, 2-step or something else?

1 Continuous
2 1-step
3 2-step
4 Other (specify)

M12dc What type of lights are controlled by the daylighting equipment?

1 T5
2 T8
3 T8HO (high output)
4 T5HO (high output)
5 Thermal T8 (for use in refrigerator cases)
6 T10
7 T12
8 Metal halide
9 Pulse start Metal halide
10 Mercury vapor
11 High pressure sodium
12 Low pressure sodium
13 Traditional halogen
14 Halogen infra-red (IR)
15 Reflector lamp
16 Ceramic metal halide
17 Probe start ceramic metal halide
18 Light emitting diodes (LEDs)
19 Pulse start ceramic metal halides
20 compact fluorescent lightbulbs (CFLs)
21 incandescent

M12dd Were there any daylighting controls on lights before this project?

1 Yes [If yes] Describe.
2 No

Energy management system

[ASK IF MM4e=1]

M12ea You indicated that you installed an energy management system (EMS) to save energy.

What is now controlled by the energy management system (or EMS)?
[CHECK ALL THAT APPLY]

1 Chilled water and hot water reset
2 Heating/cooling timeclocks
   a. (What is the square footage served by HVAC equipment?)
3 Reduced nighttime lighting levels
   a. (What is the kW of lighting controlled by the EMS)
4 Other (specify).

M12eb Have you calculated the annual electric and/or gas savings attributable to the EMS?

1 Yes
2 No
3 Don't know

[IF YES]
M12ec Was that in kWh, therms or as a percent of the total bill?

1 kWh _____ kWh
2 Therms _____ Therms
3 As a percent of the total bill _____ %

[IF NO]
M12ed What was your…

Annual electric bill before EMS _ **M12ee** _	Annual electric bill after EMS __ **M12ef** _
Annual gas bill before EMS __ **M12eg** __	Annual gas bill after EMS ___ **M12eh** __

Programmable thermostat

[ASK IF MM4f=1]

M12fa You indicated that you installed a programmable thermostat to save energy.

M12fb How many programmable thermostats were installed?

1 _____ NUMBER INSTALLED
D (DON'T KNOW)
R (REFUSED)

M12fc What is the square footage served by the HVAC equipment controlled by the programmable thermostat?

_____ square footage

[If unable to answer sq ft]
M12fd What percent of the building is served by the HVAC equipment controlled by the programmable thermostat?

_____ percent of building

M12fe Was the programmable thermostat installed A) as an energy efficiency upgrade or B) as part of a new HVAC installation?

1 All as an energy efficiency upgrade
2 All as part of a new HVAC installation
3 Some as upgrade and some as part of a new installation

Other HVAC controls

[ASK IF MM4g=1]

M12ga You indicated that you installed other HVAC controls to save energy.
Please describe the upgrade/what you did.

[OPEN]

M12gb What was the square footage of the area affected by the change?

_____ square footage

(If unable to answer sq ft]
M12gc What percent of the building was affected by the change?

_____ percent of building

Adjustable/variable speed drive on motor

[ASK IF MM4h=1]

M12ha You indicated that you added adjustable speed drives to motors to save energy.
What type of drive was installed?

1 Variable speed/frequency (VSD)
2 Adjustable speed/frequency (ASD)

M12hb How many VSD/ASDs were installed?

1 _____ NUMBER INSTALLED
D (DON'T KNOW)
R (REFUSED)

M12hc What was the VSD/ASD added to?
[READ and indicate all that apply]

1 Chilled water loop pump
2 Hot water loop pump
3 Motor on variable air volume fan
4 Motor on return fan
5 Exhaust fan
6 Cooling tower fan
7 Compressor
8 Other (specify)

[FOR EACH YES IN M12hc ASK]

M12hd What is the nameplate horsepower of motor/pump that the VSD/ASD was added to?
1 Horsepower _____
D Don't know
R Refused

[ASK IF M12hc_3,4,6=YES]
M12he What is the tons of cooling of the system?

[ASK IF M12hc_7=YES]
M12hf What is the CFM and PSI for the compressed air system?
1 _____ CFM
2 _____ PSI
D Don't know

[FOR EACH YES IN M12hc ASK]
M12hg For what percent of your operating hours is the motor in use or on?
_____ % of hours

Voltage and current regulator

[ASK IF MM4i=1]

M12ia You indicated that you installed a voltage or current regulator to save energy.
What type of system was installed?

[Open]

(IF MM1_13=1 HEATING/COOLING SYSTEM)

Packaged AC (cooling only)

[ASK IF MM5a=1]
You indicated that you replaced a packaged AC cooling system to save energy.

	…of your old system	…of your new system
What was/is the cooling capacity output (in tons)	**M13aa**	**M13ae**
What was/is the efficiency (SEER or EER)	**M13ab**	**M13af**
What was/is the fuel type (electricity, natural gas, other)	**M13ac**	**M13ag**
What was/is the input rating (kW, kBtuh)	**M13ad**	**M13ah**

(SEER = Seasonal Energy Efficiency Ratio)

M13ai How much area of conditioned space does the new packaged AC (cooling only) serve?

_____ square footage or
_____ % of total building area

Split AC

[ASK IF MM5b=1]

You indicated that you replaced a split AC system to save energy.

	…of your old system	…of your new system
What was/is the cooling capacity output (tons)	**M13ba**	**M13be**
What was/is the efficiency (SEER or EER)	**M13bb**	**M13bf**
What was/is the fuel type (electricity, natural gas, other)	**M13bc**	**M13bg**
What was/is the input rating (kW, kBtuh)	**M13bd**	**M13bh**

(SEER = Seasonal Energy Efficiency Ratio)

M13bi How much area of conditioned space does the new split AC serve?

_____ square footage or
_____ % of total building area

Chiller
[ASK IF MM5c=1]
You indicated that you replaced a chiller to save energy.

	…of your old system	…of your new system
What was/is the chiller type (water cooled centrifugal, water cooled centrifugal with VSD, water cooled screw, air cooled screw, air cooled packaged reciprocating, water cooled reciprocating, other)	**M13ca**	**M13cd**
What was/is the size (tons)	**M13cb**	**M13ce**
What was/is the efficiency (kW/ton)	**M13cc**	**M13cf**

M13cg How much area of conditioned space does the new chiller serve?

_____ square footage or
_____ % of total building area

Packaged AC (cooling and heating in same unit)

[ASK IF MM5d=1]
You indicated that you replaced a packaged AC heating and cooling system to save energy.

	…of your old system	…of your new system
What was/is the system size (in tons)	**M13da**	**M13dd**
What was/is the efficiency (SEER or EER, specify which one)	**M13db**	**M13de**
What was/is the input rating (kW, kBtuh)	**M13dc**	**M13df**

(SEER = Seasonal Energy Efficiency Ratio)

M13dg How much area of conditioned space does the new packaged AC (cooling and heating) serve?

_____ square footage or
_____ % of total building area

Air cooled heat pump

[ASK IF MM5e=1]
You indicated that you installed/replaced an air cooled heat pump to save energy.

	…of your old system	…of your new system
What was/is the system size (in tons).	**M13ea**	**M13ed**
What was/is the cooling efficiency (SEER, EER, COP, specify which one)	**M13eb**	**M13ee**
What was/is the heating efficiency (HSPF, COP, specify which one)	**M13ec**	**M13ef**

(SEER = Seasonal Energy Efficiency Ratio)

M13eg How much area of conditioned space does the new air cooled heat pump serve?

_____ square footage or
_____ % of total building area

Geothermal heat pump

[ASK IF MM5f=1]
You indicated that you installed/replaced a geothermal heat pump to save energy.

	…of your old system	…of your new system
What was/is the system size (tons).	**M13fa**	**M13fd**
What was/is the cooling efficiency (SEER, EER, COP, specify which one)	**M13fb**	**M13fe**
What was/is the heating efficiency (HSPF, COP, specify which one)	**M13fc**	**M13ff**

(SEER = Seasonal Energy Efficiency Ratio)

M13fg How much area of conditioned space does the new geothermal heat pump serve?

_____ square footage or
_____ % of total building area

Evaporative cooler

[ASK IF MM5g=1]

You indicated that you installed/replaced an evaporative cooler to save energy.

	…of your old system	…of your new system
What was/is the CFM rating	**M13ga**	**M13gc**
What was/is the motor hp	**M13gb**	**M13gd**

M13ge How much area of conditioned space does the new evaporative cooler serve?

_____ square footage or
_____ % of total building area

Heating unit

[ASK IF MM5h=1]

You indicated that you replaced a heating unit to save energy.

	…of your old system	…of your new system
What was/is the input rating (kW or kBtuh)	**M13ha**	**M13hc**
What was/is the efficiency (AFUE)	**M13hb**	**M13hd**

M13he How much area of conditioned space does the new heating unit serve?

_____ square footage or
_____ % of total building area

M13hf What type of unit was replaced?

1 Gas fired furnace
2 Electric furnace
3 Boiler
4 Heat pump (may go back to heat pump section)
5 Other

Other

[ASK IF MM5i=1]

You indicated that you replaced some other type of space conditioning equipment to save energy. What type of equipment was that?

	…of your old system	…of your new system
What was/is the system size (tons).	**M13ia**	**M13id**
What was/is the cooling efficiency (SEER, EER, COP, specify which one)	**M13ib**	**M13ie**
What was/is the heating efficiency (HSPF, COP, specify which one)	**M13ic**	**M13if**

(SEER = Seasonal Energy Efficiency Ratio)

M13ig How much area of conditioned space does the new equipment serve?

_____ square footage or
_____ % of total building area

M13ih How old was the replace equipment?

____ AGE IN YEARS
D (DON'T KNOW)
R (REFUSED)

M13ii Prior to replacement, which statement best describes the way your business used the air conditioning unit during the summer: not used at all, turned on only a few days or nights when really needed, turned on quite a bit, turned on just about all summer, or something else?

1 Not used at all
2 Tuned on only a few days or nights when really needed
3 Turned on quite a bit
4 Turned on just about all summer
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

(IF MM1_14=1 PRE-RINSE SPRAY VALVE)

M14a You indicated that you installed a pre-rinse spray valve to save energy. How many pre-rinse spray valves did you replace?

1 ENTER NUMBER _____
D (DON'T KNOW)
R REFUSED)

(IF MM1_15=1 Photovoltaics)

M15a You indicated that you installed photovoltaics to save energy.
In what city is the system located?
_____ city

M15b What is the System Rating?
_____ kW
_____ MW

M15c Is the system rating given as DC, STC; DC,PTC; or AC?

1 DC, STC
2 DC,PTC
3 AC

- STC DC watts-The nameplate rating of a solar module. (1 kW DC, STC)
- PTC DC watts-the rating of a module in real-world conditions as determined by the California Energy Commission. (0.89 kW DC, PTC)
- CEC AC watts-the total PTC DC of solar modules factoring in inverter efficiency. The number that the California Solar Initiative rebate is based on. (around 0.75 kW AC)

M15d What is the array type

1 Fixed tilt (ask M15d)
2 1-axis tracking
3 2-axis tracking
4 Other (specify)

M15e [If fixed tilt]
What is the tilt angle in degrees?

(IF MM1_16=1 ENERGY EFFICIENT LIGHTING)

T5 and T8

[ASK IF MM3a=1]
You indicated that you installed T5 or T8 lighting to save energy.

	…before the lighting project	…after the lighting project
What was the lamp type installed	**M16aa** None, T5, T8, Thermal T8 (for use in refrigerator cases), T10, T12, Metal halide, Pulse start Metal halide, Mercury vapor, High pressure sodium, Low pressure sodium, Traditional halogen, Halogen infra-red (IR), Reflector lamp, Ceramic metal halide, Probe start ceramic metal halide, Light emitting diodes (LEDs), and Pulse start ceramic metal halides, incandescent.	**M16af** T8, T5, T8HO (high output), T5HO (high output)).
How many lamps were/are there per fixture	**M16ab**	**M16ag**
What was/is the total number of fixtures	**M16ac**	**M16ah**
What was/is the bulb wattage (W)	**M16ad**	**M16ai**
What was/is the bulb length (46 in, 48 in, 96 in, other)	**M16ae**	**M16aj**

What are the operating hours for the lights?

Military time	Start time (AFTER)	End time (AFTER)	Start time (BEFORE)	End time (BEFORE)
Mon – Fri:	**M16ak**	**M16an**	**M16aq**	**M16at**
Saturday:	**M16al**	**M16ao**	**M16ar**	**M16au**
Sunday:	**M16am**	**M16ap**	**M16as**	**M16av**

M16aw What percent of the lights are on during operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16ax What percent of the lights are on during non-operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16ay Please describe any seasonal variation BEFORE the lights were changed.

OPEN

M16az Please describe any seasonal variation AFTER the lights were changed.

OPEN

M16azz Please describe any differences between BEFORE and AFTER the lights were changed.

OPEN

CFL

[ASK IF MM3b=1]

You indicated that you installed CFLs to save energy.

	…before lighting project	…after lighting project
What type of lamps were installed	**M16ba** None, T5, T8, Thermal T8 (for use in refrigerator cases), T10, T12, Metal halide, Pulse start Metal halide, Mercury vapor, High pressure sodium, Low pressure sodium, Traditional halogen, Halogen infra-red (IR), Reflector lamp, Ceramic metal halide, Probe start ceramic metal halide, Light emitting diodes (LEDs), and Pulse start ceramic metal halides, incandescent.	**M16bd** 7, 9, 11, 13, 15, 16, 17, 18, 20, 23, 25, 28 W
How many bulbs were installed	**M16bb**	**M16be**
What was/is the average bulb wattage	**M16bc**	**M16bf**

What are the operating hours for the lights?

Military time	Start time (AFTER)	End time (AFTER)	Start time (BEFORE)	End time (BEFORE)
Mon – Fri:	**M16bg**	**M16bj**	**M16bm**	**M16bp**
Saturday:	**M16bh**	**M16bk**	**M16bn**	**M16bq**
Sunday:	**M16bi**	**M16bl**	**M16bo**	**M16br**

M16bs What percent of the lights are on during operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16bt What percent of the lights are on during non-operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16bu Please describe any seasonal variation BEFORE the lights were changed.

OPEN

M16bv Please describe any seasonal variation AFTER the lights were changed.

OPEN

M16bw Please describe any differences between BEFORE and AFTER the lights were changed.

OPEN

Exit signs

[ASK IF MM3c=1]

You indicated that you installed LED exit signs to save energy.

	…before lighting project	…after lighting project
What type of exit signs were installed	**M16ca** Light emitting diode (LED) exit signs, Neon exit sign, Incandescent exit sign- single sided, Incandescent exit sign- double sided, Compact fluorescent lightbulb (CFL) exit sign- single sided, Compact fluorescent lightbulb (CFL) exit sign- double sided, T5 fluorescent single-sided, T5 fluorescent double-sided)	**M16cc** (Light emitting diode (LED) exit signs, in trainings). Other options could include Neon exit sign, Incandescent exit sign- single sided, Incandescent exit sign- double sided, Compact fluorescent lightbulb (CFL) exit sign- single sided, Compact fluorescent lightbulb (CFL) exit sign- double sided, T5 fluorescent single-sided, T5 fluorescent double-sided)
How many exit signs were there	**M16cb**	**M16cd**

Induction lamps

[ASK IF MM3d=1]

M16da You indicated that you installed induction lamps to save energy. What type of induction lamp was installed?

1 Separate-ballasted
2 External-coil
3 Self-ballasted
4 Other (specify)

M16db What type of bulb did the induction lamp replace?

0 None
1 T5
2 T8
3 Thermal T8 (for use in refrigerator cases)
4 T10
5 T12
6 Metal halide
7 Pulse start Metal halide
8 Mercury vapor
9 High pressure sodium
10 Low pressure sodium
11 Traditional halogen
12 Halogen infra-red (IR)
13 Reflector lamp
14 Ceramic metal halide
15 Probe start ceramic metal halide
16 Light emitting diodes (LEDs)
17 Pulse start ceramic metal halides
18 incandescent

	…before lighting project	…after lighting project
How many bulbs were installed	**M16dc**	**M16de**
What was the installed bulb wattage (W)	**M16dd**	**M16df**

GENERAL: What are the operating hours for the lights?

Military time	Start time (AFTER)	End time (AFTER)	Start time (BEFORE)	End time (BEFORE)
Mon – Fri:	**M16dg**	**M16dj**	**M16dm**	**M16dp**
Saturday:	**M16dh**	**M16dk**	**M16dn**	**M16dq**
Sunday:	**M16di**	**M16dl**	**M16do**	**M16dr**

M16ds What percent of the lights are on during operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16dt What percent of the lights are on during non-operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16du Please describe any seasonal variation BEFORE the lights were changed.

OPEN

M16dv Please describe any seasonal variation AFTER the lights were changed.

OPEN

M16dw Please describe any differences between BEFORE and AFTER the lights were changed.

OPEN

M16dx Did you install this measure A) to save energy, B) to reduce maintenance time and costs, C) Both, or D) Neither?

1 To save energy
2 To reduce maintenance time and costs
3 Both
4 Neither

Other Lighting (not shown in the training review)

[ASK IF MM3e=1]

M16ea You indicated that you installed other energy efficient lighting to save energy.
What other type of energy efficient lighting did you install?

1 Thermal T8 (for use in refrigerator cases)
2 T10
3 T12
4 Metal halide
5 Pulse start Metal halide
6 Mercury vapor
7 High pressure sodium
8 Low pressure sodium
9 Traditional halogen
10 Halogen infra-red (IR)
11 Reflector lamp

12 Ceramic metal halide
13 Probe start ceramic metal halide
14 Light emitting diodes (LEDs)
15 Pulse start ceramic metal halides

M16eb What type of bulbs were replaced?

0 None
1 T5
2 T8
3 Thermal T8 (for use in refrigerator cases)
4 T10
5 T12
6 Metal halide
7 Pulse start Metal halide
8 Mercury vapor
9 High pressure sodium
10 Low pressure sodium
11 Traditional halogen
12 Halogen infra-red (IR)
13 Reflector lamp
14 Ceramic metal halide
15 Probe start ceramic metal halide
16 Light emitting diodes (LEDs)
17 Pulse start ceramic metal halides
18 incandescent

	…before the lighting project	…after the lighting project
How many lamps were there per fixture (1, 2, 3, 4, other)	**M16ec**	**M16eg**
How many total fixtures were there	**M16ed**	**M16eh**
What was the bulb length (46 in, 48 in, 96 in, other)	**M16ee**	**M16ei**
What was the installed bulb wattage (W)	**M16ef**	**M16ej**

GENERAL: What are the operating hours for the lights?

Military time	Start time (AFTER)	End time (AFTER)	Start time (BEFORE)	End time (BEFORE)
Mon – Fri:	**M16ek**	**M16en**	**M16eq**	**M16et**
Saturday:	**M16el**	**M16eo**	**M16er**	**M16eu**
Sunday:	**M16em**	**M16ep**	**M16es**	**M16ev**

M16ew What percent of the lights are on during operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16ex What percent of the lights are on during non-operating hours?

1 _____ PERCENT OF LIGHTS ON
D (DON'T KNOW)
R (REFUSED)

M16ey Please describe any seasonal variation BEFORE the lights were changed.

OPEN

M16ez Please describe any seasonal variation AFTER the lights were changed.

OPEN

M16ezz Please describe any differences between BEFORE and AFTER the lights were changed.

OPEN

Delamping

[ASK IF MM2c=1]

M16fa You indicated that you removed existing fixtures without replacement to save energy. What type of bulbs were replaced?

1 T5
2 T8
3 Thermal T8 (for use in refrigerator cases)
4 T10
5 T12
6 Metal halide
7 Pulse start Metal halide
8 Mercury vapor
9 High pressure sodium
10 Low pressure sodium
11 Traditional halogen
12 Halogen infra-red (IR)
13 Reflector lamp
14 Ceramic metal halide
15 Probe start ceramic metal halide
16 Light emitting diodes (LEDs)
17 Pulse start ceramic metal halides
18 incandescent

M16fb Approximately how many lighting fixtures are affected by this change?
An estimate is fine.

[NUMERIC OPEN END]

M16fc What is the average wattage of the fixtures affected by this change?
An estimate is fine.

[OPEN END]

M16fd Approximately how many fewer hours do you use the light fixtures affected by this change?

_____ Hrs per day
_____ Days per Week
_____ Weeks per year

Changed Lighting repair/maintenance practices

[ASK IF MM2d=1]

[ASK IF MI2d=1, ELSE SKIP TO BM1]
M16ga You indicated that you changed lighting repair and maintenance practices. Please describe the changes to the lighting system repair and maintenance practices you have made.

[OPEN END]

Changed operation of Lighting

[ASK IF MM2e=1]

[ASK IF MI2e=1, ELSE SKIP TO BM1]
M16ha You indicated that you changed the operation of your lighting systems in some way. Which of the following changes did you make to the operations of the lighting equipment?

1 Changed number of hours the lighting equipment is in use
2 Changed the time of day I use my lighting equipment
3 Other

[ASK IF "Other" above]
M16hb Please describe the changes you made to the operations of the lighting equipment.

[OPEN END]

M16hc Approximately how many lighting fixtures are affected by this change?
An estimate is fine.

[NUMERIC OPEN END]

M16hd What is the average wattage of the fixtures affected by this change? An estimate is fine.

[OPEN END]

M16he Approximately how many fewer hours do you use the light fixtures affected by this change?

_____ Hrs per day
_____ Days per Week
_____ Weeks per year

(IF MM1_17=1 HVAC TUNE UP)

M17a What is the area of conditioned space covered by the HVAC equipment?

_____ (sq.ft. or % of total building area)

M17b What type of system did the retrofit go into - single zone, multizone, or other?

i. single zone
ii. multizone
iii. other

M17c Which best describes the system, constant volume or variable air volume?

1 constant volume
2 variable air volume

M17d What is the size of the HVAC system?

M17e Which part of the HVAC air handling system was the maintenance performed on before the class? (CHECK ALL THAT APPLY)

1 Adjust bypass dampers
2 Clean or replace filters
3 Check fan blades for tightness
4 Lubricate fan motor
5 Adjust operating pressures
6 Evaluate vent system
7 Clean blower wheel
8 Inspect valves

M17f Which part of the HVAC controls or setpoints was the maintenance performed on before the class? (CHECK ALL THAT APPLY)

1 Tighten electrical connections
2 Evaluate safety controls
3 Measure temperature difference
4 Adjust thermostat calibration
5 Check start and run capacitors
6 Check start and run delays
7 Measure voltage differences
8 Measure amperage draw
9 Test fan limit switch
10 Test thermocouple

M17g Which part of the HVAC heating and cooling equipment was the maintenance performed on before the class? (CHECK ALL THAT APPLY)

1 Check evaporator coil
2 Monitor expansion valve
3 Clean evaporator drain
4 Clean condenser coil
5 Clean condenser coil
6 Monitor refrigerant level
7 Clean and adjust burners
8 Set burner adjustment
9 Measure gas input
10 Clean combustion chamber
11 Clean heat exchanger

M17h How often did you do the maintenance before the classes?

1 Once a year
2 Twice a year
3 Quarterly
4 More than once a year

(IF MM1_18=1 REPLACED MOTORS)

M18a Did you add a new motor, replace an existing motor, or both?

1 Installed new motor
2 Replaced existing motor
3 Both

M18b What is the size of the new motor?

_____ (hp)

M18c What is the efficiency of the new motor?

M18d What are the operating hours of the new motor?

M18e Are there any variable speed/ frequency drive installed on the new motor?

1 Yes
2 No

M18f What is the motor used for?

[OPEN END]

IF NEW MOTOR ONLY – SKIP TO END
ASK M18g-M18k IF REPLACED AN EXISTING MOTOR (M18a>1)

M18g What was the size of the old motor?

_____ (hp)

M18h What was the efficiency of the old motor?

M18i What was the vintage of the old motor?

M18j What were the operating hours of the old motor?

M18k Was there any variable speed/ frequency drive installed on the old motor?

1 Yes
2 No

(IF MM1_19=1 OTHER ACTIONS TAKEN)

M19a Please tell us what other energy efficiency actions you took since the training.
(Attempt to get information on whether it was new or a replacement, estimated efficiency, square footage affected, operating hours)

OPEN

BEHAVIORAL MEASURES

BM1 What other actions have you taken as a result of attending the [COURSE] workshop? (INDICATE ALL THAT APPLY. PROBE: ANYTHING ELSE?)

1 Lower heating thermostat
2 Increase air conditioner thermostat setting
3 Use fans instead of air conditioning
4 Lower water heater temperature
5 Retired or recycled a refrigerator
6 Retired or recycled a freezer
7 Turn off lights when not in use
8 Unplug electronics when not in use or use power strip
9 Reduce energy use at peak times
10 Repair water leaks
11 Other (SPECIFY)
12 None

ASK B1-B18 FOR APPLICABLE ACTIONS TAKEN

Lower Heating Thermostat

[IF YES TO BM1_1]

B1a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to lower your heating thermostat?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

[IF B1a>6]

B1b Before the workshop, at what temperature did you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

[IF B1a>6]

B1c Before the workshop, at what temperature did you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

[IF B1a>6]

B1d After the workshop, at what temperature do you set your thermostat for heating at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

[IF B1a>6]

B1e After the workshop, at what temperature do you set your thermostat for heating during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

Increase Air Conditioner Thermostat Setting

[IF YES TO BM1_2]

B2a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to turn up your air conditioner thermostat setting?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

[IF B2a>6]

B2b Before the workshop, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

[IF B2a>6]

B2c Before the workshop, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

[IF B2a>6]

B2d After the workshop, at what temperature did you set your thermostat for cooling in the summer at night?

ENTER TEMPERATURE AT NIGHT __
D DON'T KNOW
R REFUSED

[IF B2a>6]

B2e After the workshop, at what temperature did you set your thermostat for cooling in the summer during the day?

ENTER TEMPERATURE DURING THE DAY __
D DON'T KNOW
R REFUSED

Use Fans instead of Air Conditioner

[IF YES TO BM1_3]

B3a Before the workshop, did you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

B3b Since the workshop, do you always, sometimes, or rarely use fans instead of air conditioning?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

[IF B3b is more often than B3a]

B3c On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to use fans rather than air conditioning?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

[IF B3c>6]

B3d What type of fans do you use most often rather than air conditioning? PROBE: How many do you use? (INDICATE ALL THAT APPLY)

1 Box fan
2 Oscillating table fan
3 Oscillating floor fan
4 Ceiling fan
5 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

[IF B3c>6]

B3e How many do you use?

ENTER NUMBER

__ Box fans
__ Oscillating table fans
__ Oscillating floor fans
__ Ceiling fans
__ Other

Lowered Water Heater Temperature

[IF YES TO BM1_4]

B4a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to lower your hot water temperature?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

[IF B4a>6]

B4b Before the workshop, at what temperature did you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __
D DON'T KNOW
R REFUSED

[IF B4a>6]

B4c After the workshop, at what temperature do you set your hot water heater?

ENTER TEMPERATURE IN DEGREES __
D DON'T KNOW
R REFUSED

Recycle Refrigerator

[IF YES TO BM1_5]

B5a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to retire or recycle your old refrigerator?

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

[IF B5a>6]

B5b Where was the freezer located (mounted) on the old refrigerator?

1 Freezer was on the bottom of the refrigerator
2 Freezer was on the top of the refrigerator
3 Freezer was on the side of the refrigerator

4 Refrigerator did not have an attached freezer
D (DK)
R (REFUSED)

[IF B5a>6]

B5c Did the old refrigerator have a through the door ice machine?

1 Yes
2 No
D (DK)
R (REFUSED)

[IF B5a>6]

B5d During the time just before you decided to get rid of the refrigerator, was it being used as your main refrigerator, or had it been a secondary or spare?

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

[IF B5a>6 AND B5d = 2]

B5e Prior to retiring this refrigerator, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

[IF B5a>6]

B5f Did you get rid of the refrigerator(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

B5g Approximately how large was this/were these refrigerators, in cubic feet?

1 _____ size in cubic square feet
D (DON'T KNOW)
R (REFUSED)

B5h What were the approximately dimensions of these refrigerators, in feet?

_____ height in feet
_____ width in feet
_____ depth in feet
D (DON'T KNOW)
R (REFUSED)

B5i How old was this/were these refrigerators, in years?

1 ____ Years old
D (DON'T KNOW)
R (REFUSED)

Retire Freezer

[IF YES TO BM1_6]

B6a On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to retire or recycle your old freezer?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

[IF B6a>6]

B6b Was the old freezer a chest freezer or a stand-up unit?

1 Chest
2 Standup
D (DK)
R (REFUSED)

[IF B6a>6]

B6c Was the old freezer a frost free unit?

1 Yes
2 No
D (DK)
R (REFUSED)

[IF B6a>6]

B6d During the time just before you decided to get rid of the freezer, was it being used as your main freezer, or had it been a secondary or spare?

1 Main
2 Secondary or Spare
D DON'T KNOW
R REFUSED

[IF B6a>6 AND B6d = 2]

B6e Prior to retiring this freezer, was it plugged in and running …

1 For special occasions only
2 During certain months of the year only, or
3 Never plugged in or running
D DON'T KNOW
R REFUSED

[IF B6a>6]

B6f Did you get rid of the freezer(s) through a utility recycling program?

1 Yes (SPECIFY QUANTITY)
2 No
D (DON'T KNOW)
R (REFUSED)

[IF B6a>6]

B6g Approximately how large was this/were these freezers, in cubic square feet?

1 _____ size in cubic square feet
D (DON'T KNOW)
R (REFUSED)

B6h What were the approximately dimensions of these refrigerators, in feet?

_____ height in feet
_____ width in feet
_____ depth in feet
D (DON'T KNOW)
R (REFUSED)

[IF B6a>6]

B6i How old was this/were these freezers, in years?

1 ____ Years old
D (DON'T KNOW)
R (REFUSED)

Turned Off Lights When Not is Use

[IF YES TO BM1_7]

B7a Before the workshop, did you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

B7b Since the workshop, do you always, sometimes or rarely turn off lights when not needed?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

[IF B7b is more often than B7a]

B7c On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to turn off lights when you leave a room??

RECORD RESPONSE (0-10) _____
D DON'T KNOW
R REFUSED

[IF B7c>6]

B7d On average, how many additional hours a day are the lights now turned off because you turn them off when you leave the room?

ENTER NUMBER OF HOURS __
D (DON'T KNOW)
R (REFUSED)

[IF B7c>6]

B7e What is the wattage of the most common type of light fixture in your business?

ENTER WATTAGE __
D (DON'T KNOW)
R (REFUSED)

Unplug Electronics When Not is Use

[IF YES TO BM1_8]

B8a Before the workshop, did you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

B8b Since the workshop, do you always, sometimes or rarely unplug electronics when not in use in order to use less energy?

1 Always
2 Sometimes
3 Rarely
D (DON'T KNOW)
R (REFUSED)

[IF B8b is more often than B8a]

B8c What type of electronics do you now always or sometimes unplug when not in use? (READ ONLY IF NEEDED AS EXAMPLE; INDICATE ALL THAT APPLY)

1 Computers/Monitors
2 Power strip
3 Printers/fax machines
4 TV

5 DVD player
6 Cell phone chargers
7 Electronic games
8 Stereo equipment
9 Other (SPECIFY)

[FOR ALL MENTIONED IN B8c]

B8d How many [FILL APPLIANCE] are unplugged?

1 _____ ENTER NUMBER
D (DON'T KNOW)
R REFUSED)

[IF B8b is more often than B8a]

B8e What hours of the day are they typically unplugged?
(READ LIST IF NECESSARY. INDICATE ALL THAT APPLY)

1 All the time
2 Early morning (6:00 AM-9:00 AM)
3 Late morning (9:00 AM-11:00 AM)
4 Noon (11:00 AM-1:00 PM)
5 Mid-afternoon (1:00 PM-3:00 PM)
6 Late afternoon (3:00 PM-5:00 PM)
7 Early evening (5:00 PM-7:00 PM)
8 Late evening (7:00-MORNING)
9 Other (SPECIFY)
D (DON'T KNOW)
R (REFUSED)

[IF B8b is more often than B8a]

B8f And what days of the week?
(INDICATE ALL THAT APPLY)

1 Sunday
2 Monday
3 Tuesday
4 Wednesday
5 Thursday
6 Friday
7 Saturday
D (DON'T KNOW)
R (REFUSED)

[IF B8b is more often than B8a]

B8g On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on your decision to unplug this/these electronic(s) when not in use?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

Reduce Energy Use at Peak Times

[IF YES TO BM1_9]

B9a Have you reduced the amount of energy that you use on weekdays between the high demand hours of noon to 7 PM?

1 Yes
2 No
D (DON'T KNOW)
R (REFUSED)

[IF YES TO B9a]

B9b What have you done to reduce the amount of energy that you use during these high demand times? (SPECIFY ACTIONS OR APPLIANCES TURNED OFF)

_____

[IF YES TO B9a]

B9b On a 0 to 10 scale, with 0 being no influence and 10 being a great deal of influence, how much influence did the workshop have on you decision to reduce the amount of energy that you use during high demand times?

[RECORD RESPONSE (0-10)] _____
D DON'T KNOW
R REFUSED

ACTIONS TAKEN – MA

[ASK IF Respondent Type = MA, ELSE SKIP TO D1]

TA0 Based on a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statement: As a result of taking the [COURSE] course, I am more likely to recommend energy efficient equipment, designs or practices to my clients.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

TA1 Have you applied ANY of the concepts taught in the [COURSE] course to change or enhance the service you provide to your clients?

1 Yes
2 No

[ASK IF TA1= 1, ELSE SKIP TO TA11]

TA2 What changes did you make? Did you…

[1=Yes, 2=No, 3=Don't know]

i. Specify energy efficient measures of which you were unfamiliar prior to taking the course
j. Specify energy efficient measures more frequently than prior to taking the course
k. Apply building or system design principals or elements of which you were unfamiliar prior to taking the course
l. Utilize diagnostic tools or practices of which you were unfamiliar prior to taking the course
m. Utilize building or system design tools or practices of which you were unfamiliar prior to taking the course
n. Change the manner in which you install or maintain energy consuming equipment
o. Change the methods you use to size and specify new energy consuming equipment for my clients

[ASK IF TA2 a-g = 2]

TA3b Please describe any other changes you have made? [OPEN END]

TA3c Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to make the changes you just described?

1	2	3	4	5	6	7
Not At All Influential					Very Influential	

TA4 Since your attendance at the [COURSE], have the changes or enhancements you just told me about become standard practice for you?

1 Yes
2 No
3 Don't know

TA5 Approximately how many times this year (i.e., 2008) have you implemented this change or enhancement to the service you provide to your clients?

[NUMERIC OPEN END]

TA6 In your opinion, have the changes or enhancements you have made to the service you provide resulted in measurable energy savings in the facilities operated by your clients?

1 Yes
2 No
3 Don't know

ASK IF TA6=1]

TA7. In your opinion, how would you characterize the energy savings realized by your customers as a result of your participation in the course? In general would you say these are…

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TA7=1]

TA8a Have you estimated the average savings per building?

1 Yes
2 No [SKIP TO TA11]

TA8b How did you estimate electricity savings, was it in…
(Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)

[ASK IF TA8B=1]

TA9. Approximately how many dollars did each customer save? [NUMERIC OPEN END]

[ASK IF TA8B=2]

TA10. Approximately how many kWh did each customer save? [NUMERIC OPEN END]

[ASK IF MA1=2]

TA11. What is the principal reason you have not incorporated any of the concepts taught in the course to enhance the service you provide to your clients?

1 I was already applying the concepts
2 The course did not give me sufficient information to apply the concepts
3 There have been no appropriate situations for me to apply the concepts
4 Too costly
5 Lack of product availability
6 Lack of knowledgeable contractors to implement
7 Other, Specify

DEMOGRAPHIC MODULE

D0. [ASK ALL] What suggestions do you have for improving the [COURSE] course?

_____

[ASK IF RESPONDENT TYPE=MA,
ELSE IF RESPONDENT TYPE=EUCC SKIP TO DC1,
ELSE IF RESPONDENT TYPE=EUCR SKIP TO X1]

MARKET ACTOR FIRMOGRAPHICS

D1 What types of energy related services or equipment does your business provide? (Check all that apply)

1 Building inspection or plan review
2 Construction
3 Engineering or architectural design
4 Lighting design assistance, sales, installation
5 HVAC equipment sales, installation, repair or maintenance
6 Refrigeration equipment sales, installation, repair or maintenance
7 Motor equipment sales, installation, repair or maintenance
8 Pumping/hydraulic equipment sales, installation, repair or maintenance
9 Other equipment sales, installation, repair or maintenance (Specify)
10 Facility operations or maintenance
11 Energy technology research/consulting
12 Other, please specify

D2 Which of the following best describes your business?

1 I/My business provides services to **business** customers.
2 I/My business provides services to **residential** customers.
3 I/My business provides services to **business and residential** customers.

[ASK IF D2=1 OR 3]
D3 Which market segment do you work with most often?

1 Commercial
2 Agricultural
3 Industrial

END THANK YOU FOR YOUR TIME

COMMERCIAL FIRMOGRAPHICS

DC1 What is the zip code where your building is located?

zip code _____

DC2 Does your company lease or own your facility?

1 Lease
2 Own
3 Other, specify

DC3 How old is your building?

1 Less than one year
2 Years – SPECIFY
3 (Don't know)
4 (Refused)

DC4 How many locations does your firm have in California?

1 1
2 2 to 4
3 5 to 10
4 11 to 25
5 Over 25
6 (Don't know)
7 (Refused)

[ASK D5 to D13 ONLY IF MM7 > 1 FOR ANY EQUIPMENT]

DC5 What type of building were the measures installed in?

1 Community Center
2 Conference/Convention Center
3 Health
4 Lodging, Motel
5 Lodging, High-Rise Hotel
6 Manufacturing, General
7 Manufacturing, High Tech/Bio Tech
8 Multifamily, Low-Rise (exterior entries)
9 Multifamily, Mid-Rise (interior entries)
10 Multifamily, High-Rise (interior entries)
11 Museum
12 Office Bldg
13 Religious Worship
14 Restaurant, Full Service (full menu)
15 Restaurant, Quick Service (fast food)
16 Restaurant, Bar/Lounge
17 Retail
18 School
19 Storage
20 Theater / Performing Arts
21 Unknown, Custom or Mixed Use

[IF DC5=3]

DC5a What type of health facility is it?

1 Health/Fitness Center
2 Health, Hospital (inpatient)
3 Health, Long-term Care (Nursing Home)
4 Health, Medical Clinic/Prof. Bldg (outpatient)

[IF DC5=12]

DC5b What type of office facility is it?

1 Office Bldg, High-Rise
2 Office Bldg, Mid-Rise
3 Office Bldg, Two Story
4 Office Bldg, Bank/Financial

[IF DC5=17]

DC5c What type of Retail facility is it?

1 Retail, Department Store
2 Retail, Large Single Story
3 Retail, Stand-Alone Structure
4 Retail, Single Storefront
5 Retail, Strip Mall
6 Retail, Service Station
7 Retail, Service Station/Convenience Store
8 Retail, Warehouse Sales

[IF DC5=18]

DC5d What type of school facility is it?

1 School, Preschool/Daycare
2 School, Relocatable Classroom
3 School, K-6 Elementary
4 School, Middle School
5 School, Secondary (High School)
6 School, College/University

[IF DC5=19]

DC5e What type of office facility is it?

1Storage, Conditioned High Bay
2 Storage, Unconditioned High Bay
3 Storage, Conditioned Low Bay
4 Storage, Unconditioned Low Bay

DC6 What is the building area, in square feet, of this building?

DC7 How many floors are above ground?

DC8 How many floors are below ground?

DC9a Approximately what percent of your facility is air conditioned?

DC9b What type of cooling equipment do you have in this building?

1 None
2 Direct expansion air conditioner
3 Chilled water, electric
4 Chilled water, gas (absorption)
5 Evaporative cooler
6 Other (please describe)

DC10a Approximately what percent of your facility is air conditioned?

DC10b What type of heating do you have in this building? [READ ALL]

1 None
2 Gas furnace
3 Electric resistance
4 Heat pump
5 Hot water
6 Other (please describe)

DC11 Operating Hours/Business Hours on Weekdays

DC12 Operating Hours/Business Hours on Saturdays

DC13 Operating Hours/Business Hours on Sundays

END THANK YOU FOR YOUR TIME

RESIDENTIAL DEMOGRAPHICS

X1 In what type of building do you live?

1 Single family home
2 Single-Wide Mobile home
3 Double-Wide Mobile home
4 Multifamily, Low-Rise (exterior entries)
5 Multifamily, Mid-Rise (interior entries)
6 Multifamily, High-Rise (interior entries)
7 Other, Specify

X2 About when was this building first built?

1 Before 1970s
2 1970s
3 1980s
4 1990-94
5 1995-99
6 2000s

X3 What is the approximate square footage of your residence?

[OPEN END]

X4 What is your zip code?

zip code _____

X5 How many floors are above ground?

X6 How many floors are below ground?

X7 What type of cooling equipment do you have in this building?

1 None
2 Central AC
3 Window units
4 Heat pump
5 Evaporative cooling
6 Other (please describe)

X8 What type of heating do you have in this building?

1 None
2 Electric
3 Central gas
4 Room gas
5 Heat pump
6 Other (please describe)

X9 Including yourself, how many people currently live in your home year-round?

_____ people

X10 What is the highest level of education you have completed?

1 less than high school
2 some high school
3 high school graduate or equivalent (e.g., GED)
4 trade or technical school
5 some college
6 college degree
7 some graduate school
8 graduate degree
9 other (SPECIFY)

X11 Which of the following best represents your annual household income from all sources in 2008, before taxes? Was it . . . .?

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more

END **THANK YOU FOR YOUR TIME**

Process Trainings (Covering a Broad Array of Topics) – Participant Survey

Introduction

Hello, my name is **[interviewer name]**, and I'm calling on behalf of the California Public Utilities Commission regarding a **[COURSE]** workshop held at **[location]** around **[date]**. May I speak with **[named respondent]**?

1 Yes
2 No *[attempt to convert; if R not available, ask for an adult who makes decisions on how household uses energy]*

I'm with PA Consulting Group, an independent research firm. We have been hired to evaluate the **[Course name]** workshop. I'm not selling anything; I'd just like to ask your opinion about these types of services and whether you've taken advantage of them. I'd like to assure you that your responses will be kept confidential and your name will not be revealed to anyone.

(**Why are you conducting this study**: Studies like this help the utility and its partners better understand customers' awareness of and interest in energy programs and services.)

(**Timing**: This survey should take no more than 15 minutes of your time. Is this a good time for us to speak with you? *IF NOT, SET UP CALL BACK APPOINTMENT OR OFFER TO LET THEM CALL US BACK AT 1-800-454-5070*)

(**Sales concern**: I am not selling anything; we would simply like to learn about your awareness of services that can save energy, and your opinions about these services. Your responses will be kept confidential.

Screening

Around **[DATE]**, you attended a course/activity, **[COURSE NAME]**, at **[CENTER]**. To understand the impact of courses such as **[COURSE NAME]**, we ask that you complete this brief survey. The survey should take about 15 minutes for you to complete.

S1 Do you recall attending the **[COURSE NAME]** course on **[DATE]** at **[CENTER]**?

1 Yes
2 No [terminate]

S2 Are you employed by or do you have any service contracts with any California utility company or Energy Center?

1 Yes [terminate]
2 No

S3 What is your organization's primary activity? Is it . . .
(READ)

1 Office
2 Retail (non-food)
3 College/University
4 School
5 Grocery Store
6 Restaurant
7 Health Care (other than Hospital)
8 Hospital
9 Hotel or Motel
10 Warehouse
11 Construction/Contracting
12 Municipality/local government
13 Community Service/Church/Temple
14 Industrial Process/ Manufacturing/ Assembly
15 Condo Assoc/Apartment Mgr.
16 Other (Please specify)
D (DON'T KNOW)
R (REFUSED)

ATTENDEE CHARACTERIZATION

AC1 Which of the following best describes where you intend to apply the information you learned in the course?

[READ CATEGORIES]

[NOTE TO INTERVIEWER: WE NEED THE PRIMARY APPLICATION - THIS WILL AFFECT LATER SKIPS.]

[NOTE TO INTERVIEWER: CONTINUE TO PROBE UNTIL RESPONDENT FITS INTO ONE OF THE CATEGORIES. IF RESPONDENT LEGITIMATELY DOES NOT FIT INTO ANY, THANK AND TERMINATE.]

1 at my home
2 at the facility(ies) my business occupies
3 at the facility(ies) my business manages (e.g. property managers)
4 in facilities occupied or managed by customers to whom I provide services (e.g. architects, engineering firms, contractors, code inspectors)
5 somewhere else [specify] (try to fit into 1-4)

RESPONDENT TYPE DEFINED
[Classify AC1=1 as EUCR (residential end-use customer)]
[Classify AC1=2, 3 as EUCC (commercial end-use customer)]
[Classify AC1=4 as MA (market actor)]

AC3 What is your title?

1 Building inspector/supervisor
2 Builder/contractor
3 Owner
4 Building official (e.g. safety, superintendents)
5 Planner
6 Architect
7 Designer
8 Technician
9 Engineer
10 Buyer/Purchasing mgr/Sourcing
11 Facilities manager/operator/maintenance manager
12 Public official, managers (SPECIFY)
13 Other, specify

KNOWLEDGE

K0 What did you hope to get out of the **[COURSE]** course?

OPEN

K1 Did the **[COURSE]** course provide you with any new information?

1 Yes
2 No
3 Don't know
4 Refused

[ASK IF K1=2 or 3]

K2 Although you're not sure the course information was new, did your participation in the course make you any more likely to implement efforts to save energy that you were already considering?

1 Yes
2 No
3 Don't know
4 Refused

K2a The **[COURSE NAME]** course was a **[COURSE LENGTH]** course designed to achieve the following objectives: [USE DESCRIPTIONS BELOW].

Advanced Framing [IF COURSE FLAG=1]
This workshop outlined opportunities for energy and resource improvements and the magnitude of those opportunities, explored alternatives to conventional framing, and practiced conveying advanced framing information on construction documents.

Intro to Commissioning [IF COURSE FLAG=2]
The Introduction to Commissioning served as a one-day course for decision makers as well as an introduction to the five-day course. It provided an overview to support implementation of the commissioning process by those who attend the full course.

Commissioning [IF COURSE FLAG=3]
Commissioning was a five-day course on effectively implementing the principles of the commissioning process at your campus, resulting in a national certification as a Commissioning Authority – Process (CxAP) for those that completed the full course and passed the final test. Its goal was to provide a full understanding of the commissioning process to enable support or implementation of the commissioning process for campus projects

MBCx – Monitoring Based Commissioning [IF COURSE FLAG=4]
This workshop provided information on monitoring based commissioning by clearly identifying what it is, why it's important for campuses, and how to measure and monitor building energy usage to achieve savings. It covered an overview as well as the process, sample diagnostics, measurement and verification, case studies and reporting requirements.

Environmentally Preferable Purchasing [IF COURSE FLAG=5]
A half-day workshop designed to educate campus purchasing personnel and policy makers on how to look for energy efficient products when making purchasing decisions.

K3 Using a scale of 1 to 7 where 1 is no knowledge and 7 is significant knowledge, please rate the amount of knowledge you had regarding the course objectives prior to your participation in the course?

1	2	3	4	5	6	7
No Knowledge						Significant Knowledge

K4 Using a scale of 1 to 7 where 1 is no more knowledgeable and 7 is significantly more knowledgeable, as a result of your participation in this course, to what degree did your knowledge of how to achieve the objectives increase?

1	2	3	4	5	6	7
No Knowledge						Significant Knowledge

K5 I am now going to read a series of statements. Please rate your agreement with each statement using a scale of 1 to 7, where 1 is strongly disagree and 7 is strongly agree.

K5a As a result of taking the course, I am better able to implement energy efficient solutions.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5b As a result of taking the course, I am more aware of utility sponsored energy efficiency programs.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

[ASK IF Respondent Type = MA ELSE SKIP TO K5e]

K5c As a result of taking the course, I am now more familiar with the tools and/or techniques that will enhance the service I provide to my clients.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5d As a result of taking the course, I have more confidence when I make recommendations for improving energy efficiency at my client's facilities that the expected level of energy savings will actually occur.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

[ASK IF Respondent Type = EUCC ELSE SKIP TO A1]

K5e As a result of taking the course, I better understand how to improve the energy efficiency at my facility or the facilities I manage.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

K5f As a result of taking the course, I have more confidence when I take steps to improve the energy efficiency at my facility(ies) that the expected level of energy savings will actually occur.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

ATTRIBUTION

[ASK IF RESPONDENT TYPE = EUCC, ELSE IF RESPONDENT TYPE = EUCR SKIP TO A2, ELSE IF RESPONDENT TYPE = MA, SKIP TO A3]

A1 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A1a To what degree did the course cause you to think differently about how to take advantage of energy efficiency opportunities at your facility?

1 2 3 4 5 6 7
Not At All A Great Deal

[IF A1a>4 ask]

A1aa How do you view energy efficiency improvements differently as a result of attending the course?

A1b To what degree did the course cause you to want to take advantage of energy efficiency opportunities at your facility?

1	2	3	4	5	6	7
Not At All						A Great Deal

A1c To what degree did the course increase your awareness of methods for taking advantage of energy efficiency opportunities at your facility?

1	2	3	4	5	6	7
Not At All						A Great Deal

[SKIP TO C1]

A2 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A2a To what degree did the course cause you to think differently about how to take advantage of energy efficiency opportunities at your home?

1	2	3	4	5	6	7
Not At All						A Great Deal

[IF A2a>4 ask]

A2aa How do you view energy efficiency improvements differently as a result of attending the course?

A2b To what degree did the course cause you to want to take advantage of energy efficiency opportunities at your home?

1	2	3	4	5	6	7
Not At All						A Great Deal

A2c To what degree did the course increase your awareness of methods for taking advantage of energy efficiency opportunities at your home?

1	2	3	4	5	6	7
Not At All						A Great Deal

[SKIP TO C1]

A3 I am going to read some statements. Using a scale of 1 to 7 where 1 means not at all and 7 means a great deal, rate the degree to which your participation in the course influenced your awareness or behavior.

A3a To what degree did the course cause you to think differently about how to take advantage of opportunities to introduce energy efficient elements to the work you do for your clients?

1 2 3 4 5 6 7
Not At All A Great Deal

[IF A3a>4 ask]

A3aa How do you view energy efficiency improvements differently as a result of attending the course?

A3b To what degree did the course cause you to want to take advantage of energy efficiency opportunities to introduce energy efficient elements to the work you do for your clients?

1 2 3 4 5 6 7
Not At All A Great Deal

A3c To what degree did the course increase your awareness of methods for introducing energy efficient elements to the work you do for your clients?

1 2 3 4 5 6 7
Not At All A Great Deal

COMMISSIONING

[ASK SECTION IF COURSE = 2 or 3]

C0 As I mentioned earlier, [fill with INTRO text if course flag = 2 or Cx text course flag = 3]

Intro to Commissioning [IF COURSE FLAG=2]
The Introduction to Commissioning served as a one-day course for decision makers as well as an introduction to the five-day course. It provided an overview to support implementation of the commissioning process by those who attend the full course.

Commissioning [IF COURSE FLAG=3]
Commissioning was a five-day course on effectively implementing the principles of the commissioning process at your campus, resulting in a national certification as a Commissioning Authority – Process (CxAP) for those that completed the full course and passed the final test. Its goal was to provide a full understanding of the commissioning process to enable support or implementation of the commissioning process for campus projects

CONTINUE

[IF COURSE = 3]

C2 Were you certified as a "Commissioning Authority – Process (CxAP)" through the training?

1 Yes
2 No

C3 Have you implemented commissioning on any of the buildings you are responsible for since participating in the course?

1 Yes
2 No
3 Don't know [skip to next section (MB0)]

[ASK IF C3 = 2]

C4 Why did you choose not to include commissioning in the project?

1 Not enough time to include
2 Couldn't find a qualified consultant
3 Not able to get the funding approved
4 Decision-makers did not feel it was necessary
5 Other (specify)

[SKIP TO NEXT SECTION (MB0)]

C5 Was the commissioning included in the design of a new building or used to upgrade an existing building?

1 Design of new building [ask C6 series]
2 Upgrade of existing building [ask C7 series]

C6a How many new buildings has your campus built or decided to build since you attended the course that included commissioning?

_____ number of buildings (should be greater than 0 if C5=1)

C6b At which phase of the building process did you begin the commissioning process?
[Ask for each building mentioned in C6a]

[INTERVIEWER NOTE: MAXIMUM NUMBER OF BUILDINGS IS FIVE - IF MORE THAN FIVE, ASK FOR INFORMATION FOR THE 5 LARGEST BUILDINGS]

1 pre-design phase
2 design phase
3 construction phase
4 post construction

C6c Have you adopted any of the following practices as a result of implementing commissioning?

[Ask for each building mentioned in C6a]

1 Produced detailed operations and maintenance manuals
2 Improved training procedures, including taping trainings for future viewing
3 Adopted energy accounting as a method of tracking facility energy use
4 Implemented improved preventative maintenance routines
5 Others (specify)

C6d Was the building LEED certified or built to LEED specifications without being certified?

[Ask for each building mentioned in C6a]

1 LEED certified [ask C6e]

2 Built to LEED specifications but not certified [ask C6f]
3 Neither [skip to C6ff]

C6e What was the certification level for the LEED certified building?

OPEN

C6f Why did you build to LEED specifications without getting the building LEED certified?

OPEN

C6ff Were there other standards you used? If so, what were they?

1 Yes (specify)
2 No

C6g What was the annual kWh/therm usage for the building in 2008?

[Ask for each building mentioned in C6a]

1 _____ annual kWh
2 _____ annual therms
3 Don't Know, but tracked
4 Don't know, not tracked
5 Both kWh and therms (SPECIFY) *

[ASK IF C6g = 3]

C6g_i May I please have the contact information of the person who is responsible for tracking this data?

1 Yes
2 No

C6g_NM Contact Name _____

C6g_PN Contact Phone Number _____

C6G_EA Contact E-mail Address _____

C6h How much energy do you estimate you have saved annually as a result of including commissioning?

[Ask for each building mentioned in C6a]

(Interviewers: need either 1,2,3,5)

1 Annual Dollar savings (specify)
2 Annual kWh savings (specify)
3 Annual Therm savings (specify)
4 Peak kW reduction
5 Percent of energy saved (specify)

6 Other (specify)
7 Don't know

C6i What is the building area, in square feet, of this building?

[Ask for each building mentioned in C6a]

_____ square footage

C6j Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to implement commissioning for this building?

[Ask for each building mentioned in C6a]

0	1	2	3	4	5	6	7	8	9	10
Not At All Influential										Very Influential

[ASK C7 series if C5 = 2]

C7a How many existing buildings has your campus upgraded using commissioning since you attended the course?

_____ number of buildings (should be greater than 0 if C5=1)

C7b Have you adopted any of the following practices as a result of implementing commissioning?

[Ask for each building mentioned in C7a]

1 Produced detailed operations and maintenance manuals
2 Improved training procedures, including taping trainings for future viewing
3 Adopted energy accounting as a method of tracking facility energy use
4 Implemented improved preventative maintenance routines
5 Others (specify)

C7c What was the annual kWh/therm usage for each building before the commissioning?
[Ask for each building mentioned in C7a]

1 _____ annual kWh
2 _____ annual therms
3 Don't Know, but tracked
4 Don't know, not tracked

[ASK IF C7c = 3]

C7c_i May I please have the contact information of the person who is responsible for tracking this data?

1 Yes
2 No

C7c_NM Contact Name _____

C7c_PN Contact Phone Number _____

C7c_EA Contact E-mail Address _____

C7d What is the annual kWh/therm usage for each building after commissioning?

[Ask for each building mentioned in C7a]

1 _____ annual kWh
2 _____ annual therms
3 Don't Know, but tracked
4 Don't know, not tracked

[ASK IF C7d = 3]

C7d_i May I please have the contact information of the person who is responsible for tracking this data?

1 Yes
2 No

C7d_NM Contact Name _____

C7d_PN Contact Phone Number _____

C7d_EA Contact E-mail Address _____

C7e How much energy do you estimate you have saved annually as a result of including commissioning?

[Ask for each building mentioned in C7a]

(Programming/Interviewers: need either 1,2,3,5)

1 Annual Dollar savings (specify)
2 Annual kWh savings (specify)
3 Annual Therm savings (specify)
4 Peak kW reduction
5 percent of energy saved (specify)
6 Other (specify)
7 Don't know

C7f What is the building area, in square feet, of this building?

[Ask for each building mentioned in C7a]

_____ square footage

C7g Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to implement commissioning for this building?

[Ask for each building mentioned in C67]

0	1	2	3	4	5	6	7	8	9	10
Not At All Influential										Very Influential

C8 What benefits did you realize from adding the commissioning process?

(Check all that apply)

1 Original design intent carried through to completion
2 Modified design from original design
3 Problems solved earlier in the construction process
4 Project completed on time
5 Project completed on budget
6 Fewer change orders during construction
7 Proper equipment operation
8 Improved indoor air quality
9 Expected energy efficiency and savings realized
10 Avoided equipment replacement costs
11 Reduced operation and maintenance costs
12 Properly trained operational staff
13 Proper maintenance manuals
14 Reduced crisis maintenance
15 Other (specify)

C9 What actions are you taking now that you wouldn't have taken prior to attending the course?

OPEN

C10 Did you receive any financial or technical assistance from a utility program other than the commissioning course?

1 Yes, financial assistance (specify)
2 Yes, technical assistance (specify)
3 No assistance [Skip to end of section]

C11 Through which program(s) did you receive assistance? [INDICATE ALL THAT APPLY]

1 PGE – ABAG
2 PGE – AMBAG
3 PGE – Redwood
4 PGE – SVEW (Silicon Valley Energy Watch)
5 SCE – Ventura County
6 SCE – Bakersfield-Kern
7 SCE – San Gabriel Valley

8 SCE – UC/CSU
9 SCE – LGEAR/Mammoth Lakes
10 SCE – LGEAR/Ridgecrest
11 SDGE – Chula Vista
12 SCE program (name unknown)
13 PGE program (name unknown)
14 SCG program (name unknown)
15 SDGE program (name unknown)
16 Other (SPECIFY)

C12 Did the course provide you information about the utility program in which you participated?

1 Yes
2 No (skip to C14)
3 Don't know (skip to C14)

C13 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to participate in the utility program?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

[ASK IF C10 = 1]

C14 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the financial assistance have on your decision to implement commissioning?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

MBCx – Monitoring Based Commissioning

[ASK SECTION IF COURSE = 4]

MB0 As I mentioned earlier, [fill with MBCx text if course flag = 4]

MBCx – Monitoring Based Commissioning [IF COURSE FLAG=4]
This workshop provided information on monitoring based commissioning by clearly identifying what it is, why it's important for campuses, and how to measure and monitor building energy usage to achieve savings. It covered an overview as well as the process, sample diagnostics, measurement and verification, case studies and reporting requirements.

CONTINUE

MB1a In how many buildings had your campus implemented monitoring based commissioning before you attended the course?

_____ number of buildings

MB1b In how many buildings has your campus implemented monitoring based commissioning since you attended the course?

_____ number of buildings (If ans = 0 skip to next section)

MB2 What type of monitoring equipment has your campus invested in?

1 None
2 Meters/sub-meters
3 Telemetry
4 Trending Software
5 Energy management control systems (EMCS)
6 Use of alarm points in EIS
7 Energy accounting software
8 Others (specify)

MB3 Which systems are you monitoring?

1 Reheat Systems
2 Chilled/Hot Water Pump Systems
3 Variable Frequency Drives (VFD)
4 District Cooling Systems
5 Other (specify)

MB4 Have you added in-house staff or contracted with anyone to manage your monitoring based commissioning system?

1 Yes, added in-house staff
2 Yes, added a commissioning consultant
3 No additions staff needed

MB5 What, if any changes have you made to training for your campus maintenance staff now that you have implemented monitoring based commissioning?

OPEN

MB6 What benefits have you realized from implementing monitoring based commissioning?

1 Improved operation of existing equipment/systems
2 Energy savings
3 Reduced energy bills
4 Ability to permanently monitor systems
5 Trending capability
6 Verification and persistence of savings
7 Benchmarking
8 Identification of future retrofit projects
9 Best practice report for future planning
10 Earlier notification of problems
11 Other (specify)

MB7 What was the annual kWh/therm usage for the building prior to implementation of monitoring based commissioning?

[Ask for each building mentioned in MB1b]

1 _____ annual kWh
2 _____ annual therms
3 Don't Know, but tracked
4 Don't know, not tracked

[ASK IF M7 = 3]

M7 _i May I please have the contact information of the person who is responsible for tracking this data?

1 Yes
2 No

M7 _NM Contact Name _____

M7 _PN Contact Phone Number _____

M7 _EA Contact E-mail Address _____

MB7a What was the annual kWh/therm usage for the building after implementation of monitoring based commissioning?

[Ask for each building mentioned in MB1b]

1 _____ annual kWh
2 _____ annual therms
3 Don't Know, but tracked
4 Don't know, not tracked

[ASK IF M7a = 3]

M7a _i May I please have the contact information of the person who is responsible for tracking this data?

1 Yes
2 No

M7a _NM Contact Name _____

M7a _PN Contact Phone Number _____

M7a _EA Contact E-mail Address _____

MB7b How much energy do you estimate you saved annually as a result of implementing monitoring based commissioning?

[Ask for each building mentioned in MB1b]

(Interviewers: need either 1,2,3,5)

1 Annual Dollar savings (specify)
2 Annual kWh savings (specify)
3 Annual Therm savings (specify)
4 Percent saved (specify)
5 Other (specify)
6 Don't know

MB7c What is the building area, in square feet, of this building?

[Ask for each building mentioned in MB1b]

_____ square footage

MB8 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to implement monitoring based commissioning?

[Ask for each building mentioned in MB1b]

0	1	2	3	4	5	6	7	8	9	10
Not At All Influential										Very Influential

MB9 What actions are you taking now that you wouldn't have taken prior to attending the course?

MB10 Did you receive any financial or technical assistance from a utility program other than the monitoring based commissioning course?

1 Yes, financial assistance (specify)
2 Yes, technical assistance (specify)
3 No assistance [Skip to EP0]

MB11 Through which program(s) did you receive financial assistance? [INDICATE ALL THAT APPLY]

1 PGE – ABAG
2 PGE – AMBAG
3 PGE – Redwood
4 PGE – SVEW (Silicon Valley Energy Watch)
5 SCE – Ventura County
6 SCE – Bakersfield-Kern
7 SCE – San Gabriel Valley
8 SCE – UC/CSU
9 SCE – LGEAR/Mammoth Lakes
10 SCE – LGEAR/Ridgecrest
11 SDGE – Chula Vista
12 SCE program (name unknown)
13 PGE program (name unknown)
14 SCG program (name unknown)
15 SDGE program (name unknown)
16 Other (SPECIFY)

MB12 Did the course provide you information about the utility program in which you participated?

1 Yes
2 No [Skip to MB14]
3 Don't know [Skip to MB14]

MB13 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the workshop have on your decision to participate in the utility program?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

[IF MB10=1]

MB14 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the financial assistance have on your decision to implement monitoring based commissioning?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

Environmentally Preferable Purchasing

[ASK IF COURSE = 5]

EP0 As I mentioned earlier, [fill with EP text if course flag = 5]

A half-day workshop designed to educate campus purchasing personnel and policy makers on how to look for energy efficient products when making purchasing decisions.

CONTINUE

EP1 Have you adopted any Environmentally Preferable Purchasing practices or policies since attending the Purchasing Toward Energy & Environmental Sustainability workshop?

[In other words, do you attempt to procure products and services with reduced or minimal environmental impact?]

1 Yes
2 No

EP2 How much did your use of Environmentally Preferable Purchasing practices increase after you attended the course?

1 2 3 4 5 6 7
Not At All A Great Deal

EP2a Why do you say that?

OPEN

EP3 Using a scale of 1 to 7 where 1 is none at all and 7 is a great deal, how much more attention are these purchasing criteria receiving since you attended the workshop?

[ASK FOR EACH LISTED BELOW]

1 2 3 4 5 6 7
None At All A Great Deal

1 Energy efficiency and conservation
2 Water efficiency and conservation
3 ENERGY STAR ratings
4 Utility programs/incentives

EP4 Has your organization adopted any written policy or guideline regarding the purchasing criteria we just discussed as a result of attending the workshop?

[ASK yes/no for each]

1 Energy efficiency and conservation
2 Water efficiency and conservation
3 ENERGY STAR ratings
4 Utility programs/incentives

EP5 Have you taken advantage of group purchasing to leverage better prices on energy efficient products as a result of attending the workshop?

1	Yes	EP5a What have you done?
2	No	EP5b Why not?
3	Don't know	

EP6 What items did you purchase annually prior to attending the workshop?

[SELECT ALL THAT APPLY]

1 Desktop computers
2 Computer monitor
3 Laptop computer
4 Printer/Copier/Scanner/ and/or Fax Machine – full size
5 Printer/Copier/Scanner/ and/or Fax Machine – smaller size (desktop size)
6 External Power Adapters
7 Mailing Machines
8 Water Coolers
9 Light bulbs – CFLs
10 Light bulbs – Linear fluorescents – 2 feet
11 Light bulbs – Linear fluorescents – 4 feet
12 Light bulbs – Linear fluorescents – 8 feet
13 Please specify

EP6_q How many of each did you purchase annually prior to attending the workshop?

[SELECT ALL THAT APPLY]

1 Desktop computers
2 Computer monitor
3 Laptop computer
4 Printer/Copier/Scanner/ and/or Fax Machine – full size
5 Printer/Copier/Scanner/ and/or Fax Machine – smaller size (desktop size)
6 External Power Adapters
7 Mailing Machines
8 Water Coolers
9 Light bulbs – CFLs
10 Light bulbs – Linear fluorescents – 2 feet
11 Light bulbs – Linear fluorescents – 4 feet
12 Light bulbs – Linear fluorescents – 8 feet
13 Please specify

EP6a What percent of those purchased prior to attending the workshop were ENERGY STAR rated?

1 Desktop computers
2 Computer monitor
3 Laptop computer
4 Printer/Copier/Scanner/ and/or Fax Machine – full size
5 Printer/Copier/Scanner/ and/or Fax Machine – smaller size (desktop size)
6 External Power Adapters
7 Mailing Machines

8 Water Coolers
9 Light bulbs – CFLs
10 Light bulbs – Linear fluorescents – 2 feet
11 Light bulbs – Linear fluorescents – 4 feet
12 Light bulbs – Linear fluorescents – 8 feet
13 Please specify

EP6b What percent of those purchased after attending the workshop were ENERGY STAR rated?

1 Desktop computers
2 Computer monitor
3 Laptop computer
4 Printer/Copier/Scanner/ and/or Fax Machine – full size
5 Printer/Copier/Scanner/ and/or Fax Machine – smaller size (desktop size)
6 External Power Adapters
7 Mailing Machines
8 Water Coolers
9 Light bulbs – CFLs
10 Light bulbs – Linear fluorescents – 2 feet
11 Light bulbs – Linear fluorescents – 4 feet
12 Light bulbs – Linear fluorescents – 8 feet
13 Please specify

[IF EP3_4 > 4]

EP6c You mentioned that you are more likely to consider utility programs and incentives since attending the environmentally preferable purchasing workshop. What is the total amount of incentive dollars or loans that you have applied for since the workshop?

1 Total incentive amount (specify)
2 Total loan amount (specify)
3 Nothing – have never applied for anything

EP6d Other than more consideration for purchasing ENERGY STAR products, what have you done to save water or energy as a result of attending the workshop?

(This may include the installation of controls, higher efficiency equipment that was not ES rated, using LEED certified contractors, etc)?

OPEN

EP7 Which of the following environmentally preferable purchasing practices or policies have you adopted?

[1 = Yes, 0 = No]

1 Energy Star equipment is purchased with defaults enabled
2 Communicate importance of maintaining Energy Star settings to end users of equipment
3 Purchasing of printers, copiers, faxes, etc is centralized
4 Purchase recycled stock when available (SPECIFY)?
5 Other (specify)

EP8 Has your organization adopted any written policy or guideline regarding the practices we just discussed?

[Show list of items selected in EP7 – ask yes/no on each item]

1 Energy Star equipment is purchased with defaults enabled
2 Communicate importance of maintaining Energy Star settings to end users of equipment
3 Purchasing of printers, copiers, faxes, etc is centralized
4 Purchase recycled stock when available (SPECIFY)?
5 Other (specify)

EP9 How much energy do you estimate you have saved annually as a result of implementing energy efficient and environmentally sustainable purchasing practices such as favoring energy or water conserving equipment and purchasing ENERGY STAR products?

1 Annual Dollar savings (specify)
2 Annual kWh savings (specify)
3 Annual Therm savings (specify)
4 Other (specify)
5 Don't know

EP9b What actions have you taken that resulted in that level of savings?

EP10 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to pursue more energy efficient products and services?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

EP11 Is there anything else you learned or that you are doing now that you wouldn't have known or done prior to attending the course?

EP12 Did you receive any financial or technical assistance from a utility program other than the Purchasing Toward Energy & Environmental Sustainability workshop?

1 Yes, financial assistance (specify)
2 Yes, technical assistance (specify)
3 No assistance [Skip to end of section]

EP13 Through which program(s) did you receive financial assistance? [INDICATE ALL THAT APPLY]

1 PGE – ABAG
2 PGE – AMBAG
3 PGE – Redwood
4 PGE – SVEW (Silicon Valley Energy Watch)
5 SCE – Ventura County

6 SCE – Bakersfield-Kern
7 SCE – San Gabriel Valley
8 SCE – UC/CSU
9 SCE – LGEAR/Mammoth Lakes
10 SCE – LGEAR/Ridgecrest
11 SDGE – Chula Vista
12 SCE program (name unknown)
13 PGE program (name unknown)
14 SCG program (name unknown)
15 SDGE program (name unknown)
16 Other (SPECIFY)

EP14 Did the course provide you information about the utility program in which you participated?

1 Yes
2 No (skip to EP16)
3 Don't know (skip to EP16)

EP15 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the workshop have on your decision to participate in the utility program?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

[ASK if EP12 = 1]

EP16 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the financial assistance have on your decision to adopt environmentally preferable purchasing practices?

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

ADVANCED FRAMING

[ASK IF COURSE = 1]

AF0 As I mentioned earlier, [fill with AF text if course flag = 1]

Advanced Framing [IF COURSE FLAG=1]
The Advanced Framing workshop outlined opportunities for energy and resource improvements and the magnitude of those opportunities, explored alternatives to conventional framing, and practiced conveying advanced framing information on construction documents.

CONTINUE

AF1 How many homes did you build in the 12 months prior to attending the Advanced framing workshop?

_____ number

AF1a In what percent of these homes did you use advanced framing techniques?

_____ percent

AF2 How many homes have you built since attending the Advanced framing workshop?

_____ number

AF2a Where are those homes located? (Zip codes if available)

OPEN

AF2b Have you implemented any of the advanced framing techniques (also called optimum value engineering) that were discussed at the workshop you attended?

1 Yes
2 No (skip out)

AF3 In what percent of your homes have you implemented each of the following advanced framing techniques?

1	Alternative framing systems (SIPS, ICFs, Straw bale, etc)	___ %
2	24 inch on center studs	___ %
3	24 inch on center floor joists and roof rafters	___ %
5	Eliminate headers in non-load bearing walls	___ %
6	In-line framing	___ %
7	Single lumber headers and top plate	___ %
8	Other (specify)	___ %

[ASK FOR EACH if AF3 > 0%]

AF4 How influential was the course in adopting…

0 1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

1	Alternative framing systems (SIPS, ICFs, Straw bale, etc)	___
2	24 inch on center studs	___
3	24 inch on center floor joists and roof rafters	___
4	2-stud corner framing with drywall clips	___
5	Eliminate headers in non-load bearing walls	___
6	In-line framing	___
7	Single lumber headers and top plate	___
8	Other (specify)	___

AF5 What was the typical square footage of the homes you built using the advanced framing techniques?

_____ sq footage

AF6 What is your primary goal for using the advanced framing techniques?

1 Eliminate material consumption that isn't truly necessary (drywall backing for example)
2 Reduce material consumption where possible
3 Increase use of engineered components rather than dimensional lumber
4 Control waste
5 Reduced labor costs
6 Improved energy performance
7 Other (specify)

AF7 How much do you estimate the average homeowner is saving annually as a result of your use of advanced framing techniques?

1 Annual Dollar savings (specify)
2 Annual kWh savings (specify)
3 Annual Therm savings (specify)
4 Percent saved (specify)
5 Dollars savings from material conservation (specify)
5 Other (specify)
6 Don't know

AF8 Is there anything else you learned or that you are doing now that you wouldn't have known or done prior to attending the course?

AF9 Did you receive any financial or technical assistance from a utility program other than the Advanced Framing course?

1 Yes, financial assistance (specify)
2 Yes, technical assistance (specify)
3 No assistance [Skip to end of section]

AF10 Through which program(s) did you receive financial assistance? [INDICATE ALL THAT APPLY]

1 PGE – ABAG
2 PGE – AMBAG
3 PGE – Redwood
4 PGE – SVEW (Silicon Valley Energy Watch)
5 SCE – Ventura County
6 SCE – Bakersfield-Kern
7 SCE – San Gabriel Valley
8 SCE – UC/CSU
9 SCE – LGEAR/Mammoth Lakes
10 SCE – LGEAR/Ridgecrest
11 SDGE – Chula Vista
12 SCE program (name unknown)
13 PGE program (name unknown)
14 SCG program (name unknown)
15 SDGE program (name unknown)
16 Other (SPECIFY)

AF11 Did the course provide you information about the utility program in which you participated?

1	Yes	
2	No	(skip to AF13)
3	Don't know	(skip to AF13)

AF12 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the information provided in the workshop have on your decision to participate in the utility program?

0	1	2	3	4	5	6	7	8	9	10
Not At All Influential										Very Influential

[ASK if AF9 = 1]

AF13 Using a scale of 0 to 10 where 0 means not at all influential and 10 means very influential, how much influence did the financial assistance have on your decision to implement advanced framing techniques?

0	1	2	3	4	5	6	7	8	9	10
Not At All Influential										Very Influential

ACTIONS TAKEN – EUCC

[ASK IF Respondent Type = EUCC
ELSE IF Respondent Type =EUCR SKIP TO TR1
ELSE SKIP TO QTA0]

TC1 Using a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statements:

g. As a result of taking the course, I recommend energy efficient technologies or practices to my management more often.
h. As a result of taking the course, I am better prepared to evaluate energy efficient options
i. As a result of taking the course, my recommendations regarding energy efficient technologies or practices are viewed by my management as more informed.

1	2	3	4	5	6	7	8
Strongly disagree						Strongly agree	Not Applicable

TC2 Since your participation in the [COURSE NAME] course, have you made any efforts to save energy at the facility[ies] your business occupies or manages where you applied the concepts taught in the course?

1	Yes
2	No
3	Don't know

[ASK IF TC2=1]

TC3 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to make the effort to save energy at your facility[ies]?

1 2 3 4 5 6 7
Not At All Influential Very Influential

[ASK IF TC2=2 or 3]

TC4 Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely is it that you will make an effort within the next 12 months, to save energy at the facility[ies] your business occupies or manages using the concepts taught in the course?

1 2 3 4 5 6 7
Not At All Influential Very Influential

[ASK IF TC2= 2 or 3 AND TC4<4]

TC5 What are the principal reasons you have not, and do not plan to use the concepts taught in the course to save additional energy at your facility(ies)?

[Select all that apply.]

1 I was already applying all of the concepts
2 I was already applying some of the concepts
3 The course did not give me sufficient information to apply the concepts
4 There have been no appropriate situations for me to apply the concepts
5 Too costly
6 Lack of product availability
7 Lack of knowledgeable contractors to implement
8 Other, Specify

TC6 Since you participated in the course, have you:

[Yes =1, No =2, Ask for each]

a. Sought out additional information related to the concepts taught in the course?
b. Shared information you learned in the course with a colleague?
c. Helped convince others in your organization that energy saving actions are needed?
d. Helped convince others outside of your organization that certain types of actions help save energy?

TC7 Have you had an audit done at a facility you occupy or manage within the past 3 years?

1 Yes
2 No
3 Don't know

[IF NO AUDIT (TC7=2)]

TC8 Why have you not had an audit done?

1 We feel it is too costly
2 Is not worth the time and effort
3 Do not need services provided by the audit
4 Interested by have not gotten around to it
5 Do not know how to participate/didn't know it was available
6 Do not want to participate
7 Do not need equipment
8 Other [RECORD]
D Don't know

[Skip to D0]

[IF AUDIT DONE (TC7=1)]

TC9 Did you take any actions as a result of that audit?

1 Yes
2 No
3 Don't know

TC10 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to have an audit done at your facility[ies]?

1	2	3	4	5	6	7	9
Not At All Influential					Very Influential		Audit prior to training

ACTIONS TAKEN – EUCR

TR1 Since you participated in the course, have you made any efforts, such as installing new energy efficient equipment, to save energy in your home where you applied the concepts taught in the course?

1 Yes
2 No
3 Don't know

TR2 Using a scale of 1 to 7 where 1 means not at all likely and 7 means very likely, how likely are you to take action or make changes within the next 12 months, such as installing new energy efficient equipment, to save energy at your home using the concepts taught in the course?

1	2	3	4	5	6	7
Not at all likely					Very likely	

[ASK IF TR1= 2 or 3 AND TR2 <4]

TR3 What are the principal reasons you have not implemented any energy saving actions after attending the course. Select all that apply.

1 I was already applying all of the concepts
2 I was already applying some of the concepts
3 The course did not give me sufficient information to apply the concepts
4 There have been no appropriate situations for me to apply the concepts
5 Too costly
6 Lack of product availability
7 Lack of knowledgeable contractors to implement
8 Other, Specify

TR4 Since you participated in the course, have you:

[Yes =1, No =2, Ask for each]

a. Sought out additional information related to the concepts taught in the course?
b. Shared information you learned in the course with a family member, friend or neighbor?

TR5 Have you had an audit done at your home?

1 Yes
2 No
3 Don't know

[ASK IF NO AUDIT (TR5=2)]

TR6 Why have you not had an audit done?

1 We feel it is too costly
2 Is not worth the time and effort
3 Do not need services provided by the audit
4 Interested by have not gotten around to it
5 Do not know how to participate/didn't know it was available
6 Do not want to participate
7 Do not need equipment
8 Other [RECORD]
D Don't know

[SKIP TO TR9]

[ASK IF AUDIT DONE (TR5=1)]

TR7 Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to have an audit done at your home?

1 2 3 4 5 6 7 9
Not At All Influential Very Influential Audit prior to training

[ASK IF AUDIT DONE (TR5=1)]

TR8 Did you take any actions as a result of that audit?

1 Yes
2 No
3 Don't know

[ASK IF TR1=1 or TR8=1]

TR9 Please describe any changes you have made?

[OPEN END]

[ASK IF TR1=1 or TR8=1]

TR10 Using a scale of 1 to 10 where 1 means not at all influential and 10 means very influential, how much influence did the information provided in the course have on your decision to make the changes you just described?

1 2 3 4 5 6 7 8 9 10
Not At All Influential Very Influential

[ASK IF TR1=1]

TR11 In your opinion, have the changes or enhancements you have made to your home resulted in measurable energy savings?

1 Yes
2 No
3 Don't know

[ASK IF TR11=1]

TR12 In your opinion, how would you characterize the energy savings you realized as a result of your participation in the course? In general would you say these are …

1 Significant energy savings,
2 Moderate energy savings, or
3 Minimal energy savings

[ASK IF TR12=1]

TR13 Have you estimated your average savings?

1 Yes
2 No [SKIP TO D0]

TR14 How did you estimate electricity savings, was it in…(Check all that apply)

1 dollars saved
2 kWh saved
3 Payback time (specify)
4 Other (specify)
D Don't Know

[ASK IF TR14=1]

TR15 Approximately how many dollars did you save?

[NUMERIC OPEN END]

[ASK IF TR14=2]

TR16 Approximately how many kWh did you save?

[NUMERIC OPEN END]

ACTIONS TAKEN – MA

[ASK IF Respondent Type = MA, ELSE SKIP TO D0]

TA0 Based on a scale of 1 to 7 where 1 is strongly disagree and 7 is strongly agree, please indicate the degree to which you agree with the following statement: As a result of taking the **[COURSE]** course, I am more likely to recommend energy efficient equipment, designs or practices to my clients.

1	2	3	4	5	6	7
Strongly disagree						Strongly agree

TA1 Have you applied ANY of the concepts taught in the [COURSE] course to change or enhance the service you provide to your clients?

1 Yes
2 No

[ASK IF TA1= 1, ELSE SKIP TO TA11]

TA2 What changes did you make? Did you…

[1=Yes, 2=No, 3=Don't know]

p. Specify energy efficient measures of which you were unfamiliar prior to taking the course
q. Specify energy efficient measures more frequently than prior to taking the course
r. Apply building or system design principals or elements of which you were unfamiliar prior to taking the course
s. Utilize diagnostic tools or practices of which you were unfamiliar prior to taking the course
t. Utilize building or system design tools or practices of which you were unfamiliar prior to taking the course
u. Change the manner in which you install or maintain energy consuming equipment
v. Change the methods you use to size and specify new energy consuming equipment for my clients

[ASK IF TA2 a-g = 2]

TA3b Please describe any other changes you have made? [OPEN END]

TA3c Using a scale of 1 to 7 where 1 means not at all influential and 7 means very influential, how much influence did the information provided in the course have in your decision to make the changes you just described?

1	2	3	4	5	6	7
Not At All Influential						Very Influential

[ASK IF TA1=2]

TA11 What is the principal reason you have not incorporated any of the concepts taught in the course to enhance the service you provide to your clients?.

1 I was already applying all of the concepts
2 I was already applying some of the concepts
3 The course did not give me sufficient information to apply the concepts
4 There have been no appropriate situations for me to apply the concepts
5 Too costly
6 Lack of product availability
7 Lack of knowledgeable contractors to implement
8 Other, Specify

DEMOGRAPHIC MODULE

D0 **[ASK ALL]** What suggestions do you have for improving the [COURSE] course?

_____

[ASK IF RESPONDENT TYPE=MA,
ELSE IF RESPONDENT TYPE=EUCC SKIP TO DC1,
ELSE IF RESPONDENT TYPE=EUCR SKIP TO X1]

MARKET ACTOR FIRMOGRAPHICS

D1 What types of energy related services or equipment does your business provide? (Check all that apply)

1 Building inspection or plan review
2 Construction
3 Engineering or architectural design
4 Lighting design assistance, sales, installation
5 HVAC equipment sales, installation, repair or maintenance
6 Refrigeration equipment sales, installation, repair or maintenance
7 Motor equipment sales, installation, repair or maintenance
8 Pumping/hydraulic equipment sales, installation, repair or maintenance
9 Other equipment sales, installation, repair or maintenance (Specify)
10 Facility operations or maintenance
11 Energy technology research/consulting
12 Other, please specify

D2 Which of the following best describes your business?

1 I/My business provides services to business customers.
2 I/My business provides services to residential customers.
3 I/My business provides services to business and residential customers.

[ASK IF D2=1 OR 3]

D3 Which market segment do you provide services to most often?

1 Commercial
2 Agricultural
3 Industrial
4 Other (Specify)
5 None/Don't Know
6 Refused

END THANK YOU FOR YOUR TIME

COMMERCIAL FIRMOGRAPHICS

DC1 What is the zip code where your building is located?

(If actions implemented at more than one location, ask zip or city for each C5>1 or MB1>1)

zip code _____

DC2 Does your company lease or own your facility?

1 Lease
2 Own
3 Other, specify

DC3 How old is your building?

1 Less than one year
2 Years – SPECIFY
D (Don't know)
R (Refused)

DC4 How many locations does your firm have in California?

8 1
9 2 to 4
10 5 to 10
11 11 to 25
12 Over 25
13 (Don't know)
14 (Refused)

DC5 What type of building was this?

1 Community Center
2 Conference/Convention Center
3 Health
4 Lodging, Motel
5 Lodging, High-Rise Hotel
6 Manufacturing, General
7 Manufacturing, High Tech/Bio Tech
8 Multifamily, Low-Rise (exterior entries)
9 Multifamily, Mid-Rise (interior entries)
10 Multifamily, High-Rise (interior entries)
11 Museum
12 Office Bldg
13 Religious Worship
14 Restaurant, Full Service (full menu)
15 Restaurant, Quick Service (fast food)
16 Restaurant, Bar/Lounge
17 Retail
18 School
19 Storage
20 Theater / Performing Arts
21 Unknown, Custom or Mixed Use

[IF DC5=3]

DC5a What type of health facility is it?

1 Health/Fitness Center
2 Health, Hospital (inpatient)
3 Health, Long-term Care (Nursing Home)
4 Health, Medical Clinic/Prof. Bldg (outpatient)

[IF DC5=12]

DC5b What type of office facility is it?

1 Office Bldg, High-Rise
2 Office Bldg, Mid-Rise
3 Office Bldg, Two Story
4 Office Bldg, Bank/Financial

[IF DC5=17]

DC5c What type of Retail facility is it?

1 Retail, Department Store
2 Retail, Large Single Story
3 Retail, Stand-Alone Structure
4 Retail, Single Storefront
5 Retail, Strip Mall
6 Retail, Service Station
7 Retail, Service Station/Convenience Store
8 Retail, Warehouse Sales

[IF DC5=18]

DC5d What type of school facility is it?

1 School, Preschool/Daycare
2 School, Relocatable Classroom
3 School, K-6 Elementary
4 School, Middle School
5 School, Secondary (High School)
6 School, College/University

[IF DC5=19]

DC5e What type of storage facility is it?

1 Storage, Conditioned High Bay
2 Storage, Unconditioned High Bay
3 Storage, Conditioned Low Bay
4 Storage, Unconditioned Low Bay

DC7 How many floors are above ground?

DC8 How many floors are below ground?

DC8a Are the walls insulated?

1 Yes
2 No

DC8b Is the attic or ceiling insulated?

1 Yes
2 No

DC8c Are your windows primarily single-paned, double-paned, or about half and half?

1 Single-paned
2 Double-paned
3 Half and half
4 Don't Know
5 Refused

DC9a Approximately what percent of your facility is air conditioned?

DC9b What is the predominant type of cooling equipment used in this building?

1 None
2 Direct expansion air conditioner
3 Chilled water, electric
4 Chilled water, gas (absorption)
5 Evaporative cooler
6 Window units
7 Other (please describe)

[IF DC9b>1]

DC9c How often do you use your air conditioning?

1 Rarely (a few days per year)
2 Sometimes (in between rarely and often)
3 Often (whenever it's hot out)

DC10a Approximately what percent of your facility is heated?

DC10b What type of heating do you have in this building? [READ ALL]

1 None
2 Gas furnace
3 Electric resistance or electric space heaters
4 Heat pump
5 Hot water
6 Room gas
7 Other (please describe)

[IF DC10b>1]

DC10c How often do you use your heating?

1 Rarely (a few days per year)
2 Sometimes (in between rarely and often)
3 Often (whenever it's cold out)

DC11 Operating Hours/Business Hours on Weekdays

DC12 Operating Hours/Business Hours on Saturdays

DC13 Operating Hours/Business Hours on Sundays

END THANK YOU FOR YOUR TIME

RESIDENTIAL DEMOGRAPHICS

X1 In what type of building do you live?

1 Single family home
2 Single-Wide Mobile home
3 Double-Wide Mobile home
4 Multifamily, Low-Rise (exterior entries)
5 Multifamily, Mid-Rise (interior entries)
6 Multifamily, High-Rise (interior entries)
7 Other, Specify

X2 About when was this building first built?

1 Before 1970s
2 1970s
3 1980s
4 1990-94
5 1995-99
6 2000s

X3 What is the approximate square footage of your residence?

[OPEN END]

X4 What is your zip code?

zip code _____

X5 How many floors are above ground?

X6 How many floors are below ground?

X6a Are the walls insulated?

1 Yes
2 No

X6b Is the attic or ceiling insulated?

1 Yes
2 No

X6c Are your windows primarily single-paned, double-paned, or about half and half?

1 Single-paned
2 Double-paned
3 Half and half
4 Don't Know
5 Refused

X7 What type of cooling equipment do you have in this building?

1 None
2 Central AC
3 Window units
4 Heat pump
5 Evaporative cooling
6 Other (please describe)

[IF X7>1]

X7a How often do you use your cooling equipment?

1 Rarely (a few days per year)
2 Sometimes (in between rarely and often)
3 Often (whenever it's hot out)

X8 What type of heating do you have in this building?

1 None
2 Electric
3 Central gas
4 Room gas
5 Heat pump
6 Other (please describe)

[IF X8>1]

X8a How often do you use your heating?

1 Rarely (a few days per year)
2 Sometimes (in between rarely and often)
3 Often (whenever it's cold out)

X9 Including yourself, how many people currently live in your home year-round?

_____ people

X10 What is the highest level of education you have completed?

1 less than high school
2 some high school
3 high school graduate or equivalent (e.g., GED)
4 trade or technical school
5 some college
6 college degree
7 some graduate school
8 graduate degree
9 other (SPECIFY)

X11 Which of the following best represents your annual household income from all sources in 2008, before taxes? Was it . . . .?

1 Less than $20,000 per year
2 $20,000-49,999
3 $50,000-74,999
4 $75,000-99,999
5 $100,000-149,999
6 $150,000-199,999
7 $200,000 or more

END THANK YOU FOR YOUR TIME

APPENDIX K: TRACKING SYSTEM FOR NUMBERED KEY FINDINGS AND RECOMMENDATIONS

Table K-1. Tracking System for Numbered Key Findings and Recommendations

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
ESF1	Executive Summary	Finding	Overarching	v	Table E-2: Average per household/business indirect energy impacts for applicable evaluated programs	-
ESF2	Executive Summary	Finding	Overarching	vi	Determining energy savings from non-resource elements was difficult	-
ESF3	Executive Summary	Finding	Overarching	vi	The estimate of energy savings is more accurate for the few programs that planned and maintained effective information tracking systems	-
ESF4	Executive Summary	Finding	Overarching	vi	The level of engagement of program staff is important in determining the effectiveness of a non-resource element	-
ESF5	Executive Summary	Finding	Overarching	vi	The program staff are dedicated to the success of the LGP programs	-
ESF6	Executive Summary	Finding	Audits	vii	An opportunity is to provide participants with a more in-depth audit experience than that provided through a traditional walk-through audit	-
ESF7	Executive Summary	Finding	Trainings	viii	Analysis indicates that the equipment-specific trainings indirectly provides energy savings for EUCC participants, as well as directly impact their savings through efficient technologies installed	-
ESF8	Executive Summary	Finding	Trainings	ix	Training workshops are reaching correct stakeholders	-
ESF9	Executive Summary	Finding	Trainings	ix	The trainings have increased participant knowledge and understanding of covered energy efficiency concepts	-
ESF10	Executive Summary	Finding	Trainings	ix	EUCC respondents who attended training workshops are better educated about energy efficient opportunities they have at their businesses and are taking action based on that knowledge	-
ESF11	Executive Summary	Finding	Trainings	ix	MA respondents who attended training workshops have altered their practices	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
ESF12	Executive Summary	Finding	Trainings	ix	End-use customers (both EUCC and EUCR) have a greater understanding of energy efficiency opportunities at their facilities	-
ESF13	Executive Summary	Finding	Trainings	x	Increased understanding increases efforts to save energy	-
ESF14	Executive Summary	Finding	Referrals	xi	This review of program referral processes indicates that LGPs have a variety of definitions of and methods used for referrals	-
ESF15	Executive Summary	Finding	Referrals	xi	Participants are typically aware of the programs to which they were referred	-
ESF16	Executive Summary	Finding	Referrals	xi	Program participation is influenced more by personal contact by program staff, program information from the utilities, and participation in previous programs	-
ESF17	Executive Summary	Finding	Referrals	xi	The referrals process is currently not successful in getting customers what they need to participate in appropriate recourse programs	-
ESF18	Executive Summary	Finding	Referrals	xi	Very few LGPs were able to provide tracking data on their referrals to program participants and even fewer had any results from those referrals	-
ESF19	Executive Summary	Finding	Referrals	xi	It is not possible to draw conclusions on the effectiveness of the referrals process in customers' decisions to participate in the program	-
ESR1	Executive Summary	Recommendation	Audits	vii	Establish a system to effectively track customers, services, and information disseminated to program participants	AR1, AF4, AR16
ESR2	Executive Summary	Recommendation	Audits	vii	Provide leave-behind materials and/or reports of recommendations made for program participants	AR2, AR10
ESR3	Executive Summary	Recommendation	Audits	vii	Encourage a program design that includes a more in-depth audit experience for participants	AR3, AF5, AF26, AF33
ESR4	Executive Summary	Recommendation	Audits	vii	Follow up with customers after the audit, reinforcing the messages provided through the audit and providing an opportunity for the program to address any questions	AR4

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
ESR5	Executive Summary	Recommendation	Audits	vii	Ensure that auditors have proper training to provide audits effectively	AR5, AF36
ESR6	Executive Summary	Recommendation	Training	x	Trainings should continue to accompany changes in codes and standards to make sure the codes and standards changes are properly understood, implemented and enforced in order to realize the expected energy savings	TR1, TF7, TF8, TF9
ESR7	Executive Summary	Recommendation	Training	x	In general, the team recommends that training workshops continue to be part of program and portfolio offerings in California as they are resulting in energy savings even though they can be difficult to quantify	TR2
ESR8	Executive Summary	Recommendation	Training	x	Develop a more rigorous methodology for measuring savings	-
ESR9	Executive Summary	Recommendation	Training	x	Standardize tracking of program participation across local government partnerships	TR3
ESR10	Executive Summary	Recommendation	Referrals	xii	Develop a standard definition of what constitutes a “referral” and make it significant enough that there is strong potential for that referral to lead to savings	RR1, RF2
ESR11	Executive Summary	Recommendation	Referrals	xii	Define and establish goals for referrals	RR2, RF2
ESR12	Executive Summary	Recommendation	Referrals	xii	Create detailed plans that are consistent with program theories and describe the referral management, tracking systems, and processes	RR3, RF1, RF2, RF5
ESR13	Executive Summary	Recommendation	Referrals	xii	Ensure that referrals are documented, specific, direct and targeted to the customer	RR4, RF4
ESR14	Executive Summary	Recommendation	Referrals	xii	Require follow-ups to ensure participants are being appropriately referred and finding the assistance they need	RR8, RF1, RF5
ESR15	Executive Summary	Recommendation	Referrals	xii	Evaluate program referrals on an ongoing basis to ensure high participant recollection and to confirm that programs are reaching the appropriate audience	RR9
ESR16	Executive Summary	Reconmmendation	Metrics	xiii	Table E-4 Recommended Metrics for Audit Program Elements	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
ESR17	Executive Summary	Recommendation	Metrics	xiv	Table E-5 Recommended Metrics for Training Program Elements	-
ESR18	Executive Summary	Recommendation	Metrics	xiv	Table E-6 Recommended Metrics for Referral Program Elements	-
ESR19	Executive Summary	Recommendation	Overarching - Design	xv	Place importance on increasing the collaboration and cooperation between the CPUC, utility managers, and program managers, especially when it comes to improving data tracking and measurement processes that are needed to document performance and enable evaluation	OR1, OF2, AR1, TR3, RR5, RR6, RR7
ESR20	Executive Summary	Recommendation	Overarching - Design	xv	Establish concrete definitions for non-resource elements (e.g., referrals or audits) and develop metrics and methods for their measurement	OR2, RR1
ESR21	Executive Summary	Recommendation	Overarching - Design	xv	Establish protocols for future non-resource elements regarding the types of data to be collected and retained (i.e., participant contact information, recommendations, etc.) to improve performance tracking and enable evaluation processes	OR3
ESR22	Executive Summary	Recommendation	Overarching - Design	xv	Develop a standardized tracking system to be used across LGPS to accurately and consistently capture energy savings across element types	OR4, OF2, AR1, TR3, RR5, RR6, OR5, RR7
ESR23	Executive Summary	Recommendation	Overarching - Design	xv	Conduct internal workshops to share information regionally, or state-wide, with LGP and IOU staff	OR6, OR2, AR1, TR3, RR5, RR6, RR7
ESR24	Executive Summary	Recommendation	Overarching - Design	xv	Develop and inform LGP program designers of "best practices" non-resource element case studies through additional research	OR7
OF1	Overarching	Finding	Cross-Cutting	16	Energy savings were estimated for some of the training and audit non-resource element activities	-
OF2	Overarching	Finding	Cross-Cutting	17	The energy savings from NR elements were difficult to measure	-
OF3	Overarching	Finding	Cross-Cutting	17	The depth and level of engagement provided by LGP staff is key	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
OF4	Overarching	Finding	Cross-Cutting	17	Participating businesses and organizations are constrained staffing-wise which limits their ability to effectively pursue energy efficiency opportunities	-
OF5	Overarching	Finding	Cross-Cutting	17	The training sessions were quite successful in that end-use commercial customers (EUCC), end-use residential customers (EUCR), or market actors (MA) were able to choose the topics of most interest to them and have direct contact with experts through the training process	-
OF6	Overarching	Finding	Cross-Cutting	17	Nearly 50% of audit participants surveyed for this study, from two residential audit programs and one small business audit program, implemented at least one energy saving recommendation	-
OF7	Overarching	Finding	Cross-Cutting	18	The referrals process was examined for several LGP programs where the customer was directly referred to an investor-owned utility (IOU) or third-party energy efficiency program by the LGP. One finding was that many people were unaware that they had been referred, which negatively affected this indirect impact evaluation	-
OR1	Overarching	Recommendation	Cross-Cutting	18	Continue to work collaboratively to improve the non-resource program data tracking and measurement process	OF2, AR1, TR3, RR5, RR6, RR7
OR2	Overarching	Recommendation	Cross-Cutting	18	Develop consistent, clear definitions of non-resource elements	RR1
OR3	Overarching	Recommendation	Cross-Cutting	18	Develop metrics and methods for measuring those metrics for non-resource elements	-
OR4	Overarching	Recommendation	Cross-Cutting	18	Establish clear protocols for what data and information is to be collected and retained	OF2, AR1, TR3, RR5, RR6, RR7
OR5	Overarching	Recommendation	Cross-Cutting	19	Develop a consistent tracking system for all non-resource elements	OR2, AR1, TR3, RR5, RR6, RR7
OR6	Overarching	Recommendation	Cross-Cutting	19	Consider periodic workshops and information exchanges	-
OR7	Overarching	Recommendation	Cross-Cutting	19	Conduct additional research to benchmark and develop “best practices” for non-resource elements	RR9
OR8	Overarching	Recommendation	Metrics	20	Table 0-1. Recommended Metrics for Audit Program Elements	-
OR9	Overarching	Recommendation	Metrics	21	Table 0-2. Recommended Metrics for Training Program Elements	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
OR10	Overarching	Recommendation	Metrics	22	Table 0-7. Recommended Metrics for Referral Program Elements	-
AF1	Audit	Finding	Audit: Overarching	27	Table 2-2: Average Indirect Impacts per Household for All Programs Evaluated	-
AF2	Audit	Finding	Audit: Overarching	28	While the residential programs varied in delivery and reporting mechanisms, the annual gross energy savings estimated per household did not differ significantly by program.	-
AF3	Audit	Finding	Audit: Overarching	29	The net-to-gross ratio, and resulting net (or program attributable) energy savings, vary by program	-
AF4	Audit	Finding	Audit: Overarching	29	Retaining participant-specific recommendations in the program tracking database assists in customers' recollection of information provided through the audit	-
AF5	Audit	Finding	Audit: Overarching	31	A more in-depth audit experience encourages customers to change behaviors or install high-efficiency equipment	-
AF6	Audit	Finding	Audit: AMBAG	37	Table 2-5. Detailed Annual and EUL kWh Savings Results from AMBAG Residential Survey	-
AF7	Audit	Finding	Audit: AMBAG	38	Table 2-6. Detailed kW Savings Results from AMBAG Residential Survey	-
AF8	Audit	Finding	Audit: AMBAG	39	Table 2-7. Detailed Therms Savings Results from AMBAG Residential Survey	-
AF9	Audit	Finding	Audit: AMBAG	40	Table 2-8. Average Indirect Impacts per Household for AMBAG Residential	-
AF10	Audit	Finding	Audit: AMBAG	41	Table 2-10. Indirect Impacts Applied to AMBAG Residential Participants in the 2006 – 2008 Program Cycle	-
AF11	Audit	Finding	Audit: CEP Residential	44	Table 2-12. Detailed Annual kWh Savings Results from CEP Residential Survey	-
AF12	Audit	Finding	Audit: CEP Residential	45	Table 2-13. Detailed kW Savings Results from CEP Residential Survey	-
AF13	Audit	Finding	Audit: CEP Residential	46	Table 2-14. Detailed Annual Therms Savings Results from CEP Residential Survey	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
AF14	Audit	Finding	Audit: CEP Residential	47	Table 2-15. Average Indirect Impacts per Household for CEP Residential	-
AF15	Audit	Finding	Audit: CEP Residential	48	Table 2-17. Indirect Impacts Applied to CEP Residential Participants for 2006 – 2008 Program Cycle	-
AF16	Audit	Finding	Audit: CEP Small Business	51	Table 2-19. Detailed Annual kWh Savings Results from CEP Small Business Survey	-
AF17	Audit	Finding	Audit: CEP Small Business	52	Table 2-20. Detailed kW Savings Results from CEP Small Business Survey	-
AF18	Audit	Finding	Audit: CEP Small Business	53	Table 2-21. Average Indirect Impacts per Participant for CEP Small Business Participants	-
AF19	Audit	Finding	Audit: CEP Small Business	54	Table 2-23. Indirect Impacts Applied to CEP Small Business Participants for 2006 – 2008 Program Cycle	-
AF20	Audit	Finding	Audit: CYES	57	Table 2-25. Detailed Annual kWh Savings Results from CYES Residential Survey	-
AF21	Audit	Finding	Audit: CYES	58	Table 2-26. Detailed kW Savings Results from CYES Residential Survey	-
AF22	Audit	Finding	Audit: CYES	59	Table 2-27. Detailed Annual Therms Savings Results from CYES Residential Survey	-
AF23	Audit	Finding	Audit: CYES	60	Table 2-28. Average Indirect Impacts per Household for CYES Residential Participants for Program Year 2008	-
AF24	Audit	Finding	Audit: CYES	61	Table 2-30. Indirect Impacts Applied to CYES Residential Participants for 2006 – 2008 Program Cycle	-
AF25	Audit	Finding	Audit: ABAG	62	Respondents spoke highly of the implementation contractor, Energy Solutions, and the services they provided them	-
AF26	Audit	Finding	Audit: ABAG	62	Of the three audit types, the investment-grade audit was the most influential in moving local governments to complete energy efficiency projects	-
AF27	Audit	Finding	Audit: ABAG	62	Although the in-depth audits and financial incentives are important in moving projects forward, respondents indicated that the turnkey approach provided by the program was equally important	-
AF28	Audit	Finding	Audit: ABAG	62	Respondents also discussed the importance of the energy champion's role to help move energy efficiency projects from concepts to activity	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
AF29	Audit	Finding	Audit: ABAG	62	Financial constraints are the most commonly noted barrier to implementing energy efficiency projects	-
AF30	Audit	Finding	Audit: ABAG	62	Respondents indicated that energy efficiency is not typically budgeted separately from other capital improvement projects	-
AF31	Audit	Finding	Audit: ABAG	63	Given the value of the program to them, several respondents were surprised when they spoke with other local governments and found out that they were not aware of the program	-
AF32	Audit	Finding	Audit: ABAG	63	Respondents were generally very satisfied with all the offerings provided through the program	-
AF33	Audit	Finding	Audit: ABAG	67	Services Received through ABAG	-
AF34	Audit	Finding	Audit: ABAG	68	ABAG's Turnkey Approach	-
AF35	Audit	Finding	Audit: ABAG	69	Priority of Energy Efficiency	-
AF36	Audit	Finding	Audit: ABAG	70	Education and Energy Champions	-
AF37	Audit	Finding	Audit: ABAG	71	Barriers for Implementing Energy Efficiency Projects	-
AF38	Audit	Finding	Audit: ABAG	72	Marketing Opportunities	-
AF39	Audit	Finding	Audit: ABAG	73	Other Opportunities for Local government facilities	-
AR1	Audit	Recommendation	Audit: Overarching	31	Establish a system to effectively track customers, services, and information disseminated to program participants	AF4, AR16
AR2	Audit	Recommendation	Audit: Overarching	31	Provide leave-behind materials and/or reports of recommendations made for program participants	AR10
AR3	Audit	Recommendation	Audit: Overarching	31	Encourage a program design that includes a more in-depth audit experience for participants	AF5, AF26, AF33
AR4	Audit	Recommendation	Audit: Overarching	32	Follow up with customers after the audit, reinforcing the message provided through the audit and providing an opportunity for the program to address any questions	-
AR5	Audit	Recommendation	Audit: Overarching	32	Ensure that auditors have proper training to provide audits effectively	AF36
AR6	Audit	Recommendation	Audit: AMBAG	41	This AMBAG audit effort funded and directed by the CPUC is the first for these programs to capture program-attributable indirect impacts. This should not be the last	AF4

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
AR7	Audit	Recommendation	Audit: CEP Residential	48	The CEP residential program should continue to clearly document recommendations and other non-resource activities provided to households. As the program shifts, the database should shift along with it	AF4
AR8	Audit	Recommendation	Audit: CEP Small Business	54	California programs that provide non-resource activities, such as training and education, should continue to clearly document recommendations and other non-resource activities provided to businesses. Similarly, as the program shifts, the database should shift along with it	AF4
AR9	Audit	Recommendation	Audit: CYES	61	The CYES program should continue to clearly document recommendations and other non-resource activities provided to households. As the program shifts, the database should shift along with it	AF4
AR10	Audit	Recommendation	Audit: ABAG	63, 75	Program staff (both utility and partnership staff) should offer and tout the program's ability to provide turnkey services to local governments	AF31, AF38
AR11	Audit	Recommendation	Audit: ABAG	63, 75	To most effectively encourage energy efficiency projects, provide participants with a deeper audit experience	AF26, AF33
AR12	Audit	Recommendation	Audit: ABAG	63, 75	Develop detailed case studies to market the program	AF38
AR13	Audit	Recommendation	Audit: ABAG	63, 76	Include within the program a staff member or consultant who reports and acts on the behalf of the local government	AF28, AF36
AR14	Audit	Recommendation	Audit: ABAG	63, 76	Provide a complete set of program services, which should include project assessment, planning implementation, completion, follow-up support, and project documentation	AR26, AF32, AF33
AR15	Audit	Recommendation	Audit: ABAG	64, 76	Consider offering a holistic building audit in addition to the targeted measure-specific audit	AF32, AF39
AR16	Audit	Recommendation	Audit: ABAG	64, 77	Continue to provide education and outreach opportunities for local governments, specifically targeting groups that could influence the decision-making process or installation of energy efficient equipment	AF4, AF36, AR6, AR7, AR8, AR9
TF1	Training	Finding	Training - Overarching	82	Training workshops are reaching correct stakeholders	-
TF2	Training	Finding	Training - Overarching	83	The trainings have increased participant knowledge and understanding of covered energy-efficiency topics	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
TF3	Training	Finding	Training - Overarching	84	EUCC respondents who attended training workshops are better educated about energy efficiency opportunities and are taking action based on that knowledge	-
TF4	Training	Finding	Training - Overarching	85	MA respondents who attended trainings altered their practices	-
TF5	Training	Finding	Training - Overarching	86	End-use customers (both EUCC and EUCR) have a greater understanding of energy efficiency opportunities at their facilities and market actors indicate increased understanding and confidence in delivering energy efficiency services to customers	-
TF6	Training	Finding	Training - Overarching	86	Increased understanding increases efforts to save energy	-
TF7	Training	Finding	Training - Codes and Standards Workshop	86	Because of the training, respondents have a better understanding of Title 24 standards	-
TF8	Training	Finding	Training - Codes and Standards Workshop	86	Survey results indicate that the workshop increased participants knowledge of Title 24 standards	-
TF9	Training	Finding	Training - Codes and Standards Workshop	86	Survey responses suggest that the workshop has positively influenced participants' behavior in terms of Title 24 standards and energy efficiency	-
TF10	Training	Finding	Training - Equipment Specific Workshops	86	The equipment-specific training workshops have increased participant knowledge	-
TF11	Training	Finding	Training - Equipment Specific Workshops	86	Equipment-specific knowledge is being shared with others	-
TF12	Training	Finding	Training - Equipment Specific Workshops	87	Both residential and non-residential customers are taking energy efficient actions as a result of the equipment-specific trainings	-
TF13	Training	Finding	Training - Equipment Specific Workshops	87	Market actors have changed their practices as a result of attending the equipment-specific trainings	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
TF14	Training	Finding	Training - Equipment Specific Workshops	87	Analysis indicates that the equipment-specific trainings indirectly provide energy savings for EUCC participants, as well as directly impact their savings through technologies directly installed	-
TF15	Training	Finding	Training - Process Workshop	87	As found for prior training workshops, the survey results indicate the process training workshops positively impacted participants' knowledge of covered topics	-
TF16	Training	Finding	Training - Process Workshop	87	Process training workshop participants are sharing the information that they learned through the workshops	-
TF17	Training	Finding	Training - Process Workshop	88	The Commissioning workshops are increasing the commissioning practice with several reported benefits, including energy savings, although participants were not able to quantify the energy savings	-
TF18	Training	Finding	Training - Process Workshop	88	Advanced Framing is being implemented by over half of training participants	-
TF19	Training	Finding	Training - Process Workshop	88	The survey results provide evidence of improved energy efficiency behavior attributable to the process training workshops for all types of participants.	-
TF20	Training	Finding	Training - Cross-Cutting Participants	92	Trainings increase participants' knowledge of energy efficient applications	-
TF21	Training	Finding	Training - Cross-Cutting Participants	92	Respondents are more knowledgeable about how to incorporate energy efficiency in their work	-
TF22	Training	Finding	Training - Cross-Cutting Participants	92	Participants share workshop information with both colleagues and clients as a result of the trainings they attend	-
TF23	Training	Finding	Training - Cross-Cutting Participants	92	Training workshops have a significant influence on participants	-
TF24	Training	Finding	Training - Codes and Standards Workshop	111	Because of the training, respondents have a better understanding of Title 24 standards	-
TF25	Training	Finding	Training - Codes and Standards Workshop	111	The workshop successfully attracted a range of professionals who are primarily involved with compliance and enforcement	-
TF26	Training	Finding	Training - Codes and Standards Workshop	111	Survey results indicate that the workshop increased participants knowledge of Title 24 standards	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
TF27	Training	Finding	Training - Codes and Standards Workshop	111	Survey responses suggest that the workshop has positively influenced participants' behavior in terms of Title 24 standards and energy efficiency	-
TF28	Training	Finding	Training - Equipment Specific Workshops	124	Equipment-specific trainings indirectly provide energy savings, as well as directly impact their savings through technologies directly installed	-
TF29	Training	Finding	Training - Equipment Specific Workshops	125	The trainings have increased participant knowledge.	-
TF30	Training	Finding	Training - Equipment Specific Workshops	125	Knowledge is being shared with others	-
TF31	Training	Finding	Training - Equipment Specific Workshops	125	Workshops are positive influence on understanding of energy efficient opportunities	-
TF32	Training	Finding	Training - Equipment Specific Workshops	125	Both residential and non-residential customers are taking energy efficient actions as a result of the trainings	-
TF33	Training	Finding	Training - Equipment Specific Workshops	125	Market actors have changed their practices as a result of attending workshops	-
TF34	Training	Finding	Training - Process Workshop	139	As found for prior training workshops, the survey results indicate the process training workshops positively impacted participants' knowledge of covered topics	-
TF35	Training	Finding	Training - Process Workshop	139	End-use customers (both EUCC and EUCR) have a greater understanding of energy efficiency opportunities at their facilities and market actors indicate increased understanding and confidence in delivering energy efficiency services to customers	-
TF36	Training	Finding	Training - Process Workshop	139	The survey results provide evidence of improved energy efficiency behavior attributable to the process training workshops for all types of participants.	-
TF37	Training	Finding	Training - Process Workshop	139	Similar to previous training results, participants are sharing the information that they learned through the trainings	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
TF38	Training	Finding	Training - Process Workshop	139	The Commissioning workshops are increasing the commissioning practice with several reported benefits, including energy savings, although participants were not able to quantify the energy savings	-
TF39	Training	Finding	Training - Process Workshop	140	Advanced Framing is being implemented by over half of training participants	-
TR1	Training	Recommendation	Training - Recommendation	88	We specifically recommend that training should accompany changes in codes and standards to make sure the codes and standards are properly understood, implemented, and enforced in order to realize the expected energy savings	TF7, TF8, TF9
TR2	Training	Recommendation	Training - Recommendation	88	Based on the above key findings, we recommend that training workshops continue to be part of program and portfolio offerings in California as they are resulting in energy savings even though they may be difficult to quantify	-
TR3	Training	Recommendation	Training - Recommendation	89	Standardize tracking of program participation across local government partnerships	-
RF1	Referral	Finding	Referrals - Overarching	160	Implementing a tracking system and conducting follow-ups will ensure that the referring partnership receives proper credit	-
RF2	Referral	Finding	Referrals - Overarching	160	LGPs have a variety of definitions of and methods used for referrals	-
RF3	Referral	Finding	Referrals - Overarching	160	There is a generally high level of awareness of programs to which customers are receiving referrals, and participation is influenced by personal contact by program staff, information from utilities, and participation in previous programs	-
RF4	Referral	Finding	Referrals - Overarching	159	The referrals process is currently not successful in getting customers what they need to participate in appropriate resource programs	-
RF5	Referral	Finding	Referrals - Overarching	160	Only a few partnerships had tracking systems which stood-out or were improving - there are no examples of best practice	-
RF6	Referral	Finding	Referrals - Small Business and Local Government	168	There was a lack of follow-up after a referral was made	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
RF7	Referral	Finding	Referrals - Small Business and Local Government	168	Word-of-mouth or promotional activities were the most mentioned sources of program awareness	-
RF8	Referral	Finding	Referrals - Small Business and Local Government	168	28% of respondents reported participating in one or more of the programs to which they were referred	-
RF9	Referral	Finding	Referrals - Small Business and Local Government	168	Most respondents did not recall being personally contacted regarding the programs to which they were referred	-
RF10	Referral	Finding	Referrals - Small Business and Local Government	168	Personal contact appear to be an effective tool in encouraging people to participate in programs	-
RF11	Referral	Finding	Referrals - Small Business and Local Government	168	Personal recommendations have a significant influence on the respondent's decision to participate in the programs	-
RF12	Referral	Finding	Referrals - Small Business and Local Government	169	Of those who were aware of the program but not personally contacted, utility mailings and bill inserts had the most influence in the respondent's decision to participate in the program	-
RF13	Referral	Finding	Referrals - Small Business and Local Government	169	Respondents who participated in one resource program appear more likely to participate in additional resource programs	-
RF14	Referral	Finding	Referrals - Small Business and Local Government	169	The majority of respondents indicated that they were interested in the programs to which they were referred	-
RF15	Referral	Finding	Referrals - Small Business and Local Government	169	Equipment services for non-residential customers did not always meet their needs	-
RF16	Referral	Finding	Referrals - Small Bus. Database Analysis	179	Variance and inconsistencies in the database made program attribution impossible	-
RF17	Referral	Finding	Referrals - Residential Households	182	Stores, word-of-mouth, and contractors/vendors were the top three sources of awareness for the residential programs	-

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
RF18	Referral	Finding	Referrals - Residential Households	182	Rebates, or saving money, were listed as the primary motivation factor in participating in the program	-
RF19	Referral	Finding	Referrals - Residential Households	182	Newspaper advertising was listed as the most influential in respondents' decision to participate	-
RF20	Referral	Finding	Referrals - Residential Households	182	The few respondents who were personally contacted rated the personal contact as very influential in the respondents' decision to participate in the program	-
RF21	Referral	Finding	Referrals - Residential Households	182	Respondents who participated in one resource program appear more likely to participate in additional resource programs	-
RF22	Referral	Finding	Referrals - Res. Database Analysis	190	Missing and incomplete data in the database limited ability to collect accurate data	-
RF23	Referral	Finding	Referrals - Res. Database Analysis	190	Data provided by all three partnerships were insufficient to evaluate the referrals process	-
RF24	Referral	Finding	Referrals - Overarching	159	Those LGPs who directly made referrals of customers to resource programs and provided tracking data were generally effective in matching the customers to appropriate program	-
RF25	Referral	Finding	Referrals - Overarching	159	Personal recommendations, particularly by LGP staff, have the strongest influence on the customers' decisions to participate in the program	-
RF26	Referral	Finding	Referrals - Overarching	159	Very few LGPs were able to provide tracking data on their referrals to program participants and even fewer had any results from those referrals	-
RF27	Referral	Finding	Referrals - Overarching	160	It is not possible to draw conclusions on the effectiveness of the referrals process in customers' decisions to participate in the program	-
RR1	Referral	Recommendation	Referrals - Recommendation	160	Develop a standard definition of what constitutes a "referral"	RF2
RR2	Referral	Recommendation	Referrals - Recommendation	161	Define and establish goals for referrals	RF2
RR3	Referral	Recommendation	Referrals - Recommendation	161	LGPs should submit a detailed plan that is consistent with the program theory describing the referral management and tracking process	RF1, RF2, RF5

Tracking Number	Element Type	Finding/ Recommendation	Category	Page Number	Summary	Source (s) for Recommendations
RR4	Referral	Recommendation	Referrals - Recommendation	161	Ensure that referrals are direct and targeted to the customer	RF4
RR5	Referral	Recommendation	Referrals - Recommendation	161	Adopt a consistent state-wide tracking system for referrals	RF1, RF5
RR6	Referral	Recommendation	Referrals - Recommendation	161	The system should ensure that the referring partnerships and the IOU and third-party program managers receiving the referrals all have ready access and appropriate links from their systems to the referral tracking data	RF1, RF5
RR7	Referral	Recommendation	Referrals - Recommendation	161	Tracking systems should include the following data: customer contact information, customer types, specific resource programs, recommended measures/services, referral mechanism, referral date, local partnership contact, reminder lists, notes on follow up, program participation, and utility and third-party program contact lists	RF1, RF5
RR8	Referral	Recommendation	Referrals - Recommendation	162	Follow-ups by LGPs should be required	RF1, RF5
RR9	Referral	Recommendation	Referrals - Recommendation	162	The referrals process should be evaluated on an ongoing basis to reach the appropriate person and ensure recall	-

APPENDIX L: RESPONSES TO COMMENTS SUBMITTED FOR DRAFT REPORT

Table L-1. Responses to Comments Submitted for Draft Report

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	1	SCE	Thank You	Thanks to the CPUC for undertaking this type of innovative research. The Local Government Partnerships have strived to present a complete set of offerings to help their customers. Who else, other than to their utility, should a customer turn to for audits, training, and referrals? They appreciate this effort to help quantify the value of their work. There were obviously a lot of pains taken during this evaluation, and I think the CPUC should be commended on its attempt to document and analyze the energy savings that do stem from non-resource activities. In particular, we deeply appreciate the open communication that the evaluation team offered, by sharing early results with the utilities, and by being willing to consider alternative analyses of the data. We hope that this kind of communication and cooperation can be encouraged in future evaluation studies.	This feedback is appreciated. The time and effort of utility and program staff to support this effort were critical to its success. It is agreed that communication and cooperation are important to maximize the quality of evaluation research and to maximize the value that research can provide to utilities and the programs they offer.
1/12/2010	2	SCE	Compliance with Reporting Protocols	Means need to be reported with some measure of variance, such as standard deviations. The Evaluator's Protocols require this, and it is also the standard practice in most science research fields.	We are familiar with the Sampling and Uncertainty Protocols found in the Evaluation Framework and the Evaluation Protocols. The protocols are very specific with regard to reporting requirements for impacts, however, are much less so with regard to indirect impacts. Much of the requirements for reporting on impacts are based on a coefficient of variance on the impact values for the population. This measurement is not possible with indirect impacts where the impacts are calculated for a sample and extrapolated to the population. We agree that reporting on measurements of variance is important. The protocols for reporting of indirect impacts and the approaches for quantifying them need to be further developed. It should be noted that all sampling in this report was either a simple random sample or a census.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	3	SCE	Compliance with SRA Guidelines	2.11 Handling Non-Responses and "Don't Knows": Please explain what plan was in place to deal with missing data, whatever the reason, and report on how that plan was carried out. Did you zero out the savings and included zero as the data point? Did you insert the sample mean? Did you use another method to impute missing data? Please keep in mind, The absence of evidence is not evidence of absence.	In the draft report the analysis was based on an algorithm that essentially zeroed out savings for don't know responses. For the final report, in part based on comments from utilities, we have re-run the impact calculations dropping the cases where respondents said don't know to all recommendations and/or level of influence. This represented between 0% and 3% of respondents depending on survey effort, so will have minimal impact on the reported impacts. However, we recognize the importance of using algorithms consistent with the protocols.
1/12/2010	4	SCE	Survey methodology	Scales are not anchored correctly at the maximum. Zero means zero likelihood, but 10 means "extremely likely"? That is qualitatively very different from "definitely". Why did the scale not use "definitely"? People are used to reporting zero as zero and 10 as 100%. The fact that the scale was not capped at the psychological maximum value poses serious threats to the ability to compare one person's response to another's. It's hard to misinterpret 100%, or "definitely", or "maximum possible", but it's very easy and likely for respondents to have differing internal definitions of what "extremely likely" means.	While the survey process did not uncover respondents' difficulty in responding to this question appropriately, we appreciate the distinction you are making and agree "definitely" would have been a more concrete terminology to use considering the 0% to 100% scale. We will document this within the report for consideration for future evaluation efforts.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	5	SCE	Compliance with SRA Guidelines	The single question NTG approach does not seem to be valid measure of the free ridership construct. The free ridership construct relates to actions that would have been taken in the absence of the program, the counterfactual. This question asks about actions under the influence of the program, which is the opposite of the counterfactual. Please explain this apparent discrepancy. What other questions were use to validate this construct, per the SRA Guidelines Section 2.4's direction to use multiple questions? The SRA Guidelines were not created out of whole cloth specifically for the purposes of evaluating CA energy programs; they are based on sound scientific research practices. Why did the evaluation team choose to deviate from the SRA Guidelines?	In thinking through the approach for this study we considered a more thorough net to gross battery that is consistent with the SRA Guidelines. Several of the staff that consulted with the LGP team on determining an approach for this indirect impacts study were also on the CA NTG committee so were intimately familiar with the requirements per the protocols and approach taken for resource programs. Given a many of the indirect impacts were associated with behaviors, it was determined that the full NTG battery was too cumbersome and in many cases not appropriate (e.g. questions on quantity and efficiency are not relevant). We believe that the single question regarding the participants assessment of program influence on their action has provided a reasonable estimate of the net savings resulting from program influence; however, we recognize that more work needs to be done to establish the appropriate protocols for this.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	6	SCE	Cost effective recommendations	I have queried two LGP program managers who read this report about whether they believe it is cost effective to conduct this level of analysis in order to capture non-resource savings. They agree that while this is an impressive and painstaking effort, this level of granularity is not necessary to show the value of the LGPs. Given that feedback, might the evaluation team reconsider their numerous recommendations for more and more tracking, and instead think of recommendations that might allow the utilities to devote tracking resources in a more targeted fashion. If yes, can the evaluation team provide some direction as to which activities to prioritize for tracking? Please also take into consideration the fact that the Decision approving the 2010-2012 program cycle cut all administrative costs to 10%.	This comment/question addresses policy with regard to tracking efforts and allocation of evaluation resources and is under the purview of the CPUC. However, the report does provide some additional thinking on these points and also recommends that collaborative efforts are made with the CPUC and among the government partnership programs to continue to move the thinking on these issues forward.
1/12/2010	7	SCE	Cost effective recommendations	The Metrics and Indicators for Success are ambitious, but do not seem cost-effective to measure. Would the evaluation team please prioritize which metrics and indicators are most cost effective?	This addresses policy with regard to metrics and is under the purview of the CPUC. However, in the final version of the report we distinguish between which of these metrics can be reported from data in a tracking system and those metrics which likely require evaluation research, though would be dependent on data being capture in a tracking system. We believe that tracking program activities and reviewing performance against specific metrics is simply good program management and should result in more efficient and cost effective programs.
1/12/2010	8	SCE	Size of savings	The tone of the Executive Summary suggests that the results from this non-resource evaluation show disappointing savings ("These findings are not meant to indicate that these programs are unsuccessful...") However, informal feedback from the program managers suggested that they were delighted and impressed that one could indeed calculate uncaptured energy savings of their non-resource activities. Perhaps one conclusion may be that the Core Resource programs are very good at capturing the energy savings potential out there?	This is more an indication that we were unable to quantify more savings because the tracking systems were not in place to capture information that would have allowed us to do more, while recognizing that these partnership programs are relatively new.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	9	SCE	Generalizability	Would the evaluation team please think about the issue of generalizability in the context of non-resource evaluations. Perhaps it might be better to not generalize the findings. There are numerous analyses in the report where the sample size seems uncomfortably small, and certainly many analyses will discarded because of concerns with sample size. Without the need to generalize, LGP may be able to capture energy savings through case study analyses when they suspect there may be significant energy savings from non-resource activities. The LGP would then only claim what was successfully counted. The doesn't capture ALL the savings, but would probably capture all the savings that is cost effective to evaluate?	We agree we cannot and should not generalize these findings to the partnership programs overall. The energy savings are specific to the population surveyed and type of service provided. The sample sizes are consistent with the resources and data available to the effort. The sampling for these research efforts was either a simple random sample or a census. If programs are going to spend significant dollars on non-resource activities, it is important that some effort is made to ensure those dollars are being cost-effectively utilized.
1/12/2010	10	SCE	Proofreading	Table is cut off. (page 132)	All format-related issues will be addressed in the final version.
1/12/2010	11	SCE	Proofreading	Appendix C is numbered as Appendix D; either C or D is missing.	
1/12/2010	12	SCE	Proofreading	Appendix G-1 is missing.	
1/12/2010	13	SCE	Proofreading	Appendix J is misnumbered and should also have a table of contents.	
1/12/2010	14	SCE	shared problems	This Non-Resource evaluation shares a number of problems with the GP Impact Evaluation study. Comments and questions have been submitted on the GP commenting form and will be included here. Because it is the same team conducting the research, if those questions are adequately answered in the course of the GP comment response process, that's fine.	Please refer to the responses to comments for the Government Partnership Resource Evaluation

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	16	PG&E Company	Study Scope Reduction	Initially intended as an evaluation of 56 resource acquisition and seven non-resource programs that operated during the 2006 – 2008 program cycle, the evaluation protocol was reduced substantially to focus on only a subset of the initial programs. The study scope reduction results in an undercount of actual savings achieved.	We agree that reduction in scope likely did result in an undercount of actual savings achieved. This is largely due to the lack of tracking data from the programs which further highlights the importance of systems for tracking program activity which will allow the programs to be evaluated and where appropriate, indirect impacts estimated.
1/12/2010	17	PG&E Company	Training Sample	The report states, "across the three respondent types, PA Consulting completed a total of 185 surveys. The majority of respondents were MAs (89 participants, representing 48% of the total), followed closely by End-Use Commercial Customers (EUCC) who represented approximately 44% of respondents (82 participants). The smallest group consisted of End-Use Residential Customers (EUCR) respondents, with only 14 participants (eight percent)." The sample values appear very small. These relatively low percentages do not appear to adequately represent the number of customers served overall by the LGP programs. (E2.2, page 7)	This is only for Education/Training efforts, and sampling for these survey efforts was a census and all efforts were made to keep response rates high. However, the low response rates were affected by the length of time that had transpired from the date the trainings were conducted and the date the surveys were implemented.
1/12/2010	18	PG&E Company	Selection of elements evaluated	The report states: ”generally, the magnitude of the potential energy savings and the “evaluability” of the program element(s) determined whether a program element was selected to evaluate.” The pre-selection process makes judgment calls on potential savings, potentially missing savings from elements not as well-understood. (section 1.2 page 16)	The programs were carefully selected based on discussions with program managers and program partners. We only eliminated programs when deemed not possible to receive data or follow-up interviews indicated non-resource activities were not captured adequately. Evaluations could not be completed on elements or programs where data was not provided or estimating impacts was simply not feasible. We were trying to be cost-effective and efficient. Utilities had an opportunity to identify elements that we had missed and (see Appendix G) signed off on the elements prioritized.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	19	PG&E Company	Data Requests	The report states: "[d]ue to the lack of data provided in response to the primary data request, in March 2008, a second wave of data requests was issued. These requests were specifically submitted to LGPs on an individual basis." Program evaluation data requirements should be addressed as early in the program cycle, preferably in program design phase. It is difficult for programs to respond to data requests that were not part of the program implementation process at the end of the program cycle. (section 1.3 page 20)	With regards to the information requested (evaluation data requests) to conduct the non-resource evaluations and the ability of the administrators to provide that information in time to be used to support the evaluation effort, it should be noted that the CPUC held a meeting with the IOUs December 15 and 16, 2005 that presented and discussed the types of data that would be requested to conduct the non-resource evaluation during the up-coming 2006-2008 program cycle. During this meeting, held at the CPUC, the data needs were reviewed and discussed in detail. Following that meeting the data needs were published in the document entitled: California Energy Efficiency Evaluation Protocols, April 2006. Starting on page 205 of this protocol is a detailed list of the information needed to conduct the non-resource evaluations. This list was provided to the administrators in final form approximately two years prior to the CPUC's non-resource LGP evaluation data request. The information requested by the LGP non-resource evaluation contactor was consistent with the data identified during the winter 2005-2006 meeting and formalized in the Protocols. This advance notice to the administrators provided two years pre-notice of the need for the requested information and allowed the administrators time to established those tracking systems prior to the contracting of the evaluation teams for the 2006-2009 program. This advance notice was specifically to allow the administrators time to gather than information and have it ready for the data request. In the opinion of the CPUC, a two year advanced notice should be ample time for the administrators to adjust their program tracking systems to collect the data the CPUC needs to document impacts.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	20	PG&E Company	Data tracking systems	The report states: ”completeness of the provided data was also a recurring issue." The restriction of administrative budget to conduct tasks such as creation of new data tracking systems appears to be contradictory to recommendations to improve data tracking systems for evaluation efforts. (section 1.3 page 21)	The restriction in administrative budgets is a policy issue for the CPUC. However, it should be considered that in part this restriction is a result of concern for pools of funds for which their is little or no accountability for their use. The basic information that programs have been asked to track (name, number, address, information on events, recommendations made, etc.), should be considered good program management and should ultimately result in lower administrative costs and more accountability.
1/12/2010	21	PG&E Company	Net Impact Analysis	The net impact analysis methodology appears to treat non-resource elements similarly to incented widget which is not completely suitable for non-resource elements. A participant from a training or audit activity already has an initial desire for EE actions by seeking out participation. Thus, the education/broadening of knowledge of audits and training is the important piece in determining net savings. Determining this requires broader understanding than what was captured in the surveys net influence questions. Given the survey results and comments which indicate the importance of non-resource elements in understanding about EE, the net analysis results should better reflect the participant comments. (section 1.4 page 25)	We believe the approach taken for estimating net for this report is a defensible approach, but, also recognize that the approach can be improved to better account for the factors you identify. The approach and findings of this report and the approach and findings of the Marketing and Outreach evaluation report, which also made an effort to quantify indirect impacts, will provide valuable information for further development of the best approach for establishing net indirect impacts.
1/12/2010	22	PG&E Company	Recommendations	The report seeks to ”[e]ncourage a program design that includes a more in-depth audit experience for participants. Whereas the CPUC wishes to limit marketing, education and outreach funding for non-resource programs. "The CPUC should consider the recommendations of this report regarding additional program activity for non-resource programs. (section 21.3 page 41)	This is a finding of the research with regard to the effectiveness of audits. It is our understanding that audits are not part of the marketing budget. Limits on marketing, education and outreach funding for non-resource programs are in part due to the lack of accountability for the dollars spent, in part because typically no metrics were established for measuring performance of these activities and little effort to track these program activities.
1/12/2010	23	PG&E Company	NTG Analysis	How were non-respondents i.e. participants who could not recall participating treated in the savings analysis?	Analysis is being re-run. Please see response to Comment #3.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	25	Sempra	Idenfiication Sempra for Joint Programs (from attachment)	\	The Sempra ID numbers will be added the final report where appropriate.
1/12/2010	26	Sempra	NTG Battery in Survey (from attachment)	The survey instruments in the appendix include a long battery of questions for estimating free-ridership, yet the report states that the response to a single question was used for the net impact analysis which asked the respondent to rate the level of influence the program had on their action using a scale of 1 to 10. The report does not contain an explanation of why the remaining survey questions included in the survey were not used in the analysis.	The long battery of questions to which you refer were for the resource component of some of the audit elements, e.g. some low cost measures installed at the time the audit was conducted. While these questions were administered, no results for the resource measures are reported here. This analysis was intended to be part of the resource report before the resource efforts were re-focused on the High Impact Measures.
1/12/2010	27	Sempra	Incorrect characterization of CEP audit element regarding leave behinds (from attachment)	The report states in several places that California Energy Partnership (CEP) did not provide leave-behind materials or reports for their customers after performing an audit. In fact, they do provide a copy of the audit results and recommendations along with program information for each audit recipient. This point should be corrected in the	This will be corrected in the final report.

Date	#	Party	Subject	Comment Summary	Response
1/12/2010	29	Local Government Sustainable Energy Coalition	Timing of the Evaluation (from attachment)	The LGSEC is disappointed that the evaluation process did not begin earlier in the program cycle. In preparing for the 2006-2008 program, the LGSEC had recommended that evaluation should begin early in the program cycle so evaluators can better understand and integrate changes that occur to a program as it is implemented. We hope that this can occur with the 2010-2012 program cycle.	We agree that it is important for evaluation efforts to be more closely aligned with the timing of program activities.
1/12/2010	30	Local Government Sustainable Energy Coalition	Program standardization vs. Program flexibility (from attachment)	The Draft Report recommends developing a more consistent approach across partnerships as to how definitions and methods are used. The LGSEC agrees that shared understandings are valuable and could, in some cases, save time and resources in terms of not having to invent tracking systems or procedures. We are concerned however, that too much standardization in program tools will lead to standardization in program design and delivery. We request that the evaluators and the California Public Utilities Commission ("CPUC") preserve the flexibility for local government programs to have opportunities to innovate and design programs that best meet the needs of the diverse communities in California.	We agree that striking the right balance is important between maintaining flexibility and the uniqueness of these LGP programs and standardizing certain aspects of program delivery (such as a standard definition of "referral") to help future evaluators, provide regulatory accountability, and spread the use or adaptation of best practices.

APPENDIX M: PROGRAM DATABASE TRACKING SYSTEM RECOMMENDATIONS

Table M-1. Program Database Tracking System Recommendations

Element Type	Category	Inputs	Summary
Referral	Program Descriptions	Program Logic models Program theory summary Operational or procedural manuals Activity descriptions Implementation territory summaries Market operations theories	All information pertinent to program operation
	Program Staff	Name Title Phone number Fax number E-mail address Primary work location	Contact information for referring program staff
	Stakeholder Information	Name Title Phone number Fax number E-mail address Description of role in program	Contact information for key market actors, trade allies, and other stakeholders
	Program Identification	Program name or program components	Name of LGP program or component(s)
	Participant Classification	Residential Small business Commercial Government Other	Indicator for participant type

Element Type	Category	Inputs	Summary
	Small Business, Government, or Commercial Participant Information	Name of business/government Primary contact name (first and last name) Primary contact title Address Phone number Fax number E-mail address	Contact information for small business, government, or commercial participants
	Residential Participant Information	Contact name Physical address Mailing address Phone number Fax number E-mail address	Contact information for residential participant
	Resource Programs	Program identifiers	Provides list of resource programs to which participants were referred
	Recommended Equipment	Equipment	Equipment recommended
	Recommended Services	Services	Services recommended
	Referral Mechanism	Referral Mechanism	How the participant was referred (e.g., audit reports, trade shows, community activities, training workshops, etc.)
	Date of Referral	Date	Date of referral
	Reminder Lists	Notes	Reminder lists to ensure referrals are addressed. This may include follow-up lists with customers and/or resource program.
	Notes on Follow-ups or Contacts After Initial Referral	Notes	Follow-up notes can further demonstrate effort in meeting non-resource goals. Include reasons for declining participation.
	Program Participation Indicator	Participated, Declined	Final disposition codes for the referral (i.e., participated, declined, etc.).

Element Type	Category	Inputs	Summary
Training	Program Descriptions	Program Logic models Program theory summary Operational or procedural manuals Activity descriptions Implementation territory summaries Market operations theories	All information pertinent to program operation
	Program Staff	Name Title Phone number Fax number E-mail address Primary work location	Contact information for program staff
	Stakeholder Information	Name Title Phone number Fax number E-mail address Description of role in program	Contact information for key market actors, trade allies, and other stakeholders
	Program Identification	Program name or program components	Name of program or component(s)
	Participant Classification	Residential Small business Commercial Government Other	Indicator for participant type

Element Type	Category	Inputs	Summary
	Small Business, Government, or Commercial Participant Information	Name of business/government Primary contact name (first and last name) Primary contact title Address Phone number Fax number E-mail address	Contact information for small business, government, or commercial participants
	Residential Participant Information	Contact name Physical address Mailing address Phone number Fax number E-mail address	Contact information for residential participant
	Training Summary	Notes	Brief description of training workshop
	Workshop Location	Location of workshop	Location of workshop
	Workshop Date and Duration	Date of workshop Duration of workshop	Date and duration of workshop
	Workshop Title	Title of workshop	Title of workshop
	Collateral	Documents, slides, etc.	Materials from training. These should clearly reflect what was discussed in the workshop.
	Teacher Contact Information	Contact name Title Business/government name (if applicable) Physical address Mailing address Phone number Fax number E-mail address	Contact information for workshop teacher

Element Type	Category	Inputs	Summary
Audit	Program Descriptions	Program logic models Program theory summary Operational or procedural manuals Activity descriptions Implementation territory summaries Market operations theories	All information pertinent to program operation
	Program Staff	Name Title Phone number Fax number E-mail address Primary work location	Contact information for program staff
	Stakeholder Information	Name Title Phone number Fax number E-mail address Description of role in program	Contact information for key market actors, trade allies, and other stakeholders
	Program Identification	Program name or program components	Name of program or component(s)
	Participant Classification	Residential Small business Commercial Government Other	Indicator for participant type

Element Type	Category	Inputs	Summary
	Small Business, Government, or Commercial Participant Information	Name of business/government Primary contact name (first and last name) Primary contact title Address Phone number Fax number E-mail address	Contact information for small business, government, or commercial participants
	Residential Participant Information	Contact name Physical address Mailing address Phone number Fax number E-mail address	Contact information for residential participant
	Recommendations	Equipment purchase recommendations made Behavior change recommendations made	Provide a list of equipment purchases and/or behavior changes recommended during the audit
	Provided Services	Audit services	List of audit services rendered (eg., walk-through, investment grade, etc.)
	Leave Behind Materials	Documents, fliers, etc.	Sample or list of leave behind materials provided to participant (e.g. reports, other program information, etc.)
	Equipment Installed	If Applicable	Provide list of resource equipment installed