

From: Dietz, Sidney  
 Sent: Friday, June 29, 2012 9:37 AM  
 To: Khosrowjah, Sepideh (sepideh.khosrowjah@cpuc.ca.gov)  
 Subject: ESAPand EE cost-effectiveness numbers for furnaces and water heaters

Sepideh –

Here are a few numbers from our team around the issue of cost effectiveness and energy savings of the furnace and water heater measures for landlords. I've also included the CPUC's ranked list of measures for PG&E's ESAP.

I think the problem of having tenants being deprived of basic services in their units is an awful one, whether central heating or cooling system is broken or just turned off by a landlord. And I hope that PG&E can be part of the solution. I think we should confront the problem directly, though, with a program designed specifically for this situation – I think the numbers below show that trying to bend cost effectiveness or about energy savings won't get us to a solution since our problem has to do with fairness, dignity, comfort, health, and safety. In fact, solving the problem won't save money or save energy since the problem is the under use of energy.

Let me know if you have any questions.

yours,

sid

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Cost effectiveness of furnace and water heater measures for landlords. The table below shows the ranked list of measures for PG&E's ESAP. The numbers in the table are the cost effectiveness of the measures, and the numbers in the text are the energy savings. The numbers in the text are the energy savings.

Table with 2 columns: Measure, Cost Effectiveness. The first column contains measure IDs and descriptions, and the second column contains cost effectiveness values.

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Attachment H.1

Energy Savings Assistance Program Cost-Effectiveness - Weather Sensitive Measures  
Pacific Gas and Electric Company

Measure	Measure Group	Type of Home (SF, MH, MF)	Electric or Gas (E, G)	Climate Zone (Number)	Ratio of Benefits Over Costs*			Approved
					Utility Cost Test	Modified Participant Test	Total Resource Cost Test	
New AC TIME DELAY MH/CZ13	HVAC	MH	E	13	2.03	6.43	1.73	X
New AC TIME DELAY MH/CZ14	HVAC	MH	E	14	2.02	6.43	1.73	X
New AC TIME DELAY MH/CZ11	HVAC	MH	E	11	1.95	5.34	1.68	X
New AC TIME DELAY MH/CZ12	HVAC	MH	E	12	1.87	4.35	1.62	X
New AC TIME DELAY MH/CZ4	HVAC	MH	E	4	1.65	3.09	1.42	X
New AC Tune-up- Central w/CZ14 w/SF	HVAC	SF	E	14	1.64	3.08	1.40	X
New AC Tune-up- Central w/CZ14 w/MH	HVAC	MH	E	14	1.64	3.08	1.42	X
New AC TIME DELAY MH/CZ2	HVAC	MH	E	2	1.55	2.56	1.34	X
New AC TIME DELAY SF/CZ13	HVAC	SF	E	13	1.54	2.55	1.32	X
New AC TIME DELAY SF/CZ14	HVAC	SF	E	14	1.53	2.55	1.31	X
New AC TIME DELAY SF/CZ11	HVAC	SF	E	11	1.45	2.14	1.25	X
A/C Tune-up- Central w/CZ14 w/MF	HVAC	MF	E	14	1.37	2.01	1.18	X
A/C Tune-up- Central w/CZ13 w/SF	HVAC	SF	E	13	1.36	1.96	1.17	X
A/C Tune-up- Central w/CZ11 w/SF	HVAC	SF	E	11	1.30	1.71	1.12	X
New AC TIME DELAY MH/CZ5	HVAC	MH	E	5	1.20	1.66	1.02	X
New AC TIME DELAY MH/CZ6	HVAC	MH	E	6	1.20	1.66	1.02	X
New AC Tune-up- Central w/CZ13 w/MH	HVAC	MH	E	13	1.25	1.63	1.07	X
New AC TIME DELAY MF/CZ13	HVAC	MF	E	13	1.24	1.59	1.06	X
New AC TIME DELAY MH/CZ3	HVAC	MH	E	3	1.19	1.44	1.03	X
A/C Tune-up- Central w/CZ11 w/MH	HVAC	MH	E	11	1.18	1.42	1.02	X
A/C Tune-up- Central w/CZ13 w/MF	HVAC	MF	E	13	1.14	1.38	0.98	X
New AC TIME DELAY SF/CZ12	HVAC	SF	E	12	1.18	1.35	1.03	X
New AC TIME DELAY MF/CZ11	HVAC	MF	E	11	1.13	1.30	0.98	X
A/C Tune-up- Central w/CZ12 w/SF	HVAC	SF	E	12	1.11	1.22	0.96	X
A/C Tune-up- Central w/CZ11 w/MF	HVAC	MF	E	11	1.05	1.15	0.91	X
Evap Coolers R&R SF/CZ13	HVAC	SF	E	13	1.03	1.15	0.88	X
Evap Coolers R&R SF/CZ14	HVAC	SF	E	14	1.02	1.15	0.88	X
Evap Coolers R&R SF/CZ16	HVAC	SF	E	16	1.03	1.14	0.88	X
Air Sealing / Envelope MH/CZ13/G-wAC	HVAC	MH	EG	13	0.83	1.08	0.45	X
Air Sealing / Envelope MH/CZ14/G-wAC	HVAC	MH	EG	14	0.52	1.08	0.45	X
A/C Tune-up- Central w/CZ12 w/MH	HVAC	MH	E	12	1.03	1.07	0.89	X
New AC TIME DELAY SF/CZ16	HVAC	SF	E	16	1.00	1.07	0.85	X
Evap Coolers R&R MH/CZ14	HVAC	MH	E	14	0.97	1.06	0.83	X
Evap Coolers R&R MH/CZ13	HVAC	MH	E	13	0.98	1.06	0.83	X
Air Sealing / Envelope SF/CZ13/G-wAC	ENCLOSURE	SF	EG	13	0.52	1.04	0.44	X
Air Sealing / Envelope SF/CZ14/G-wAC	ENCLOSURE	SF	EG	14	0.52	1.04	0.44	X
Air Sealing / Envelope MH/CZ16/G-wAC	ENCLOSURE	MH	EG	16	0.49	0.98	0.41	X
Air Sealing / Envelope SF/CZ16/G-wAC	ENCLOSURE	SF	EG	16	0.48	0.95	0.41	X
Air Sealing / Envelope MH/CZ11/G-wAC	ENCLOSURE	MH	EG	11	0.48	0.94	0.40	X
Air Sealing / Envelope SF/CZ11/G-wAC	ENCLOSURE	SF	EG	11	0.45	0.88	0.38	X
New AC TIME DELAY MF/CZ12	HVAC	MF	E	12	0.61	0.87	0.79	X
Air Sealing / Envelope MH/CZ12/G-wAC	ENCLOSURE	MH	EG	12	0.44	0.84	0.38	X
A/C Tune-up- Central w/CZ16 w/SF	HVAC	SF	E	16	0.84	0.83	0.72	X
Evap Coolers R&R MH/CZ11	HVAC	MH	E	11	0.85	0.81	0.73	X
New AC TIME DELAY SF/CZ4	HVAC	SF	E	4	0.83	0.81	0.71	X
Evap Coolers R&R SF/CZ11	HVAC	SF	E	11	0.84	0.81	0.73	X
Evap Coolers R&R SF/CZ12	HVAC	SF	E	12	0.84	0.78	0.73	X
Air Sealing / Envelope SF/CZ12/G-wAC	ENCLOSURE	SF	EG	12	0.41	0.77	0.35	X
Air Sealing / Envelope MF/CZ14/G-wAC	ENCLOSURE	MF	EG	14	0.40	0.75	0.35	X
Air Sealing / Envelope MF/CZ13/G-wAC	ENCLOSURE	MF	EG	13	0.40	0.75	0.35	X
Evap Coolers R&R MH/CZ12	HVAC	MH	E	12	0.82	0.75	0.71	X
Air Sealing / Envelope MH/CZ13/E-wAC	ENCLOSURE	MH	E	13	0.40	0.74	0.34	X
Air Sealing / Envelope MH/CZ14/E-wAC	ENCLOSURE	MH	E	14	0.40	0.74	0.34	X
Air Sealing / Envelope SF/CZ13/E-wAC	ENCLOSURE	SF	E	13	0.40	0.73	0.34	X
Air Sealing / Envelope SF/CZ14/E-wAC	ENCLOSURE	SF	E	14	0.39	0.73	0.34	X
Air Sealing / Envelope MF/CZ14/E-wAC	ENCLOSURE	MF	E	14	0.39	0.73	0.34	X
Air Sealing / Envelope MF/CZ13/E-wAC	ENCLOSURE	MF	E	13	0.40	0.73	0.34	X
A/C Tune-up- Central w/CZ16 w/MH	HVAC	MH	E	16	0.76	0.72	0.65	X
New AC TIME DELAY MF/CZ16	HVAC	MF	E	16	0.77	0.72	0.66	X
Air Sealing / Envelope MH/CZ11/G-wAC	ENCLOSURE	MH	EG	11	0.34	0.72	0.29	X
Air Sealing / Envelope MH/CZ11/G-noAC	ENCLOSURE	MH	G	11	0.35	0.72	0.29	X
A/C Tune-up- Central w/CZ12 w/MF	HVAC	MF	E	12	0.75	0.66	0.65	X
Air Sealing / Envelope SF/CZ11/G-wAC	ENCLOSURE	SF	EG	11	0.32	0.65	0.27	X
Air Sealing / Envelope SF/CZ11/G-noAC	ENCLOSURE	SF	G	11	0.32	0.65	0.27	X
A/C Tune-up- Central w/CZ4 w/SF	HVAC	SF	E	4	0.70	0.65	0.60	X
Air Sealing / Envelope MF/CZ16/G-wAC	ENCLOSURE	MF	EG	16	0.35	0.64	0.30	X
A/C Tune-up- Central w/CZ6 w/MH	HVAC	MH	E	6	0.63	0.62	0.53	X
Air Sealing / Envelope MH/CZ2/G-wAC	ENCLOSURE	MH	EG	2	0.32	0.62	0.27	X
New AC TIME DELAY MF/CZ4	HVAC	MF	E	4	0.67	0.61	0.58	X
Air Sealing / Envelope MF/CZ16/E-wAC	ENCLOSURE	MF	E	16	0.34	0.61	0.29	X
Air Sealing / Envelope SF/CZ16/E-wAC	ENCLOSURE	SF	E	16	0.33	0.58	0.28	X
Air Sealing / Envelope SF/CZ2/G-wAC	ENCLOSURE	SF	EG	2	0.30	0.57	0.25	X
Air Sealing / Envelope MH/CZ16/E-wAC	ENCLOSURE	MH	E	16	0.32	0.57	0.28	X
Air Sealing / Envelope MH/CZ6/G-wAC	ENCLOSURE	MH	EG	6	0.28	0.57	0.23	X
Air Sealing / Envelope MH/CZ6/G-wAC	ENCLOSURE	MH	EG	6	0.28	0.57	0.23	X
A/C Tune-up- Central w/CZ6 w/SF	HVAC	SF	E	6	0.59	0.57	0.49	X
New AC TIME DELAY SF/CZ4	HVAC	SF	E	4	0.65	0.56	0.56	X
Air Sealing / Envelope MH/CZ4/G-wAC	ENCLOSURE	MH	EG	4	0.28	0.54	0.24	X
Air Sealing / Envelope MH/CZ3/G-wAC	ENCLOSURE	MH	EG	3	0.27	0.53	0.23	X
A/C Tune-up- Central w/CZ4 w/MH	HVAC	MH	E	4	0.61	0.53	0.52	X
Air Sealing / Envelope SF/CZ6/G-wAC	ENCLOSURE	SF	EG	6	0.27	0.53	0.22	X
Air Sealing / Envelope SF/CZ6/G-wAC	ENCLOSURE	SF	EG	6	0.27	0.53	0.22	X
New AC TIME DELAY MH/CZ1	HVAC	MH	E	1	0.89	0.53	0.51	X
Air Sealing / Envelope MF/CZ11/G-wAC	ENCLOSURE	MF	EG	11	0.30	0.52	0.26	X
Air Sealing / Envelope MH/CZ11/E-wAC	ENCLOSURE	MH	E	11	0.30	0.51	0.26	X
Air Sealing / Envelope SF/CZ4/G-wAC	ENCLOSURE	SF	EG	4	0.27	0.50	0.22	X
Air Sealing / Envelope MF/CZ11/E-wAC	ENCLOSURE	MF	E	11	0.29	0.49	0.25	X
A/C Tune-up- Central w/CZ16 w/MF	HVAC	MF	E	16	0.57	0.49	0.49	X
Air Sealing / Envelope MH/CZ3/G-noAC	ENCLOSURE	MH	G	3	0.25	0.48	0.20	X
Air Sealing / Envelope SF/CZ11/E-wAC	ENCLOSURE	SF	E	11	0.29	0.48	0.25	X
Air Sealing / Envelope SF/CZ3/G-wAC	ENCLOSURE	SF	EG	3	0.25	0.47	0.21	X
A/C Tune-up- Central w/CZ6 w/MF	HVAC	MF	E	6	0.51	0.47	0.43	X
Air Sealing / Envelope MF/CZ12/G-wAC	ENCLOSURE	MF	EG	12	0.29	0.46	0.25	X
Air Sealing / Envelope MH/CZ2/G-noAC	ENCLOSURE	MH	G	2	0.24	0.46	0.20	X
Air Sealing / Envelope MH/CZ12/E-wAC	ENCLOSURE	MH	E	12	0.29	0.46	0.25	X
Attic Insulation SF/CZ14/G-wAC	ENCLOSURE	SF	EG	14	0.50	0.44	0.43	X
Attic Insulation SF/CZ13/G-wAC	ENCLOSURE	SF	EG	13	0.51	0.44	0.43	X
Air Sealing / Envelope MF/CZ12/E-wAC	ENCLOSURE	MF	E	12	0.27	0.44	0.24	X
A/C Tune-up- Central w/CZ2 w/MH	HVAC	MH	E	2	0.53	0.43	0.45	X
Air Sealing / Envelope SF/CZ12/E-wAC	ENCLOSURE	SF	E	12	0.27	0.43	0.23	X
Air Sealing / Envelope MH/CZ11/G-noAC	ENCLOSURE	MH	G	11	0.22	0.43	0.18	X
A/C Tune-up- Central w/CZ2 w/SF	HVAC	SF	E	2	0.51	0.42	0.44	X
Air Sealing / Envelope MH/CZ16/G-noAC	ENCLOSURE	MH	G	16	0.21	0.41	0.18	X
Air Sealing / Envelope SF/CZ2/G-noAC	ENCLOSURE	SF	G	2	0.21	0.41	0.18	X
Attic Insulation SF/CZ16/G-wAC	ENCLOSURE	SF	EG	16	0.47	0.41	0.40	X
Air Sealing / Envelope MH/CZ5/G-noAC	ENCLOSURE	MH	G	5	0.20	0.41	0.17	X
Air Sealing / Envelope MH/CZ6/G-noAC	ENCLOSURE	MH	G	6	0.20	0.41	0.17	X

Attachment H.1

Energy Savings Assistance Program Cost-Effectiveness - Weather Sensitive Measures  
Pacific Gas and Electric Company

Measure	Measure Group	Type of Home	Electric or Gas	Climate Zone	Ratio of Benefits Over Costs*			
					Utility Cost Test	Modified Participant Test	Total Resource Cost Test	
Air Sealing / Envelope SF/CZ11/G-noAC	ENCLOSURE	SF	G	11	0.21	0.40	0.17	X
Air Sealing / Envelope SF/CZ3/G-noAC	ENCLOSURE	SF	G	3	0.20	0.38	0.16	X
Air Sealing / Envelope MH/CZ12/G-noAC	ENCLOSURE	MH	G	12	0.20	0.38	0.16	X
Air Sealing / Envelope SF/CZ16/G-noAC	ENCLOSURE	SF	G	16	0.20	0.38	0.16	X
Attic Insulation SF/CZ11/G-wAC	ENCLOSURE	SF	EG	11	0.45	0.38	0.38	X
Air Sealing / Envelope MH/CZ4/G-noAC	ENCLOSURE	MH	G	4	0.20	0.38	0.16	X
Air Sealing / Envelope SF/CZ6/G-noAC	ENCLOSURE	SF	G	6	0.19	0.37	0.15	X
Air Sealing / Envelope SF/CZ6/G-noAC	ENCLOSURE	SF	G	6	0.19	0.37	0.15	X
New AC TIME DELAY MF/CZ2	HVAC	MF	E	2	0.46	0.36	0.40	X
Attic Insulation MF/CZ14/G-wAC	ENCLOSURE	MF	EG	14	0.43	0.36	0.37	X
Attic Insulation MF/CZ13/G-wAC	ENCLOSURE	MF	EG	13	0.44	0.36	0.37	X
A/C Tune-up- Central w/C24 w/MF	HVAC	MF	E	4	0.44	0.36	0.38	X
Air Sealing / Envelope SF/CZ12/G-noAC	ENCLOSURE	SF	G	12	0.16	0.34	0.15	X
Air Sealing / Envelope MH/CZ14/G-noAC	ENCLOSURE	MH	G	14	0.17	0.34	0.15	X
Air Sealing / Envelope MH/CZ13/G-noAC	ENCLOSURE	MH	G	13	0.18	0.34	0.15	X
Air Sealing / Envelope SF/CZ4/G-noAC	ENCLOSURE	SF	G	4	0.18	0.34	0.15	X
Attic Insulation SF/CZ13/E-wAC	ENCLOSURE	SF	E	13	0.39	0.31	0.33	X
Attic Insulation SF/CZ14/E-wAC	ENCLOSURE	SF	E	14	0.38	0.31	0.33	X
Attic Insulation SF/CZ12/G-wAC	ENCLOSURE	SF	EG	12	0.39	0.31	0.33	X
Air Sealing / Envelope SF/CZ13/G-noAC	ENCLOSURE	SF	G	13	0.18	0.31	0.14	X
Air Sealing / Envelope SF/CZ14/G-noAC	ENCLOSURE	SF	G	14	0.16	0.31	0.14	X
Attic Insulation MF/CZ13/E-wAC	ENCLOSURE	MF	E	13	0.39	0.31	0.33	X
Attic Insulation MF/CZ14/E-wAC	ENCLOSURE	MF	E	14	0.39	0.31	0.33	X
A/C Tune-up- Central w/C22 w/MF	HVAC	MF	E	2	0.39	0.30	0.33	X
Attic Insulation SF/CZ1/G-wAC	ENCLOSURE	SF	EG	1	0.30	0.27	0.25	X
Attic Insulation SF/CZ1/G-noAC	ENCLOSURE	SF	G	1	0.31	0.26	0.26	X
Attic Insulation SF/CZ16/E-wAC	ENCLOSURE	SF	E	16	0.32	0.25	0.28	X
Attic Insulation MF/CZ12/G-wAC	ENCLOSURE	MF	EG	12	0.33	0.25	0.28	X
Attic Insulation MF/CZ11/G-wAC	ENCLOSURE	MF	EG	11	0.32	0.25	0.27	X
Attic Insulation SF/CZ2/G-wAC	ENCLOSURE	SF	EG	2	0.29	0.24	0.24	X
Air Sealing / Envelope MF/CZ8/G-wAC	ENCLOSURE	MF	EG	8	0.12	0.22	0.10	X
Air Sealing / Envelope MF/CZ6/G-wAC	ENCLOSURE	MF	EG	6	0.12	0.22	0.10	X
Air Sealing / Envelope MF/CZ4/G-wAC	ENCLOSURE	MF	EG	4	0.13	0.22	0.11	X
Attic Insulation SF/CZ11/E-wAC	ENCLOSURE	SF	E	11	0.29	0.21	0.25	X
Attic Insulation SF/CZ4/G-noAC	ENCLOSURE	SF	G	4	0.24	0.21	0.20	X
Attic Insulation SF/CZ5/G-noAC	ENCLOSURE	SF	G	5	0.24	0.21	0.20	X
Attic Insulation SF/CZ6/G-noAC	ENCLOSURE	SF	G	6	0.24	0.21	0.20	X
New AC TIME DELAY SF/CZ3	HVAC	SF	E	3	0.28	0.20	0.24	X
Attic Insulation SF/CZ3/G-wAC	ENCLOSURE	SF	EG	3	0.24	0.20	0.21	X
Evap Coolers R&R SF/CZ2	HVAC	SF	E	2	0.27	0.20	0.23	X
Evap Coolers R&R SF/CZ3	HVAC	SF	E	3	0.27	0.20	0.23	X
Evap Coolers R&R SF/CZ4	HVAC	SF	E	4	0.26	0.20	0.22	X
Evap Coolers R&R SF/CZ1	HVAC	SF	E	1	0.25	0.20	0.22	X
Attic Insulation MF/CZ12/E-wAC	ENCLOSURE	MF	E	12	0.27	0.19	0.24	X
Attic Insulation MF/CZ11/E-wAC	ENCLOSURE	MF	E	11	0.26	0.19	0.23	X
Air Sealing / Envelope MF/CZ4/E-wAC	ENCLOSURE	MF	E	4	0.12	0.19	0.10	X
Air Sealing / Envelope MF/CZ5/E-wAC	ENCLOSURE	MF	E	5	0.11	0.19	0.09	X
Air Sealing / Envelope MF/CZ6/E-wAC	ENCLOSURE	MF	E	6	0.11	0.19	0.09	X
Air Sealing / Envelope MF/CZ2/G-wAC	ENCLOSURE	MF	EG	2	0.12	0.19	0.10	X
Evap Coolers R&R MH/CZ2	HVAC	MH	E	2	0.26	0.19	0.22	X
Evap Coolers R&R MH/CZ3	HVAC	MH	E	3	0.26	0.19	0.22	X
Evap Coolers R&R MH/CZ4	HVAC	MH	E	4	0.25	0.19	0.21	X
Evap Coolers R&R MH/CZ16	HVAC	MH	E	16	0.25	0.19	0.22	X
Attic Insulation SF/CZ12/E-wAC	ENCLOSURE	SF	E	12	0.25	0.17	0.22	X
Attic Insulation SF/CZ2/G-noAC	ENCLOSURE	SF	G	2	0.21	0.17	0.17	X
Air Sealing / Envelope SF/CZ4/E-wAC	ENCLOSURE	SF	E	4	0.10	0.17	0.09	X
Air Sealing / Envelope SF/CZ5/E-wAC	ENCLOSURE	SF	E	5	0.09	0.17	0.08	X
Air Sealing / Envelope SF/CZ6/E-wAC	ENCLOSURE	SF	E	6	0.09	0.17	0.08	X
Attic Insulation SF/CZ11/G-noAC	ENCLOSURE	SF	G	11	0.20	0.16	0.17	X
Air Sealing / Envelope MH/CZ5/E-wAC	ENCLOSURE	MH	E	5	0.09	0.16	0.08	X
Air Sealing / Envelope MH/CZ6/E-wAC	ENCLOSURE	MH	E	6	0.09	0.16	0.08	X
Air Sealing / Envelope MH/CZ4/E-wAC	ENCLOSURE	MH	E	4	0.10	0.16	0.09	X
Attic Insulation SF/CZ16/G-noAC	ENCLOSURE	SF	G	16	0.19	0.16	0.16	X
Air Sealing / Envelope SF/CZ2/E-wAC	ENCLOSURE	SF	E	2	0.10	0.16	0.09	X
Air Sealing / Envelope MH/CZ2/E-wAC	ENCLOSURE	MH	E	2	0.10	0.16	0.09	X
Air Sealing / Envelope MF/CZ2/E-wAC	ENCLOSURE	MF	E	2	0.10	0.16	0.09	X
Attic Insulation SF/CZ3/G-noAC	ENCLOSURE	SF	G	3	0.19	0.15	0.15	X
Attic Insulation MF/CZ4/G-wAC	ENCLOSURE	MF	EG	4	0.19	0.14	0.16	X
Attic Insulation MF/CZ5/G-wAC	ENCLOSURE	MF	EG	5	0.17	0.14	0.15	X
Attic Insulation SF/CZ12/G-noAC	ENCLOSURE	SF	G	12	0.17	0.14	0.14	X
Attic Insulation SF/CZ4/G-noAC	ENCLOSURE	SF	G	4	0.17	0.14	0.14	X
Attic Insulation SF/CZ5/G-noAC	ENCLOSURE	SF	G	5	0.16	0.14	0.14	X
Attic Insulation SF/CZ14/G-noAC	ENCLOSURE	SF	G	14	0.16	0.13	0.13	X
Attic Insulation SF/CZ13/G-noAC	ENCLOSURE	SF	G	13	0.16	0.13	0.13	X
Attic Insulation MF/CZ2/G-wAC	ENCLOSURE	MF	EG	2	0.17	0.13	0.14	X
Attic Insulation MF/CZ3/G-wAC	ENCLOSURE	MF	EG	3	0.16	0.12	0.14	X
Air Sealing / Envelope MF/CZ3/G-wAC	ENCLOSURE	MF	EG	3	0.07	0.12	0.06	X
Air Sealing / Envelope SF/CZ3/E-wAC	ENCLOSURE	SF	E	3	0.06	0.09	0.05	X
Air Sealing / Envelope MF/CZ5/E-wAC	ENCLOSURE	MF	E	5	0.06	0.09	0.05	X
Attic Insulation MF/CZ3/G-noAC	ENCLOSURE	MF	G	3	0.09	0.07	0.07	X
Attic Insulation MF/CZ3/G-noAC	ENCLOSURE	MF	G	3	0.08	0.05	0.06	X
Attic Insulation MF/CZ12/G-noAC	ENCLOSURE	MF	G	12	0.07	0.05	0.06	X
Attic Insulation MF/CZ11/G-noAC	ENCLOSURE	MF	G	11	0.07	0.05	0.06	X
Air Sealing / Envelope MH/CZ3/E-wAC	ENCLOSURE	MH	E	3	0.03	0.05	0.03	X
Air Sealing / Envelope MF/CZ1/G-wAC	ENCLOSURE	MF	EG	1	0.03	0.05	0.02	X
Attic Insulation MF/CZ5/G-noAC	ENCLOSURE	MF	G	5	0.06	0.05	0.05	X
Attic Insulation MF/CZ4/G-noAC	ENCLOSURE	MF	G	4	0.06	0.05	0.05	X
Attic Insulation MF/CZ13/G-noAC	ENCLOSURE	MF	G	13	0.06	0.05	0.05	X
Air Sealing / Envelope MF/CZ1/G-noAC	ENCLOSURE	MF	G	1	0.03	0.05	0.02	X
Air Sealing / Envelope MF/CZ16/G-noAC	ENCLOSURE	MF	G	16	0.02	0.03	0.01	X
Air Sealing / Envelope MF/CZ2/G-noAC	ENCLOSURE	MF	G	2	0.02	0.03	0.01	X
Air Sealing / Envelope MF/CZ11/G-noAC	ENCLOSURE	MF	G	11	0.02	0.03	0.01	X
Air Sealing / Envelope MF/CZ3/G-noAC	ENCLOSURE	MF	G	3	0.02	0.03	0.01	X
Air Sealing / Envelope MF/CZ5/G-noAC	ENCLOSURE	MF	G	5	0.01	0.03	0.01	X
Air Sealing / Envelope MF/CZ6/G-noAC	ENCLOSURE	MF	G	6	0.01	0.03	0.01	X
Air Sealing / Envelope MF/CZ12/G-noAC	ENCLOSURE	MF	G	12	0.01	0.03	0.01	X
Air Sealing / Envelope MF/CZ4/G-noAC	ENCLOSURE	MF	G	4	0.01	0.02	0.01	X
Air Sealing / Envelope MF/CZ14/G-noAC	ENCLOSURE	MF	G	14	0.01	0.02	0.01	X
Air Sealing / Envelope MF/CZ13/G-noAC	ENCLOSURE	MF	G	13	0.01	0.02	0.01	X
Air Sealing / Envelope MF/CZ1/E-wAC	ENCLOSURE	MF	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope MH/CZ1/E-wAC	ENCLOSURE	MH	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope SF/CZ1/E-wAC	ENCLOSURE	SF	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ1/E-noAC	ENCLOSURE	MF	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ11/E-noAC	ENCLOSURE	MF	E	11	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ12/E-noAC	ENCLOSURE	MF	E	12	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ13/E-noAC	ENCLOSURE	MF	E	13	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ14/E-noAC	ENCLOSURE	MF	E	14	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ16/E-noAC	ENCLOSURE	MF	E	16	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ2/E-noAC	ENCLOSURE	MF	E	2	0.00	0.00	0.00	X
Air Sealing / Envelope MF/CZ3/E-noAC	ENCLOSURE	MF	E	3	0.00	0.00	0.00	X

Attachment H.1

Energy Savings Assistance Program Cost-Effectiveness - Weather Sensitive Measures  
Pacific Gas and Electric Company

Measure	Measure Group	Ratio of Benefits Over Costs*						
		Type of Home	Electric or Gas	Climate Zone	Utility Cost Test	Modified Participant Test	Total Resource Cost Test	
Air Sealing / Envelope MFCZ4/E-noAC	ENCLOSURE	MF	E	4	0.00	0.00	0.00	X
Air Sealing / Envelope MFCZ5/E-noAC	ENCLOSURE	MF	E	5	0.00	0.00	0.00	X
Air Sealing / Envelope MFCZ6/E-noAC	ENCLOSURE	MF	E	6	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ1/E-noAC	ENCLOSURE	MH	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ11/E-noAC	ENCLOSURE	MH	E	11	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ12/E-noAC	ENCLOSURE	MH	E	12	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ13/E-noAC	ENCLOSURE	MH	E	13	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ14/E-noAC	ENCLOSURE	MH	E	14	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ16/E-noAC	ENCLOSURE	MH	E	16	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ22/E-noAC	ENCLOSURE	MH	E	2	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ3/E-noAC	ENCLOSURE	MH	E	3	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ4/E-noAC	ENCLOSURE	MH	E	4	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ5/E-noAC	ENCLOSURE	MH	E	5	0.00	0.00	0.00	X
Air Sealing / Envelope MHCZ6/E-noAC	ENCLOSURE	MH	E	6	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ1/E-noAC	ENCLOSURE	SF	E	1	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ11/E-noAC	ENCLOSURE	SF	E	11	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ12/E-noAC	ENCLOSURE	SF	E	12	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ13/E-noAC	ENCLOSURE	SF	E	13	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ14/E-noAC	ENCLOSURE	SF	E	14	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ16/E-noAC	ENCLOSURE	SF	E	16	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ2/E-noAC	ENCLOSURE	SF	E	2	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ3/E-noAC	ENCLOSURE	SF	E	3	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ4/E-noAC	ENCLOSURE	SF	E	4	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ5/E-noAC	ENCLOSURE	SF	E	5	0.00	0.00	0.00	X
Air Sealing / Envelope SFCZ6/E-noAC	ENCLOSURE	SF	E	6	0.00	0.00	0.00	X
Furnace Repair	MAINTENANCE	MF	E	System	0.00	0.00	0.00	X
Furnace Replacement	MAINTENANCE	MF	E	System	0.00	0.00	0.00	X

\* Based on 2012 program year.

Attachment H.2

Energy Savings Assistance Program Cost-Effectiveness - Non Weather Sensitive Measures  
Pacific Gas and Electric Company

Measure*	Measure Group	Ratio of Benefits Over Costs*						Approved
		Type of Home	Electric or Gas	Utility Cost Test	Modified Participant Test	Total Resource Cost Test		
		(SF, MH, MF)	(E, G)					
Water Heater Pipe Insulation SF/CZ-All/Gas	Domestic Hot Water	SH	G	2.41	35.79	1.95	X	
Water Heater Pipe Insulation MH/CZ-All/Gas	Domestic Hot Water	MH	E	2.02	12.83	1.83	X	
Faucet Aerator SF/CZ-All/Elec	Domestic Hot Water	MH	G	1.63	6.83	1.32	X	
Water Heater Blanket MH/CZ-All/Elec	Domestic Hot Water	SH	E	1.47	5.42	1.19	X	
Faucet Aerator MH/CZ-All/Elec	Domestic Hot Water	MF	G	1.47	5.36	1.19	X	
Water Heater Pipe Insulation MF/CZ-All/Gas	Domestic Hot Water	SH	G	1.45	5.10	1.18	X	
Faucet Aerator SF/CZ-All/Gas	Domestic Hot Water	MH	G	1.23	3.68	1.00	X	
Faucet Aerator MH/CZ-All/Gas	Domestic Hot Water	SH	E	1.19	3.44	0.96	X	
Faucet Aerator MF/CZ-All/Gas	Domestic Hot Water	MH	E	1.19	3.44	0.96	X	
New Low Flow Shower Head SF/CZ-All/Elec	Domestic Hot Water	SH	E	1.07	2.97	0.87	X	
New Microwave-replacing gas oven MF/CZ-All	Appliances	MH	E	1.13	2.77	0.85	X	
New Microwave-replacing gas oven SF/CZ-All	Appliances	MF	E	1.13	2.77	0.85	X	
New Microwave-replacing gas oven MH/CZ-All	Appliances	MH	E	1.10	2.77	0.85	X	
Water Heater Blanket SF/CZ-All/Elec	Domestic Hot Water	SH	E	0.96	2.59	0.69	X	
New Low Flow Shower Head MH/CZ-All/Elec	Domestic Hot Water	SH	G	0.97	2.54	0.76	X	
Torchiere - 55 W (D03-842 RES00AVT or 55) w/CZ w/SF	Lighting	MH	G	1.27	2.04	1.03	X	
New Microwave-replacing electric oven SF/CZ-All	Appliances	MH	G	1.25	1.95	1.03	X	
New Microwave-replacing electric oven MH/CZ-All	Appliances	SH	G	1.25	1.95	1.03	X	
New Microwave-replacing electric oven MF/CZ-All	Appliances	MF	E	1.25	1.95	1.03	X	
New Low Flow Shower Head MH/CZ-All/Gas	Domestic Hot Water	MH	E	0.80	1.85	0.65	X	
Water Heater Pipe Insulation MH/CZ-All/Elec	Domestic Hot Water	SH	E	0.75	1.74	0.61	X	
CFL - MF/CZ-All	Lighting	MF	G	1.15	1.72	0.94	X	
CFL - MH/CZ-All	Lighting	MH	G	1.05	1.46	0.86	X	
CFL - SF/CZ-All	Lighting	SH	E	1.04	1.43	0.85	X	
New Low Flow Shower Head SF/CZ-All/Gas	Domestic Hot Water	MH	E	0.65	1.39	0.53	X	
Water Heater Pipe Insulation SF/CZ-All/Elec	Domestic Hot Water	MF	G	0.64	1.12	0.43	X	
Water Heater Blanket MH/CZ-All/Gas	Domestic Hot Water	MF	E	0.61	1.09	0.44	X	
Refrigerator SF/CZ-All	Appliances	SH	E	0.83	1.03	0.57	X	
Refrigerator MH/CZ-All	Appliances	MH	E	0.82	1.03	0.57	X	
LiHEAP - Appliance SF/CZ-All	Appliances	SH	E	0.77	0.94	0.63	X	
LiHEAP - Appliance MH/CZ-All	Appliances	MH	E	0.77	0.93	0.62	X	
Exterior Hard wired CFL fixtures MF/CZ-All	Lighting	MF	E	0.69	0.86	0.56	X	
Water Heater Blanket SF/CZ-All/Gas	Domestic Hot Water	MF	E	0.43	0.82	0.34	X	
Refrigerator MF/CZ-All	Appliances	SH	G	0.59	0.82	0.58	X	
Exterior Hard wired CFL fixtures SF/CZ-All	Lighting	SH	E	0.67	0.81	0.54	X	
Exterior Hard wired CFL fixtures MH/CZ-All	Lighting	MH	E	0.65	0.78	0.52	X	
Interior Hard wired CFL fixtures MF/CZ-All	Lighting	MF	E	0.66	0.75	0.54	X	
LiHEAP - Appliance MF/CZ-All	Appliances	ALL	E	0.64	0.74	0.52	X	
Interior Hard wired CFL fixtures SF/CZ-All	Lighting	MH	E	0.63	0.71	0.51	X	
Interior Hard wired CFL fixtures MH/CZ-All	Lighting	SH	E	0.61	0.68	0.50	X	
Occupancy Sensor All/CZ-All	Lighting	MF	G	0.51	0.53	0.41	X	
Water Heater Blanket MF/CZ-All/Gas	Domestic Hot Water	MF	G	0.17	0.29	0.13	X	
New Low Flow Shower Head MF/CZ-All/Gas	Domestic Hot Water	MF	E	0.14	0.23	0.11	X	
Faucet Aerator MF/CZ-All/Elec	Domestic Hot Water	MF	E	0.00	0.00	0.00	X	
New Low Flow Shower Head MF/CZ-All/Elec	Domestic Hot Water	MF	E	0.00	0.00	0.00	X	
Water Heater Blanket MF/CZ-All/Elec	Domestic Hot Water	MF	E	0.00	0.00	0.00	X	
Water Heater Pipe Insulation MF/CZ-All/Elec	Domestic Hot Water	ALL	E	0.00	0.00	0.00	X	
Water Heater R&R	Domestic Hot Water	ALL	E	0.00	0.00	0.00	X	
*** Water heater R&R added back in owner occupied homes, consistent with D0811031								

\*Based on 2012 program year.