The Redistributional Impact of Non-Linear Electricity Pricing Severin Borenstein Web Appendix

Complete Tables for Pacific Gas & Electric, Southern California Edison and San Diego Gas & Electric

	Residential							
	Usage	Perc	entage o	of Reside	ential Usa	age	CARE/Non-CA	ARE Shares
	(million-kWh)	tier 1	tier 2	tier 3	tier 4	tier 5	% Usage	% customers
Non-CARE	24,312	57.7%	10.7%	15.5%	9.2%	6.8%	81.1%	79.2%
CARE	5,660	66.2%	10.2%	13.2%	6.7%	3.7%	18.9%	20.8%
	-						_	
	Percentag	e of Custo	mers on	Each Ti	er for Ma	rginal Co	onsumption	
		tier 1	tier 2	tier 3	tier 4	tier 5		
Non-CARE		38.4%	14.3%	24.1%	15.1%	8.2%		
CARE		47.6%	15.5%	21.5%	11.0%	4.5%		

Web Appendix 1: Complete Tables for Pacific Gas & Electric

NOTE: reported results drop household accounts with consumption of less than 1 kWh/day

Table 1: Distribution of PG&E Residential Customer Consumption Across Tariff Tiers

Tie	er% of	Standard	CARE	Tier	% of	Standard
	Baseline	Residential	Low-income		Baseline	Residential
	Quantity	Rate	Rate		Quantity	Rate
Ac	tual 2006 tariff (tin	ne-weighted aver	age in 2006)	Ben	chmark Five-Tier Ta	ariff with no CARE program
1	0-100%	\$0.1143	\$0.0832	1	0-100%	\$0.1024
2	100%-130%	\$0.1299	\$0.0956	2	100%-130%	\$0.1180
3	130%-200%	\$0.2178	\$0.0956	3	130%-200%	\$0.2059
4	200%-300%	\$0.2987	\$0.0956	4	200%-300%	\$0.2868
5	300%+	\$0.3394	\$0.0956	5	300%+	\$0.3275
Alt	ernative Flat-Rate	Tariff with CARE	program	Alte	rnative Flat-Rate Ta	ariff with no CARE program
	001	A A 4 A 4 A	#0.0074		00/	· · · · · ·
	0%+	\$0.1643	\$0.0874		0%+	\$0.1498
	0%+	\$0.1643	\$0.0874		0%+ 	\$0.1498
Alt	0%+ ernative Two-Tier	\$0.1643 ———— Tariff with CARE	\$0.0874 program	Alter	mative Two-Tier Ta	\$0.1498 riff with no CARE program
Alt 1	0%+ ernative Two-Tier ⁻ 0-100%	\$0.1643 	\$0.0874 program \$0.0824	Alter 1	rnative Two-Tier Ta 0-100%	\$0.1498 riff with no CARE program \$0.1395

Table 2: 2006 Pacific Gas & Electric Retail Electricity Rates

OLS Regression Dependent Variable: Household Daily Average Consumption (kWh/day)

		Robust
	Coefficient	Std Error
\$0-\$20k bracket	14.798	0.547
\$20k-\$40k bracket	17.097	0.592
\$40k-\$60k bracket	19.589	0.774
\$60k-\$100k bracket	20.929	0.589
>\$100k bracket	23.362	0.623
R-squared	0.06	
F(4,7666)	32.39	
Observations	7671	

(R-squared and F-test reported for regression with constant term)

Table 4: OLS Regression of consumption on income brackets in PG&E territory

			Average		Average	•	Ch	nange from Flat t	o 5-tier	Aggregate
	Income	Share of	Daily Use	e An	nualized	Bill	Dollar		Percent	Annual
	Range	Customers	(kWh)	Flat	2-tier	5-tier	Chg	95% conf intvl	Change 95% conf intvl	Chg (\$M)
median	\$0-\$20k	2.8%	14.75	\$806	\$790	\$718	-\$88		-10.9%	-\$11
household	\$20k-\$40k	24.4%	18.10	\$989	\$980	\$932	-\$57		-5.8%	-\$59
income	\$40k-\$60k	31.8%	18.52	\$1,012	\$1,008	\$985	-\$27		-2.7%	-\$37
in CBG	\$60k-\$100k	33.4%	19.77	\$1,081	\$1,085	\$1,100	\$19		1.8%	\$27
	>\$100k	7.5%	25.45	\$1,391	\$1,424	\$1,641	\$250		18.0%	\$80
random	\$0-\$20k	17.0%	17.69	\$967	\$958	\$916	-\$51		-5.3%	-\$37
rank	\$20k-\$40k	20.5%	18.49	\$1,011	\$1,006	\$979	-\$32		-3.2%	-\$28
method	\$40k-\$60k	18.0%	19.08	\$1,043	\$1,042	\$1,032	-\$10		-1.0%	-\$8
	\$60k-\$100k	23.6%	19.68	\$1,075	\$1,078	\$1,084	\$8		0.8%	\$8
	>\$100k	20.9%	20.92	\$1,143	\$1,153	\$1,216	\$73		6.4%	\$65
w eighted	\$0-\$20k	17.0%	14.77	\$807	\$791	\$710	-\$97	[-\$105, -\$87]	-12.1% [-13.7%, -10.2%]	-\$70
rank	\$20k-\$40k	20.5%	17.67	\$966	\$958	\$910	-\$56	[-\$66, -\$45]	-5.8% [-7.0%, -4.6%]	-\$49
method	\$40k-\$60k	18.0%	19.18	\$1,048	\$1,047	\$1,034	-\$15	[-\$21, -\$11]	-1.4% [-1.0%, -2.0%]	-\$11
	\$60k-\$100k	23.6%	19.96	\$1,091	\$1,094	\$1,102	\$12	[\$11, \$12]	1.1% [1.0%, 1.1%]	\$12
	>\$100k	20.9%	23.70	\$1,295	\$1,315	\$1,429	\$134	[\$112, \$155]	10.3% [9.0%, 11.5%]	\$119
usage	\$0-\$20k	17.0%	8.88	\$485	\$461	\$354	-\$132		-27.1%	-\$95
rank	\$20k-\$40k	20.5%	14.37	\$785	\$766	\$661	-\$124		-15.8%	-\$108
method	\$40k-\$60k	18.0%	16.15	\$883	\$865	\$768	-\$115		-13.0%	-\$88
	\$60k-\$100k	23.6%	20.67	\$1,130	\$1,124	\$1,042	-\$87		-7.7%	-\$88
	>\$100k	20.9%	33.52	\$1,832	\$1,893	\$2,259	\$427		23.3%	\$380

Excludes bills with daily consumption < 1kWh/day

Includes all CARE and non-CARE customers, all on no-CARE-program rates from table 2

Distribution of w * for w eighted rank method

Point Estimate	0.21
Mean of bootstrap	0.21
Median of bootstrap	0.21
95% conf interval	[0.15,0.27]

Table 3/5: PG&E Average Bill By Income Bracket Under Alternative Flat-Rate Tariffs Using Median Income, Random-Rank, Usage-Rank and Weighted-Rank Methods

	Share	Aver No	age An i -CARE	nualized	Bill w itl	h CARE		Monet from No-CARE	tary Bill C No-CARE/ w/CARE	Chage / Flat w/CARE	Percentaç from N No-CAREA	je Bill C o-CARE	hage /Flat //CARE
Income	on	Flat	2-tier	5-tier	Flat	2-tier	5-tier	5-tier	Flat	5-tier	5-tier	Flat	5-tier
Range	CARE	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff
\$0-\$20k	64.9%	\$807	\$791	\$710	\$593	\$583	\$551	-\$97	-\$214	-\$256	-12%	-27%	-32%
\$20k-\$40k	38.6%	\$966	\$958	\$910	\$864	\$858	\$824	-\$56	-\$102	-\$141	-6%	-11%	-15%
\$40k-\$60k	9.1%	\$1,048	\$1,047	\$1,034	\$1,092	\$1,089	\$1,062	-\$15	\$44	\$14	-1%	4%	1%
\$60k-\$100k	1.0%	\$1,091	\$1,094	\$1,102	\$1,188	\$1,188	\$1,179	\$12	\$97	\$88	1%	9%	8%
>\$100k	0.0%	\$1,295	\$1,315	\$1,429	\$1,421	\$1,438	\$1,531	\$134	\$125	\$236	10%	10%	18%

All results are from weighted rank method Excludes bills with daily consumption < 1kWh/day Includes all CARE and non-CARE customers

Table 7: PG&E Estimated Average Annual Bills With and Without IBP and CARE

MC=0.0998

	Househ	old Con	sumer S	Surplus
Share of	From Sv	witch to	5-tier ta	ariff
Customers	ε=0	ε=-0.1	ε = -0.2	ε = -0.3
17.0%	\$97	\$78	\$58	\$36
20.5%	\$56	\$31	\$4	-\$26
18.0%	\$15	-\$15	-\$47	-\$82
23.6%	-\$12	-\$43	-\$78	-\$116
20.9%	-\$134	-\$177	-\$223	-\$275
	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9%	Househ Share of Customers From St ε=0 17.0% \$97 20.5% \$56 18.0% \$15 23.6% -\$12 20.9% -\$134	Household Con Share of Customers From Switch to ε=0 ε=-0.1 17.0% \$97 \$78 20.5% \$56 \$31 18.0% \$15 -\$15 23.6% -\$12 -\$43 20.9% -\$134 -\$177	Household Consumer SShare of CustomersFrom Sw itch to 5-tier ta $\varepsilon=0$ 17.0%\$97\$78\$5820.5%\$56\$31\$418.0%\$15-\$15-\$4723.6%-\$12-\$43-\$7820.9%-\$134-\$177-\$223

Change in Annual Average

Aggregate Increase in DWL from IBP (\$Myr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.1498	Change Houset	in Ann	ual Ave	rage Surplus	
Income	Share of	From S	witch to	5-tier ta	ariff
Range	Customers	e=0	ε = -0.1	ε=-0.2	ε = -0.3
\$0-\$20k	17.0%	\$97	\$87	\$77	\$66
\$20k-\$40k	20.5%	\$56	\$42	\$26	\$11
\$40k-\$60k	18.0%	\$15	-\$3	-\$22	-\$41
\$60k-\$100k	23.6%	-\$12	-\$31	-\$52	-\$74
>\$100k	20.9%	-\$134	-\$162	-\$192	-\$223

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.1998		Change Househ	in Ann Iold Con	ual Ave Isumer S	rage Surplus
Income	Share of	From S	w itch to	5-tier ta	ariff
Range	Customers	ε=0	ε =-0.1	ε =-0.2	ε=-0.3
\$0-\$20k	17.0%	\$97	\$95	\$93	\$90
\$20k-\$40k	20.5%	\$56	\$51	\$46	\$40
\$40k-\$60k	18.0%	\$15	\$7	\$0	-\$8
\$60k-\$100k	23.6%	-\$12	-\$20	-\$29	-\$39
>\$100k	20.9%	-\$134	-\$149	-\$165	-\$181

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

Change in Aggregate Annual Consumer Surplus (\$M/yr) From Sw itch to 5-tier tariff						
ε=0	ε = -0.1	ε = -0.2	ε = -0.3			
\$70	\$57	\$42	\$26			
\$49	\$18	-\$11	-\$42			
\$11	-\$11	-\$36	-\$63			
-\$12	-\$44	-\$79	-\$117			
-\$119	-\$157	-\$199	-\$245			
\$0	\$138	\$282	\$440			
0.00	1.85	9.04	-27.78			
\$0.1498	\$0.1481	\$0.1464	\$0.1445			

Change in Aggregate Annual Consumer Surplus (\$M/yr) From Sw itch to 5-tier tariff

£=-0.3	ε=-0.2	ε=-0.1	0=3
\$48	\$56	\$63	\$70
\$9	\$23	\$36	\$49
-\$32	-\$17	-\$2	\$11
-\$74	-\$53	-\$32	-\$12
-\$199	-\$171	-\$145	-\$119
\$248	\$162	\$80	\$0
4.36	2.07	0.80	0.00
\$0.1498	\$0.1498	\$0.1498	\$0.1498

Change in Aggregate

Annual Consumer Surplus (\$M/yr) From Sw itch to 5-tier tariff

ε=0	ε = -0.1	ε = -0.2	ε = -0.3
\$70	\$69	\$67	\$65
\$49	\$45	\$40	\$35
\$11	\$6	\$0	-\$6
-\$12	-\$21	-\$30	-\$39
-\$119	-\$133	-\$147	-\$161
\$0	\$34	\$69	\$106
0.00	0.30	0.64	1.05
\$0.1498	\$0.1511	\$0.1526	\$0.1540

\$0.1498 \$0.1525 \$0.1552 \$0.1577

MC=0.2498	Change Househ	in Ann old Con	ual Ave Isumer S	rage Surplus	Change in Aggregate Annual Consumer Surplus (\$M/vr)				
Income	Share of	From S	witch to	5-tier ta	ariff	From Sw itch to 5-tier tariff			
Range	Customers	0=3	ε = -0.1	ε = −0.2	ε = −0.3	0=3	ε = -0.1	ε = −0.2	£=-0.3
\$0-\$20k	17.0%	\$97	\$103	\$107	\$110	\$70	\$74	\$78	\$80
\$20k-\$40k	20.5%	\$56	\$60	\$64	\$66	\$49	\$53	\$55	\$57
\$40k-\$60k	18.0%	\$15	\$17	\$19	\$20	\$11	\$13	\$15	\$15
\$60k-\$100k	23.6%	-\$12	-\$10	-\$9	-\$9	-\$12	-\$10	-\$9	-\$10
>\$100k	20.9%	-\$134	-\$137	-\$140	-\$145	-\$119	-\$122	-\$125	-\$129
Aggregate Inc	rease in DWL f	rom IBP (\$N	√/vr)			\$0	-\$9	-\$13	-\$14
Ratio of DWL	to transfers to t	twolowest	income	e bracke	ts	0.00	-0.07	-0.10	-0.10

Ratio of DWL to transfers to two low est income brackets Flat-rate Price

Table 6: PG&E Change in Consumer Surplus Switching from Flat-rate to 5-tier Tariff Under Alternative Demand Elasticities (Weighted Ranking Method)

MC=0.0.998	3	Change in Annual Average Household Consumer Surplus	Change in Annual Co	Aggrega	te Surplus (\$	M∕vr)
Income	Share of	From adding CARE program	From addi	ng CARE	program	,.,.,
Range	Customers	$\epsilon=0$ $\epsilon=-0.1$ $\epsilon=-0.2$ $\epsilon=-0.3$	ε=0	ε=-0.1	ε=-0.2	e=-0.3
0			-		-	-
\$0-\$20k	17.0%	\$214 \$220 \$226 \$233	\$155	\$159	\$164	\$169
\$20k-\$40k	20.5%	\$101 \$104 \$107 \$110	\$89	\$91	\$94	\$96
\$40k-\$60k	18.0%	-\$44 -\$47 -\$50 -\$54	-\$34	-\$36	-\$38	-\$41
\$60k-\$100k	23.6%	-\$97 -\$103 -\$109 -\$116	-\$98	-\$104	-\$110	-\$118
>\$100k	20.9%	-\$125 -\$134 -\$144 -\$155	-\$112	-\$119	-\$128	-\$138
Aggregate Inc Ratio of DWL t Flat-rate Price Flat-rate Price	rease in DWL f to transfers to - Standard Rea - CARE partici	rom CARE (\$M/yr) tw o low est income brackets sidential pants	\$0 0.00 \$0.1643 \$0.0874	\$9 0.03 \$0.1630 \$0.0867	\$19 0.07 \$0.1617 \$0.0860	\$31 0.12 \$0.1602 \$0.0852
MC=0.1498		Change in Annual Average	Change in	Aggrega	te	
		Household Consumer Surplus	Annual Co	onsumer S	Surplus (\$	M∕yr)
Income	Share of	From adding CARE program	From addi	ng CARE	program	
Range	Customers	$\epsilon=0$ $\epsilon=-0.1$ $\epsilon=-0.2$ $\epsilon=-0.3$	0=3	ε=-0.1	ε=-0.2	ε=-0.3
\$0-\$20k	17.0%	\$214 \$221 \$229 \$238	\$155	\$160	\$166	\$172
\$20k-\$40k	20.5%	\$101 \$104 \$108 \$111	\$89	\$91	\$94	\$97
\$40k-\$60k	18.0%	-\$44 -\$48 -\$53 -\$57	-\$34	-\$37	-\$40	-\$44
\$60k-\$100k	23.6%	-\$97 -\$105 -\$113 -\$122	-90 -\$98	-\$106	-\$11Δ	-\$123
>\$100k	20.9%	-\$125 -\$136 -\$149 -\$162	-\$112	-\$122	-\$133	-\$145
+ () 0011	2010/0	Q.20 Q.00 Q.10 Q.02	\$112	* ·	\$ 100	\$ 1.10
Aggregate Inc	rease in DWL f	rom CARE (\$M/yr)	\$0	\$13	\$27	\$42
Ratio of DWL t	o transfers to	tw o low est income brackets	0.00	0.05	0.10	0.16
Flat-rate Price	 Standard Res 	sidential	\$0.1643	\$0.1648	\$0.1655	\$0.1663
Flat-rate Price	- CARE partici	pants	\$0.0874	\$0.0877	\$0.0881	\$0.0885
MC=0 1998		Change in Appual Average	Change in	Anareaa	te	
MC=0.1998		Change in Annual Average Household Consumer Surplus	Change in Annual Co	Aggrega	te Surplus (\$	M/v/r)
MC=0.1998	Share of	Change in Annual Average Household Consumer Surplus From adding CARE program	Change in Annual Co From addi	Aggrega	te Surplus (\$ program	M∕yr)
MC=0.1998 Income Range	Share of Customers	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$	Change in Annual Co From addi ε=0	Aggrega onsumer S ng CARE ε=-0.1	te Surplus (\$ program ε=-0.2	M⁄yr) ε=-0.3
MC=0.1998 Income Range	Share of Customers	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \varepsilon=-0.1 \varepsilon=-0.2 \varepsilon=-0.3$	Change in Annual Co From addi ɛ=0	Aggrega onsumer S ng CARE ɛ=-0.1	te Surplus (\$ program <i>ε</i> =-0.2	₩yr) ε=-0.3
MC=0.1998 Income Range \$0-\$20k	Share of Customers 17.0%	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \varepsilon=-0.1 \varepsilon=-0.2 \varepsilon=-0.3$ \$214 \$223 \$232 \$241	Change in Annual Co From addi €=0 \$155	Aggrega onsumer S ng CARE ε=-0.1 \$161	te Surplus (\$ program ε=-0.2 \$168	₩yr) ε=-0.3 \$175
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k	Share of Customers 17.0% 20.5%	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \varepsilon=-0.1 \varepsilon=-0.2 \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112	Change in Annual Cc From addi ∉=0 \$155 \$89	Aggrega onsumer S ng CARE e=-0.1 \$161 \$91	te Surplus (\$ program ε=-0.2 \$168 \$94	Wyr) €=-0.3 \$175 \$98
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k	Share of Customers 17.0% 20.5% 18.0%	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61	Change in Annual Cc From addi ε=0 \$155 \$89 -\$34	Aggrega onsumer \$ ng CARE ε=-0.1 \$161 \$91 -\$38	te Surplus (\$ program ε=-0.2 \$168 \$94 -\$42	Wyr) €=-0.3 \$175 \$98 -\$46
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k	Share of Customers 17.0% 20.5% 18.0% 23.6%	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127	Change in Annual Cc From addi ε=0 \$155 \$89 -\$34 -\$34 -\$98	Aggrega onsumer S ng CARE e=-0.1 \$161 \$91 -\$38 -\$108	te Surplus (\$ program e=-0.2 \$168 \$94 -\$42 -\$117	M⁄yr) €=-0.3 \$175 \$98 -\$46 -\$128
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9%	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168	Change in Annual Cc From addi ∉=0 \$155 \$89 -\$34 -\$98 -\$112	Aggrega onsumer S ng CARE ε=-0.1 \$161 \$91 -\$38 -\$108 -\$124	te Surplus (\$ program ɛ=-0.2 \$168 \$94 -\$42 -\$42 -\$117 -\$136	Wyr) €=-0.3 \$175 \$98 -\$46 -\$128 -\$150
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL f	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168	Change in Annual Co From addi <i>ε</i> =0 \$155 \$89 -\$34 -\$98 -\$112 \$0	Aggrega onsumer S ng CARE e=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16	te Surplus (\$ program æ-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33	Wyr) €=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL f	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168 From CARE (\$Myr) two low est income brackets	Change in Annual Cc From addi ε=0 \$155 \$89 -\$34 -\$98 -\$112 \$0 0.00	Aggrega onsumer S ng CARE ε=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16 0.06	te Surplus (\$ program e=-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33 0.13	Wyr) €=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51 0 19
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL for transfers to - Standard Re	Change in Annual Average Household Consumer Surplus From adding CARE program e=0 e=-0.1 e=-0.2 e=-0.3 \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168 From CARE (\$Wyr) tw o low est income brackets sidential	Change in Annual Cc From addi ε=0 \$155 \$89 -\$34 -\$98 -\$112 \$0 0.00 \$0.1643	Aggrega onsumer S ng CARE ε=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16 0.06 \$0.1666	te Surplus (\$ program e=-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33 0.13 \$0.1690	Wyr) €=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51 0.19 \$0.1714
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MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price Flat-rate Price Flat-rate Price Range MC=0.2498 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo transfers to - Standard Rea - CARE particip Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$224 \$234 \$244 \$101 \$105 \$109 \$112 -\$44 -\$51 -\$57 -\$63 -\$97 -\$108 -\$119 -\$130 -\$125 -\$141 -\$157 -\$173 From CARE (\$M'yr) tw o low est income brackets	Change in Annual Co From addi ε=0 \$155 \$89 -\$34 -\$98 -\$112 \$0 0.00 \$0.1643 \$0.0874 Change in Annual Co From addi ε=0 \$155 \$89 -\$34 -\$12 \$0 0.00	Aggrega onsumer S ng CARE 2=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16 0.06 \$0.1666 \$0.0886 Aggrega onsumer S ng CARE 2=-0.1 \$162 \$92 -\$39 -\$109 -\$126 \$20 0.08	te Surplus (\$ program &=-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33 0.13 \$0.1690 \$0.0899 te Surplus (\$ program &=-0.2 \$170 \$95 -\$44 -\$120 -\$140 \$39 0.15	 Myr) ε=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51 0.19 \$0.1714 \$0.0912 Myr) ε=-0.3 \$177 \$98 -\$49 -\$132 -\$154 \$59 0.21
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price Flat-rate Price Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo transfers to - Standard Rease - CARE particit Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo transfers to - Standard Rease - Standard Rease - Standard Rease	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168 From CARE (\$M/yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$224 \$234 \$244 \$101 \$105 \$109 \$112 -\$44 -\$51 -\$57 -\$63 -\$97 -\$108 -\$119 -\$130 -\$125 -\$141 -\$157 -\$173 From CARE (\$M/yr) tw o low est income brackets sidential	Change in Annual Cc From addi €=0 \$155 \$89 -\$34 -\$112 \$0 0.00 \$0.1643 \$0.0874 Change in Annual Cc From addi €=0 \$155 \$89 -\$34 -\$112 \$0 0.00 \$0.1643	Aggrega onsumer S ng CARE 2=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16 0.06 \$0.1666 \$0.0886 Aggrega onsumer S ng CARE 2=-0.1 \$162 \$92 -\$39 -\$109 -\$126 \$20 0.08 \$0.1682	te Surplus (\$ program &=-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33 0.13 \$0.1690 \$0.0899 te Surplus (\$ program &=-0.2 \$170 \$95 -\$44 -\$120 -\$140 \$39 0.15 \$0.1720	 Myr) ε=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51 0.19 \$0.1714 \$0.0912 Myr) ε=-0.3 \$177 \$98 -\$49 -\$132 -\$154 \$59 0.21 \$0.1757
MC=0.1998 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price Flat-rate Price MC=0.2498 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL t Flat-rate Price Flat-rate Price	Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo o transfers to - Standard Rea - CARE particip Share of Customers 17.0% 20.5% 18.0% 23.6% 20.9% rease in DWL fo o transfers to - Standard Rea - CARE particip	Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$223 \$232 \$241 \$101 \$105 \$108 \$112 -\$44 -\$49 -\$55 -\$61 -\$97 -\$107 -\$116 -\$127 -\$125 -\$139 -\$153 -\$168 From CARE (\$M/yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon = 0 \varepsilon = -0.1 \varepsilon = -0.2 \varepsilon = -0.3$ \$214 \$224 \$234 \$244 \$101 \$105 \$109 \$112 -\$44 -\$51 -\$57 -\$63 -\$97 -\$108 -\$119 -\$130 -\$125 -\$141 -\$157 -\$173 From CARE (\$M/yr) tw o low est income brackets sidential	Change in Annual Cc From addi $\varepsilon=0$ \$155 \$89 -\$34 -\$98 -\$112 \$0 0.00 \$0.1643 \$0.0874 Change in Annual Cc From addi $\varepsilon=0$ \$155 \$89 -\$34 -\$112 \$0 0.00 \$0.1643 \$0.0074	Aggrega onsumer S ng CARE e=-0.1 \$161 \$91 -\$38 -\$108 -\$124 \$16 0.06 \$0.1666 \$0.0886 Aggrega onsumer S ng CARE e=-0.1 \$162 \$92 -\$39 -\$109 -\$126 \$20 0.08 \$0.1682 \$0.0895	te Surplus (\$ program ε=-0.2 \$168 \$94 -\$42 -\$117 -\$136 \$33 0.13 \$0.1690 \$0.0899 te Surplus (\$ program ε=-0.2 \$170 \$95 -\$44 -\$120 -\$140 \$39 0.15 \$0.1720 \$0.0915	 Wyr) ε=-0.3 \$175 \$98 -\$46 -\$128 -\$150 \$51 0.19 \$0.1714 \$0.0912 Wyr) ε=-0.3 \$177 \$98 -\$49 -\$132 -\$154 \$59 0.21 \$0.1757 \$0.0935

 Table 8: PG&E Change in Consumer Surplus Switching from No-CARE to w/CARE

 With Flat-rate Tariff Under Alternative Demand Elasticities

 (Weighted Ranking Method)

	Residential								
	Usage	Percentage of Residential Usage					CARE/Non-CARE Shares		
	(million-kWh)	tier 1	tier 2	tier 3	tier 4	tier 5	% Usage %	customers	
Non-CARE	6,255	55.5%	10.3%	15.3%	10.0%	8.9%	87.0%	82.4%	
CARE	931	73.6%	9.1%	10.4%	4.7%	2.2%	13.0%	17.6%	
	-						_		
	Dereentee	a of Custo			or for M	arainal Ca			
	Percentag	e of Custo	mers on	Each II	er for ivia	arginai Co	nsumption		
		tier 1	tier 2	tier 3	tier 4	tier 5			
Non-CARE		38.9%	13.9%	22.6%	14.5%	10.2%			
CARE		59.2%	14.7%	16.8%	6.8%	2.5%			

Web Appendix 2: Complete Tables for San Diego Gas & Electric

NOTE: reported results drop household accounts with consumption of less than 1 kWh/day

Table 1: Distribution of SDG&E Residential Customer Consumption Across Tariff Tiers

Tie	r % of	Standard	CARE	Tier	% of	Standard
	Baseline	Residential	Low-income		Baseline	Residential
	Quantity	Rate	Rate		Quantity	Rate
Ac	tual 2006 tariff (tin	ne-weighted ave	rage in 2006)	Ben	chmark Five-Tier Ta	ariff with no CARE program
1	0-100%	\$0.1287	\$0.1026	1	0-100%	\$0.1245
2	100%-130%	\$0.1488	\$0.1187	2	100%-130%	\$0.1446
3	130%-200%	\$0.2312	\$0.1758	3	130%-200%	\$0.2270
4	200%-300%	\$0.2401	\$0.1764	4	200%-300%	\$0.2359
5	300%+	\$0.2571	\$0.1776	5	300%+	\$0.2529
Alt	ernative Flat-Rate	Tariff with CARE	E program	Alte	rnative Flat-Rate Ta	ariff with no CARE program
	0%+	\$0.1690	\$0.1168		0%+	\$0.1622
A 14				Alto		
ΑП				Alte		
	0-100%	\$0.1565	30.1115	1	0-100%	30.1508
1	0-10078	\$ 01.000		-		· · · · · · · · · · · · · · · · · · ·

Table 2: 2006 SDG&E Retail Electricity Rates

OLS Regression

Dependent Variable: Household Daily Average Consumption (kWh/day)

		Robust
	Coefficient	Std Error
\$0-\$20k bracket	9.404	0.628
\$20k-\$40k bracket	12.557	0.700
\$40k-\$60k bracket	13.263	0.682
\$60k-\$100k bracket	17.071	0.800
>\$100k bracket	27.617	2.361
R-squared	0.19	
F(4,2028)	24.38	
Observations	2033	

(R-squared and F-test reported for regression with constant term)

Table 4: OLS Regression of consumption on income brackets in SDG&E territory

			Average		Average	•	Ch	ange from Flat t	o 5-tier	Aggregate
	Income	Share of	Daily Use	e An	nualized	Bill	Dollar		Percent	Annual
	Range	Customers	(kWh)	Flat	2-tier	5-tier	Chg	95% conf intvl	Change 95% conf intvl	Chg (\$M)
median	\$0-\$20k	1.9%	10.46	\$620	\$595	\$526	-\$94		-15.1%	-\$2
household	\$20k-\$40k	28.8%	12.31	\$729	\$711	\$658	-\$71		-9.7%	-\$24
income	\$40k-\$60k	31.2%	15.95	\$945	\$938	\$912	-\$33		-3.5%	-\$12
in CBG	\$60k-\$100k	31.5%	20.48	\$1,213	\$1,225	\$1,259	\$46		3.8%	\$17
	>\$100k	6.7%	28.01	\$1,659	\$1,717	\$1,928	\$269		16.2%	\$21
random	\$0-\$20k	16.4%	13.65	\$808	\$794	\$753	-\$55		-6.8%	-\$10
rank	\$20k-\$40k	22.4%	15.00	\$888	\$879	\$852	-\$36		-4.1%	-\$9
method	\$40k-\$60k	18.9%	16.57	\$981	\$979	\$968	-\$13		-1.3%	-\$3
	\$60k-\$100k	23.8%	18.27	\$1,082	\$1,086	\$1,096	\$14		1.3%	\$4
	>\$100k	18.5%	21.36	\$1,265	\$1,285	\$1,353	\$88		7.0%	\$19
w eighted	\$0-\$20k	16.4%	9.10	\$539	\$515	\$450	-\$89	[-\$90, -\$85]	-16.7% [-20.1%, 13.9%]	-\$17
rank	\$20k-\$40k	22.4%	12.62	\$747	\$728	\$668	-\$79	[-\$93, -\$60]	-10.7% [-13.9%, -7.3%]	-\$21
method	\$40k-\$60k	18.9%	15.68	\$928	\$919	\$886	-\$43	[-\$18, -\$86]	-4.7% [-1.9%, -10.4%]	-\$9
	\$60k-\$100k	23.8%	19.19	\$1,136	\$1,141	\$1,145	\$9	[\$-9. \$14]	0.8% [-0.7%, 1.3%]	\$2
	>\$100k	18.5%	28.01	\$1,659	\$1,707	\$1,866	\$207	[\$149, \$291]	12.4% [10.0%, 15.4%]	\$44
usage	\$0-\$20k	16.4%	6.49	\$384	\$360	\$301	-\$83		-21.6%	-\$16
rank	\$20k-\$40k	22.4%	10.63	\$630	\$604	\$530	-\$100		-15.9%	-\$26
method	\$40k-\$60k	18.9%	13.44	\$796	\$770	\$688	-\$108		-13.5%	-\$23
	\$60k-\$100k	23.8%	19.18	\$1,136	\$1,132	\$1,089	-\$47		-4.1%	-\$13
	>\$100k	18.5%	35.02	\$2,074	\$2,157	\$2,438	\$364		17.6%	\$78

Excludes bills with daily consumption < 1kWh/day

Includes all CARE and non-CARE customers, all on no-CARE-program rates from table 2

Distribution of w * for w eighted rank method

Point Estimate	0.41
Mean of bootstrap	0.42
Median of bootstrap	0.41
95% conf interval	[0.21,0.61]

Table 3/5: SDG&E Average Bill By Income Bracket Under Alternative Flat-Rate Tariffs Using Median Income, Random-Rank, Usage-Rank and Weighted-Rank Methods

	Average Annualized Bill							Monetary Bill Chage from No-CARE/Flat			Percentag from N	Percentage Bill Chage from No-CARE/Flat		
Income	on	Flat	2-tier	5-tier	Flat	2-tier	5-tier	5-tier	Flat	5-tier	5-tier	Flat	5-tier	
Range	CARE	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff							
\$0-\$20k	58.5%	\$539	\$515	\$450	\$449	\$435	\$400	-\$89	-\$90	-\$139	-17%	-17%	-26%	
\$20k-\$40k	30.6%	\$747	\$728	\$668	\$695	\$679	\$634	-\$79	-\$53	-\$113	-11%	-7%	-15%	
\$40k-\$60k	5.1%	\$928	\$919	\$886	\$946	\$934	\$894	-\$43	\$17	-\$34	-5%	2%	-4%	
\$60k-\$100k	0.6%	\$1,136	\$1,141	\$1,145	\$1,180	\$1,180	\$1,172	\$9	\$44	\$36	1%	4%	3%	
>\$100k	0.0%	\$1,659	\$1,707	\$1,866	\$1,728	\$1,771	\$1,909	\$207	\$69	\$250	12%	4%	15%	

All results are from weighted rank method Excludes bills with daily consumption < 1kWh/day Includes all CARE and non-CARE customers

Table 7: SDG&E Estimated Average Annual Bills With and Without IBP and CARE

MC=0.1122

		Household Consumer Surplus							
Income	Share of	From S	w itch to	5-tier ta	ariff				
Range	Customers	e=0	ε = -0.1	ε = -0.2	ε = -0.3				
\$0-\$20k	16.4%	\$89	\$84	\$78	\$72				
\$20k-\$40k	22.4%	\$79	\$71	\$62	\$52				
\$40k-\$60k	18.9%	\$43	\$31	\$18	\$5				
\$60k-\$100k	23.8%	-\$9	-\$25	-\$41	-\$59				
>\$100k	18.5%	-\$207	-\$233	-\$261	-\$292				

Change in Annual Average

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.1622		Change in Annual Average Household Consumer Surplu							
Income	Share of	From S	w itch to	5-tier ta	ariff				
Range	Customers	ε=0	ε = -0.1	ε = -0.2	ε =-0.3				
\$0-\$20k	16.4%	\$89	\$87	\$85	\$83				
\$20k-\$40k	22.4%	\$79	\$76	\$72	\$69				
\$40k-\$60k	18.9%	\$43	\$37	\$32	\$26				
\$60k-\$100k	23.8%	-\$9	-\$17	-\$25	-\$33				
>\$100k	18.5%	-\$207	-\$222	-\$237	-\$252				

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.2122		Change in Annual Average Household Consumer Surplus						
Income	Share of	From S	w itch to	5-tier ta	ariff			
Range	Customers	e=0	ε = −0.1	ε = -0.2	ε = -0.3			
\$0-\$20k	16.4%	\$89	\$91	\$92	\$93			
\$20k-\$40k	22.4%	\$79	\$81	\$81	\$82			
\$40k-\$60k	18.9%	\$43	\$43	\$43	\$44			
\$60k-\$100k	23.8%	-\$9	-\$10	-\$10	-\$11			
>\$100k	18.5%	-\$207	-\$211	-\$215	-\$219			

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets

Flat-rate Price

Flat-rate Price				<i>b</i> raoka		\$0.1622	\$0.1633	\$0.1643	\$0.1652	
MC=0.2622		Change in Annual Average				Change in Aggregate				
Income	Share of	From S	From Sw itch to 5-tier tariff			From Switch to 5-tier tariff				
Range	Customers	e=0	ε=-0.1	ε=-0.2	ε = -0.3	0=3	ε=-0.1	ε=-0.2	ε=-0.3	
\$0-\$20k	16.4%	\$89	\$94	\$98	\$101	\$17	\$18	\$19	\$19	
\$20k-\$40k	22.4%	\$79	\$85	\$90	\$94	\$21	\$22	\$23	\$24	
\$40k-\$60k	18.9%	\$43	\$49	\$54	\$58	\$9	\$11	\$12	\$13	
\$60k-\$100k	23.8%	-\$9	-\$3	\$3	\$8	-\$2	-\$1	\$1	\$2	
>\$100k	18.5%	-\$207	-\$201	-\$196	-\$191	-\$44	-\$43	-\$42	-\$41	
Aggregate Ind	crease in DWL f	rom IBP (\$I	Wyr)			\$0	-\$7	-\$12	-\$17	
Ratio of DWL	to transfers to t	w o low est	tincome	e bracke	ets	0.00	-0.17	-0.30	-0.40	

Table 6: SDG&E Change in Consumer Surplus Switching from Flat-rate to 5-tier Tariff Under Alternative Demand Elasticities (Weighted Ranking Method)

Annual Consumer Surplus (\$M/yr) From Sw itch to 5-tier tariff ε=-0.1 ε=-0.2 **c=0** e=-0.3 \$17 \$16 \$15 \$14 \$18 \$16 \$13 \$21 \$9 \$7 \$4 \$1 -\$2 -\$7 -\$11 -\$16 -\$44 -\$50 -\$62 -\$56 \$0 \$51 \$16 \$32 0.00 0.46 1.05 1.86 \$0.1622 \$0.1612 \$0.1601 \$0.1588

Change in Aggregate

Change in Aggregate Annual Consumer Surplus (\$M/yr) From Sw itch to 5-tier tariff

ε = 0	ε=-0.1	ε=-0.2	ε = -0.3
\$17	\$17	\$16	\$16
\$21	\$20	\$19	\$18
\$9	\$8	\$7	\$6
-\$2	-\$5	-\$7	-\$9
-\$44	-\$47	-\$51	-\$54
\$0	\$8	\$16	\$24
0.00	0.22	0.45	0.71
\$0.1622	\$0.1622	\$0.1622	\$0.1622

Change in Aggregate

Annual Consumer Surplus (\$M/yr) From Switch to 5-tier tariff

€=-0.3	ε=-0.2	ε = −0.1	e=0
\$18	\$17	\$17	\$17
\$21	\$21	\$21	\$21
\$10	\$9	\$9	\$9
-\$3	-\$3	-\$3	-\$2
-\$47	-\$46	-\$45	-\$44
\$2	\$1	\$0	\$0
0.04	0.02	0.01	0.00
\$0.1652	\$0.1643	\$0.1633	0.1622

0.00 \$0.1622 \$0.1643 \$0.1661 \$0.1677

MC=0.1122		Change Househ	in Annu old Con:	ual Aver sumer S	age Jurplus	Change ir Annual C	n Aggrega onsumer S	ite Surplus (\$	M∕yr)
Income	Share of	From ad	ding CA	REprog	gram	From add	ing CARE	program	
Range	Customers	e=0	ε = -0.1	ε = -0.2	£=-0.3	0=3	ε = -0.1	ε = −0.2	ε=-0.3
\$0-\$20k	16.4%	\$90	\$90	\$91	\$92	\$17	\$17	\$17	\$17
\$20k-\$40k	22.4%	\$53	\$54	\$55	\$57	\$14	\$14	\$14	\$15
\$40k-\$60k	18.9%	-\$17	-\$18	-\$18	-\$18	-\$4	-\$4	-\$4	-\$4
\$60k-\$100k	23.8%	-\$44	-\$45	-\$47	-\$48	-\$12	-\$12	-\$13	-\$13
>\$100k	18.5%	-\$69	-\$72	-\$75	-\$79	-\$15	-\$15	-\$16	-\$17
Aggregate Incr	ease in DWL fi	rom CARE ((\$M/yr)			\$0	\$1	\$1	\$2
Ratio of DWL to	o transfers to t	w o low est	income	bracket	S	0.00	0.02	0.04	0.06
Flat-rate Price -	Standard Res	idential				\$0.1690	\$0.1680	\$0.1669	\$0.1658
Flat-rate Price -	CARE particip	ants				\$0.1168	\$0.1161	\$0.1154	\$0.1146
MC=0.1622		Change	in Annı	al Aver	ade	Change ir	Adareaa	ite	
		Househ	old Con	sumer S	urplus	Annual C	onsumer \$	Surplus (\$	M∕vr)
Income	Share of	From ad	ding CA	REpro	gram	From add	ing CARE	program	
Range	Customers	e=0	ε=-0.1	ε = -0.2	ε=-0.3	e=0	ε=-0.1	ε=-0.2	ε = -0.3
40.02 0.02	16 49/	002	¢01	¢02	¢02	¢17	¢17	¢17	¢10
Φ0-Φ20K	10.4%	\$90 \$90	ΦE1	\$9Z	\$93 \$57	Φ17 Φ14	Φ17 Φ14	Φ17 Φ14	Φ10 Φ1 <i>Γ</i>
\$20K-\$40K	22.470 18.0%	-\$17	-¢19	-¢10	-\$10	φ14 _¢4	φ14 _¢4	φ14 _¢4	ۍ انې ۱۵–
\$60k-\$100k	23.8%	-\$17	-\$16	-\$10	-\$50	-ψ+ -04-	- 4 - -\$13	-44- -413	+φ- ∧1⊅_
~\$100k	18.5%	-++ -\$69	-\$73	-\$77	-\$30 -\$81	-\$12	-\$16	-\$16	-\$17
201001	10.070	φ00	φ/Ο	Ψ11	ψOΤ	φ13	φισ	φισ	ψΠ
Aggregate Incr	ease in DWL fi	rom CARE ((\$M/yr)			\$0	\$1	\$2	\$3
Ratio of DWL to	o transfers to t	w o low est	income	bracket	S	0.00	0.03	0.05	0.08
Flat-rate Price -	Standard Res	idential				\$0.1690	\$0.1692	\$0.1693	\$0.1695
Flat-rate Price -	· CARE particip	oants				\$0.1168	\$0.1169	\$0.1170	\$0.1171
MC=0.2122		Change	in Annu	ual Aver	age	Change ir	Aggrega	ite	
		Househ	old Con	sumer S	urplus	Annual C	onsumer \$	Surplus (\$	M∕yr)
Income	Share of	From ad	ding CA	RE prog	gram	From add	ing CARE	program	
Range	Customers	e=0	ε = -0.1	ε = -0.2	£=-0.3	0=3	ε = -0.1	ε = −0.2	ε=-0.3
\$0-\$20k	16.4%	\$90	\$91	\$92	\$94	\$17	\$17	\$18	\$18
\$20k-\$40k	22.4%	\$53	\$54	\$56	\$57	\$14	\$14	\$14	\$15
\$40k-\$60k	18.9%	-\$17	-\$18	-\$19	-\$20	-\$4	-\$4	-\$4	-\$4
\$60k-\$100k	23.8%	-\$44	-\$46	-\$49	-\$51	-\$12	-\$13	-\$13	-\$14
>\$100k	18.5%	-\$69	-\$73	-\$78	-\$82	-\$15	-\$16	-\$17	-\$18
A garagata laar	acce in DN/L fu	rom CA DE ((CN 16 cr)				.	¢o	ድጋ
Aggregate incr						CD	U. 1		
Potio of DM/L to	transfore to t		incomo	brackot	· C	\$0	\$1 0.03		დ. ეკე
Ratio of DWL to	o transfers to t	w o low est	income	bracket	S	\$0 0.00 \$0 1690	\$1 0.03 \$0 1703	φ2 0.07 \$0 1715	ۍ 0.10 \$0 1726
Ratio of DWL to Flat-rate Price - Flat-rate Price -	• transfers to t • Standard Res • CARE particip	w o low est sidential pants	income	bracket	S	\$0 0.00 \$0.1690 \$0.1168	\$1 0.03 \$0.1703 \$0.1177	0.07 \$0.1715 \$0.1185	هم 0.10 \$0.1726 \$0.1193
Ratio of DWL to Flat-rate Price - Flat-rate Price -	o transfers to t Standard Res CARE particip	w o low est idential pants	income	bracket	S	\$0 0.00 \$0.1690 \$0.1168	\$1 0.03 \$0.1703 \$0.1177	0.07 \$0.1715 \$0.1185	هی 0.10 \$0.1726 \$0.1193
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622	o transfers to t • Standard Res • CARE particip	w o low est idential pants Change Houseb	income	bracket ual Aver	s age	\$0 0.00 \$0.1690 \$0.1168 Change ir	\$1 0.03 \$0.1703 \$0.1177 Aggrega	0.07 \$0.1715 \$0.1185 tte	53 0.10 \$0.1726 \$0.1193
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622	Share of	w o low est idential pants Change Househo From ad	income in Annuold Considing CA	bracket ual Aver sumer S	age aurplus aram	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add	\$1 0.03 \$0.1703 \$0.1177 Aggrega onsumer \$	0.07 \$0.1715 \$0.1185 tte Surplus (\$	53 0.10 \$0.1726 \$0.1193 ₩yr)
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range	Share of Customers	w o low est idential pants Change Househo From ad ε=0	in Annuold Consider the constant of the const	bracket ual Aver sumer S NRE prog ε =-0.2	age Surplus gram ε =-0.3	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add ε=0	\$1 0.03 \$0.1703 \$0.1177 Aggrega onsumer \$ ing CARE ε=-0.1	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2	53 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range	Share of Customers	w o low est idential pants Change Househo From ad $\varepsilon=0$	in Annu old Con: ding CA ε=-0.1	bracket ual Aver sumer S RE prog ε =-0.2	age surplus gram ε=-0.3 €⊂-	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add <i>ε</i> =0	\$1 0.03 \$0.1703 \$0.1177 Aggrega onsumer \$ ing CARE <i>e</i> =-0.1	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program e=-0.2	53 0.10 \$0.1726 \$0.1193 ₩yr) ε=-0.3
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range	Share of Customers 16.4%	w o low est idential pants Change Househo From ad $\varepsilon=0$ \$90	in Annu old Cons ϵ =-0.1	bracket ual Aver sumer S λRE prog ε=-0.2 \$93	s age urplus gram ε=-0.3 \$95	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add ε=0 \$17	\$1 0.03 \$0.1703 \$0.1177 h Aggrega onsumer \$ ing CARE ε=-0.1 \$17	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18	53 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3 \$18
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k \$60k	Share of Customers 16.4%	w o low est idential pants Change Househe From ad $\varepsilon=0$ \$90 \$53	in Annu old Cons e=-0.1 \$91 \$54	bracket ual Aver sumer S ARE prog e=-0.2 \$93 \$56	s age urplus gram ε=-0.3 \$95 \$58 	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add ε=0 \$17 \$14	\$1 0.03 \$0.1703 \$0.1177 A Aggrega onsumer \$ ing CARE \$17 \$14 \$14	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 €12	53 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3 \$18 \$15
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k	Share of Customers 16.4% 22.4% 18.9% 23.8%	w o low est idential pants Change Househe From ad $\varepsilon=0$ \$90 \$53 -\$17	in Annuold Consolid	bracket ual Aver sumer S RE prog e=-0.2 \$93 \$56 -\$19	s age urplus gram ε=-0.3 \$95 \$58 -\$20 -\$52	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add ε=0 \$17 \$14 -\$4	\$1 0.03 \$0.1703 \$0.1177 A Aggrega onsumer \$ ing CARE ε=-0.1 \$17 \$14 -\$4	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$4	\$3 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3 \$18 \$15 -\$4
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k \$00k	Share of Customers 16.4% 22.4% 18.9% 23.8%	w o low est idential pants Change Househe From ad ε=0 \$90 \$53 -\$17 -\$44	in Annu old Con: ding CA ε=-0.1 \$91 \$54 -\$47 -\$47	bracket ual Aver sumer S RE prog ε=-0.2 \$93 \$56 -\$19 -\$49 -\$49	s age turplus gram ε=-0.3 \$95 \$58 -\$20 -\$52 -\$84	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add ε=0 \$17 \$14 -\$12 -\$12	\$1 0.03 \$0.1703 \$0.1177 A Aggrega onsumer \$ ing CARE ε=-0.1 \$17 \$14 -\$13 .\$16	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$14 -\$14	\$3 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3 \$18 \$15 -\$4 -\$14
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 16.4% 22.4% 18.9% 18.5%	w o low est idential pants Change Househo From ad $\varepsilon=0$ \$90 \$53 -\$17 -\$44 -\$69	in Annu old Con: ding CA ε=-0.1 \$91 \$54 -\$14 -\$14 -\$14	bracket ual Aver sumer S λRE prog ε=-0.2 \$93 \$56 -\$19 -\$49 -\$79	s age urplus gram ε=-0.3 \$95 \$58 -\$20 -\$52 -\$84	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add $\varepsilon=0$ \$17 \$14 -\$4 -\$4 -\$12 -\$15	\$1 0.03 \$0.1703 \$0.1177 • Aggrega onsumer \$ ing CARE <i>ε</i> =-0.1 \$17 \$14 -\$4 -\$13 -\$16	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$4 -\$14 -\$17	\$3 0.10 \$0.1726 \$0.1193 ₩yr) ε=-0.3 \$18 \$15 -\$4 -\$14 -\$18
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$40k-\$100k >\$100k Aggregate Incre	Share of Customers 16.4% 22.4% 18.9% 23.8% 18.5% ease in DWL fi	w o low est idential pants Change Househe From ad €=0 \$90 \$53 -\$17 -\$44 -\$69 rom CARE (in Annu old Con: ding CA ε=-0.1 \$91 \$54 -\$18 -\$47 -\$74 (\$W/yr)	bracket ual Aver sumer S \RE prog ε=-0.2 \$93 \$56 -\$19 -\$49 -\$79	s age urplus gram ε=-0.3 \$95 \$58 -\$20 -\$52 -\$84	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add <i>ε</i> =0 \$17 \$14 -\$4 -\$12 -\$15 \$0	\$1 0.03 \$0.1703 \$0.1177 • Aggrega onsumer \$ ing CARE <i>ε</i> =-0.1 \$17 \$14 -\$4 -\$13 -\$13 -\$16	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$4 -\$14 -\$14 -\$17 \$3	\$3 0.10 \$0.1726 \$0.1193 ₩yr) ε=-0.3 \$18 \$15 -\$4 -\$14 -\$18 -\$18 \$4
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Incre Ratio of DWL to	Share of Customers 16.4% 22.4% 18.9% 23.8% 18.5% ease in DWL for transfers to t	w o low est idential pants Change Househo From ad €=0 \$90 \$53 -\$17 -\$44 -\$69 rom CA RE (w o low est	in Annu old Con: ding CA ε=-0.1 \$91 \$54 -\$18 -\$47 -\$74 (\$M⁄yr) income	bracket ual Aver sumer S ARE prog e=-0.2 \$93 \$56 -\$19 -\$49 -\$79 bracket	s age urplus gram ε=-0.3 \$95 \$58 -\$20 -\$52 -\$52 -\$52 -\$84	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add <i>ε</i> =0 \$17 \$14 -\$4 -\$12 -\$15 \$0 0.00	\$1 0.03 \$0.1703 \$0.1177 A Aggrega onsumer \$ ing CARE ε=-0.1 \$17 \$14 -\$4 -\$13 -\$16 \$1 0.04	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$4 -\$14 -\$14 -\$14 -\$17 \$3 0.08	\$3 0.10 \$0.1726 \$0.1193 ₩yr) ε=-0.3 \$18 \$15 -\$4 -\$14 -\$18 -\$18 -\$14 -\$18
Ratio of DWL to Flat-rate Price - Flat-rate Price - MC=0.2622 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Incre Ratio of DWL to Flat-rate Price -	Share of Customers 16.4% 22.4% 18.9% 23.8% 18.5% ease in DWL for transfers to t	w o low est idential pants Change Househe From ad €=0 \$90 \$53 -\$17 -\$44 -\$69 rom CA RE (w o low est idential	in Annu old Con: ding CA ε=-0.1 \$91 \$54 -\$18 -\$47 -\$74 (\$M⁄yr) income	bracket ual Aver sumer S ARE prog e=-0.2 \$93 \$56 -\$19 -\$49 -\$79 bracket	s age urplus gram ε=-0.3 \$95 \$58 -\$20 -\$52 -\$52 -\$84 s	\$0 0.00 \$0.1690 \$0.1168 Change ir Annual C From add $\varepsilon=0$ \$17 \$14 -\$4 -\$12 -\$15 \$0 0.00 \$0.1690	\$1 0.03 \$0.1703 \$0.1177 • Aggrega onsumer \$ ing CARE <i>ε</i> =-0.1 \$17 \$14 -\$4 -\$13 -\$16 \$1 0.04 \$0.1713	0.07 \$0.1715 \$0.1185 tte Surplus (\$ program ε=-0.2 \$18 \$15 -\$4 -\$14 -\$14 -\$17 \$3 0.08 \$0.1734	\$3 0.10 \$0.1726 \$0.1193 Wyr) ε=-0.3 \$18 \$15 -\$4 -\$14 -\$18 \$4 0.11 \$0.1752

Table 8: SDG&E Change in Consumer Surplus Switching from No-CARE to w/CARE With Flat-rate Tariff Under Alternative Demand Elasticities (Weighted Ranking Method)

	Residential							
	Usage	Perc	entage	of Reside	CARE/Non-CAF	RE Shares		
	(million-kWh)	tier 1	tier 2	tier 3	tier 4	tier 5	% Usage %	customers
Non-CARE	23,046	52.9%	10.7%	16.5%	10.9%	9.0%	79.3%	74.8%
CARE	6,016	66.0%	10.7%	13.5%	6.7%	3.1%	20.7%	25.2%
	- Percentag	e of Custo	mers on	Each Ti	er for Ma	arginal Co	- onsumption	
		tier 1	tier 2	tier 3	tier 4	tier 5		
Non-CARE		32.4%	14.2%	25.0%	17.2%	11.3%		
CARE		45.4%	16.7%	22.7%	10.9%	4.3%		

Web Appendix 3: Complete Tables for Southern California Edison

NOTE: reported results drop household accounts with consumption of less than 1 kWh/day

Table 1: Distribution of SCE Residential Customer Consumption Across Tariff Tiers

	% of	Standard	CARE		% of	Standard
	Baseline	Residential	Low-income		Baseline	Residential
Tie	r Quantity	Rate	Rate	Tier	Quantity	Rate
٩c	tual 2006 tariff (tin	ne-weighted ave	rage in 2006)	Ben	chmark Five-Tier Ta	ariff with no CARE progra
1	0-100%	\$0.1162	\$0.0834	1	0-100%	\$0.1069
2	100%-130%	\$0.1361	\$0.1053	2	100%-130%	\$0.1268
3	130%-200%	\$0.2201	\$0.1691	3	130%-200%	\$0.2108
4	200%-300%	\$0.3049	\$0.1717	4	200%-300%	\$0.2956
5	300%+	\$0.3049	\$0.1717	5	300%+	\$0.2956
Alt	ernative Flat-Rate	Tariff with CARE	E program	Alte	rnative Flat-Rate Ta	ariff with no CARE progra
	0%+	\$0.1731	\$0.1060		0%+	\$0.1592
Alt	ernative Two-Tier	Tariff with CARE	program	Alte	rnative Two-Tier Ta	riff with no CARE program
	1 0-100%	\$0.1595	\$0.0999	1	1 0-100%	\$0.1474
	2 1009/ 1	¢0 1883	¢0 1170	-	2 1009/ 1	¢0 1730

	Table 2	2:	2006	SCE	Retail	Electricity	Rates
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OLS Regression Dependent Variable: Household Daily Average Consumption (kWh/day)

		Robust
	Coefficient	Std Error
\$0-\$20k bracket	14.729	0.506
\$20k-\$40k bracket	17.011	0.554
\$40k-\$60k bracket	18.793	0.619
\$60k-\$100k bracket	21.532	0.552
>\$100k bracket	28.970	0.982
R-squared	0.14	
F(4,6565)	51.68	
Observations	6570	

(R-squared and F-test reported for regression with constant term)

Table 4: OLS Regression of consumption on income brackets in SCE territory

			Average		Average	•	Ch	nange from Flat t	o 5-tier	Aggregate
	Income	Share of	Daily Use	e An	nualized	Bill	Dollar		Percent	Annual
	Range	Customers	(kWh)	Flat	2-tier	5-tier	Chg	95% conf intvl	Change 95% conf intvl	Chg (\$M)
median	\$0-\$20k	2.2%	13.51	\$785	\$762	\$656	-\$128		-16.4%	-\$12
household	\$20k-\$40k	29.0%	16.09	\$935	\$918	\$833	-\$101		-10.8%	-\$119
income	\$40k-\$60k	35.0%	18.66	\$1,084	\$1,078	\$1,032	-\$52		-4.8%	-\$74
in CBG	\$60k-\$100k	28.5%	23.05	\$1,339	\$1,354	\$1,426	\$87		6.5%	\$100
	>\$100k	5.2%	32.12	\$1,866	\$1,932	\$2,366	\$500		26.8%	\$104
random	\$0-\$20k	17.9%	16.98	\$986	\$974	\$908	-\$78		-8.0%	-\$57
rank	\$20k-\$40k	22.1%	17.93	\$1,041	\$1,033	\$985	-\$57		-5.5%	-\$51
method	\$40k-\$60k	18.9%	19.34	\$1,124	\$1,121	\$1,104	-\$19		-1.7%	-\$15
	\$60k-\$100k	23.7%	20.86	\$1,212	\$1,217	\$1,237	\$25		2.0%	\$24
	>\$100k	17.4%	23.85	\$1,386	\$1,406	\$1,527	\$141		10.2%	\$99
w eighted	\$0-\$20k	17.9%	13.51	\$785	\$762	\$653	-\$132	[-\$140, -\$123]	-16.9% [-19.2%, -14.8%]	-\$95
rank	\$20k-\$40k	22.1%	16.75	\$973	\$959	\$879	-\$94	[-\$110,-\$80]	-9.7% [-11.6%, -8.0%]	-\$84
method	\$40k-\$60k	18.9%	19.41	\$1,128	\$1,125	\$1,098	-\$29	[-\$45, -\$21]	-2.6% [-4.1%, -1.9%]	-\$22
	\$60k-\$100k	23.7%	21.24	\$1,234	\$1,239	\$1,260	\$26	[-\$24. \$26]	2.1% [1.9%, 2.2%]	\$25
	>\$100k	17.4%	28.33	\$1,646	\$1,684	\$1,900	\$253	[\$216, \$301]	15.4% [13.8%, 17.3%]	\$178
usage	\$0-\$20k	17.9%	8.85	\$514	\$485	\$365	-\$149		-28.9%	-\$108
rank	\$20k-\$40k	22.1%	14.56	\$846	\$822	\$696	-\$150		-17.7%	-\$134
method	\$40k-\$60k	18.9%	16.61	\$965	\$944	\$834	-\$131		-13.6%	-\$100
	\$60k-\$100k	23.7%	21.90	\$1,272	\$1,271	\$1,201	-\$72		-5.6%	-\$69
	>\$100k	17.4%	38.08	\$2,212	\$2,297	\$2,797	\$585		26.4%	\$412

Excludes bills with daily consumption < 1kWh/day

Includes all CARE and non-CARE customers, all on no-CARE-program rates from table 2

Distribution of w * for w eighted rank method

Point Estimate	0.29
Mean of bootstrap	0.29
Median of bootstrap	0.28
95% conf interval	[0.21,0.37]

Table 3/5: SCE Average Bill By Income Bracket Under Alternative Flat-Rate Tariffs Using Median Income, Random-Rank, Usage-Rank and Weighted-Rank Methods

	Average Annualized Bill						Monet from I	tary Bill (No-CARE	Chage /Flat	Percentag from N	Je Bill C o-CARE	hage /Flat	
	Share	INO			WIU	ICARE		NU-CARE	W/CARE	W/CARE	NO-CAREN	/CAREA	//UARE
Income	on	Flat	2-tier	5-tier	Flat	2-tier	5-tier	5-tier	Flat	5-tier	5-tier	Flat	5-tier
Range	CARE	Tariff	tariff	Tariff	Tariff	tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff	Tariff
\$0-\$20k	69.9%	\$785	\$762	\$653	\$609	\$596	\$546	-\$132	-\$176	-\$239	-17%	-22%	-30%
\$20k-\$40k	47.1%	\$973	\$959	\$879	\$863	\$853	\$804	-\$94	-\$111	-\$170	-10%	-11%	-17%
\$40k-\$60k	11.3%	\$1,128	\$1,125	\$1,098	\$1,163	\$1,157	\$1,115	-\$29	\$35	-\$12	-3%	3%	-1%
\$60k-\$100k	0.6%	\$1,234	\$1,239	\$1,260	\$1,337	\$1,337	\$1,327	\$26	\$103	\$93	2%	8%	8%
>\$100k	0.0%	\$1,646	\$1,684	\$1,900	\$1,790	\$1,823	\$1,996	\$253	\$144	\$350	15%	9%	21%

All results are from weighted rank method Excludes bills with daily consumption < 1kWh/day Includes all CARE and non-CARE customers

Table 7: SCE Estimated Average Annual Bills With and Without IBP and CARE

MC=0.1092

Flat-rate Price

		Household Consumer Surplus						
Income	Share of	From Sw itch to 5-tier tariff						
Range	Customers	e=0	ε = -0.1	ε = -0.2	ε = -0.3			
\$0-\$20k	17.9%	\$132	\$117	\$101	\$84			
\$20k-\$40k	22.1%	\$94	\$74	\$51	\$27			
\$40k-\$60k	18.9%	\$29	\$3	-\$26	-\$57			
\$60k-\$100k	23.7%	-\$26	-\$56	-\$90	-\$126			
>\$100k	17.4%	-\$253	-\$300	-\$351	-\$407			

Change in Annual Average

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.1592		Change in Annual Average Household Consumer Surplu						
Income	Share of	From Sw itch to 5-tier tariff						
Range	Customers	ε=0	ε = -0.1	ε = -0.2	ε = -0.3			
\$0-\$20k	17.9%	\$132	\$124	\$117	\$109			
\$20k-\$40k	22.1%	\$94	\$83	\$71	\$60			
\$40k-\$60k	18.9%	\$29	\$14	-\$2	-\$19			
\$60k-\$100k	23.7%	-\$26	-\$44	-\$64	-\$83			
>\$100k	17.4%	-\$253	-\$284	-\$315	-\$348			

Aggregate Increase in DWL from IBP (\$Myr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

MC=0.2092		Change in Annual Average Household Consumer Surplus			
Income	Share of	From S	w itch to	5-tier ta	ariff
Range	Customers	0=3	ε=-0.1	ε=-0.2	ε=-0.3
\$0-\$20k	17.9%	\$132	\$132	\$131	\$130
\$20k-\$40k	22.1%	\$94	\$92	\$89	\$86
\$40k-\$60k	18.9%	\$29	\$24	\$19	\$13
\$60k-\$100k	23.7%	-\$26	-\$33	-\$40	-\$48
>\$100k	17.4%	-\$253	-\$268	-\$283	-\$299

Aggregate Increase in DWL from IBP (\$M/yr) Ratio of DWL to transfers to two low est income brackets Flat-rate Price

onsumer S	Surplus (\$	M∕yr)
tch to 5-ti	er tariff	
ε=-0.1	ε=-0.2	ε=-0.3
\$85	\$73	\$61
\$66	\$46	\$24
\$2	-\$20	-\$44
-\$54	-\$86	-\$120
-\$211	-\$247	-\$286
\$113	\$234	\$365
0.75	1.97	4.28
\$0.1577	\$0.1560	\$0.1543
	onsumer S tch to 5-tic e=-0.1 \$85 \$66 \$2 -\$54 -\$211 \$113 0.75 \$0.1577	$\begin{array}{c} \text{onsumer Surplus ($}\\ \text{tch to 5-tier tariff}\\ \underline{e}=-0.1 \underline{e}=-0.2\\ \\ \$85 \$73\\ \$66 \$46\\ \$2 -\$20\\ -\$54 -\$86\\ -\$211 -\$247\\ \\ \$113 \$234\\ 0.75 1.97\\ \$0.1577 \$0.1560 \end{array}$

Change in Aggregate

Change in Aggregate Annual Consumer Surplus (\$Myr) From Sw itch to 5-tier tariff

ε=0	ε = -0.1	ε = -0.2	ε = -0.3
\$95	\$90	\$84	\$79
\$84	\$74	\$64	\$53
\$22	\$11	-\$2	-\$14
-\$25	-\$42	-\$61	-\$80
-\$178	-\$200	-\$222	-\$245
\$0	\$67	\$136	\$207
0.00	0.41	0.92	1.57
\$0.1592	\$0.1592	\$0.1592	\$0.1592

Change in Aggregate

Annual Consumer Surplus (\$Myr) From Sw itch to 5-tier tariff

			10111 011
£=-0.3	ε=-0.2	ε = -0.1	0=3
\$94	\$95	\$95	\$95
\$77	\$80	\$82	\$84
\$10	\$14	\$18	\$22
-\$46	-\$39	-\$31	-\$25
-\$210	-\$199	-\$189	-\$178
\$75	\$49	\$24	\$0
0.44	0.28	0.14	0.00
\$0.1633	\$0.1620	\$0.1606	\$0.1592

\$0.1592 \$0.1619 \$0.1645 \$0.1669

MC=0.2592	2	Change Househ	in Ann old Con	ual Ave Isumer S	rage Surplus	Change in Annual Co	Aggregat nsumer S	e urplus (\$N	//√yr)
Income	Share of	From S	witch to	5-tier ta	ariff	From Sw it	ch to 5-tie	r tariff	<i>,</i>
Range	Customers	0=3	ε = -0.1	ε = −0.2	ε = −0.3	0=3	ε = -0.1	ε = −0.2	£=-0.3
\$0-\$20k	17.9%	\$132	\$138	\$143	\$147	\$95	\$100	\$104	\$107
\$20k-\$40k	22.1%	\$94	\$100	\$105	\$109	\$84	\$90	\$94	\$97
\$40k-\$60k	18.9%	\$29	\$34	\$38	\$40	\$22	\$26	\$29	\$31
\$60k-\$100k	23.7%	-\$26	-\$22	-\$20	-\$18	-\$25	-\$21	-\$19	-\$17
>\$100k	17.4%	-\$253	-\$254	-\$255	-\$257	-\$178	-\$179	-\$179	-\$181
Aggregate Inc	crease in DWL f	rom IBP (\$N	√/yr)			\$0	-\$16	-\$28	-\$37
Ratio of DWL	to transfers to t	wolowest	income	e bracke	ts	0.00	-0.08	-0.14	-0.18

Table 6: SCE Change in Consumer Surplus Switching from Flat-rate to 5-tier Tariff Under Alternative Demand Elasticities (Weighted Ranking Method)

MC=0.1092		Change in Annual Average	Change in Aggre	gate	
	0.	Household Consumer Surplus	Annual Consume	r Surplus (\$1	Wyr)
Income	Share of	From adding CARE program	From adding CAF	t program	0.0
Range	Customers	e=0 $e=-0.1$ $e=-0.2$ $e=-0.3$	0-=3 0=3	ι ε=-0.2	£=-0.3
\$0-\$20k	17.9%	\$176 \$179 \$182 \$186	\$127 \$12	9 \$132	\$135
\$20k-\$40k	22.1%	\$111 \$113 \$116 \$120	\$99 \$10	1 \$104	\$107
\$40k-\$60k	18.9%	-\$35 -\$36 -\$38 -\$39	-\$27 -\$2	8 -\$29	-\$30
\$60k-\$100k	23.7%	-\$103 -\$107 -\$112 -\$118	-\$98 -\$10	3 -\$107	-\$113
>\$100k	17.4%	-\$144 -\$152 -\$161 -\$172	-\$101 -\$10	7 -\$113	-\$121
Aggregate Inc Ratio of DWL Flat-rate Price	rease in DWL f to transfers to - Standard Res	rom CARE (\$M⁄yr) tw o low est income brackets sidential	\$0 \$ 0.00 0.0 \$0.1731 \$0.171	67 \$14 03 0.06 7 \$0.1703	\$22 0.09 \$0.1687
Flat-rate Price	- CARE partici	pants	\$0.1060 \$0.105	2 \$0.1043	\$0.1033
MC=0.1592		Change in Annual Average	Change in Aggre	gate	(16 cr)
Income	Share of	From adding CARE program	From adding CAF	Program	vvyi)
Range	Customers	s=0 $s=-0.1$ $s=-0.2$ $s=-0.3$	e=0 e=-0	$1 \epsilon = -0.2$	e=-0.3
i la i go	Cuctomore				2 0.0
\$0-\$20k	17.9%	\$176 \$180 \$185 \$189	\$127 \$13	0 \$133	\$137
\$20k-\$40k	22.1%	\$111 \$114 \$117 \$121	\$99 \$10	2 \$105	\$108
\$40k-\$60k	18.9%	-\$35 -\$37 -\$39 -\$42	-\$27 -\$2	8 -\$30	-\$32
\$60k-\$100k	23.7%	-\$103 -\$109 -\$115 -\$122	-\$98 -\$10	4 -\$110	-\$117
>\$100k	17.4%	-\$144 -\$154 -\$166 -\$178	-\$101 -\$10	9 -\$117	-\$125
Aggregate Inc	rease in DWL f	rom CARE (\$M/yr)	\$0 \$	9 \$19	\$29
Ratio of DWL	to transfers to	two lowest income brackets	0.00 0.0	4 0.08	0.12
Flat-rate Price	- Standard Res	sidential	\$0.1731 \$0.173	5 \$0.1739	\$0.1743
Flat-rate Price	- CARE partici	pants	\$0.1060 \$0.106	2 \$0.1065	\$0.1067
MC=0 2092		Change in Annual Average	Change in Aggre	nate	
		onango in / milaal / Worago	Change in Aggre	guio	
		Household Consumer Surplus	Annual Consume	r Surplus (\$N	M∕vr)
Income	Share of	Household Consumer Surplus From adding CARE program	Annual Consume From adding CAF	r Surplus (\$N REprogram	Wyr)
Income Range	Share of Customers	Household Consumer Surplus From adding CARE program ε=0 ε=-0.1 ε=-0.2 ε=-0.3	Annual Consume From adding CAF ε=0 ε=-0	r Surplus (\$Ν RE program .1 ε=-0.2	Wyr) ε=-0.3
Income Range	Share of Customers	Household Consumer Surplus From adding CARE program $\varepsilon=0 \varepsilon=-0.1 \varepsilon=-0.2 \varepsilon=-0.3$	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$	r Surplus (\$ E program 1 ϵ =-0.2	Wyr) <i>ε</i> =-0.3
Income Range \$0-\$20k	Share of Customers 17.9%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \varepsilon=-0.1 \varepsilon=-0.2 \varepsilon=-0.3$ \$176 \$181 \$187 \$192	Annual Consume From adding CAF ε=0 ε=-0 \$127 \$13	r Surplus (\$M RE program 1 ε =-0.2	Wyr) <i>ε</i> =-0.3 \$139
Income Range \$0-\$20k \$20k-\$40k	Share of Customers 17.9% 22.1%	Household Consumer Surplus From adding CARE program ε=0 ε=-0.1 ε=-0.2 ε=-0.3 \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122	Annual Consume From adding CAF ɛ=0 ɛ=-0 \$127 \$13 \$99 \$10	r Surplus (\$Ν RE program 1 ε=-0.2 1 \$135 2 \$106	₩yr) ε=-0.3 \$139 \$109
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k	Share of Customers 17.9% 22.1% 18.9%	Household Consumer Surplus From adding CARE program ε=0 ε=-0.1 ε=-0.2 ε=-0.3 \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44	Annual Consume From adding CAF ɛ=0 ɛ=-0 \$127 \$13 \$99 \$10 -\$27 -\$2	r Surplus (\$1 RE program 1	₩yr) ε=-0.3 \$139 \$109 -\$33
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k	Share of Customers 17.9% 22.1% 18.9% 23.7%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10	r Surplus (\$1 RE program 1 e=-0.2 1 \$135 2 \$106 29 -\$31 66 -\$113	Wyr) €=-0.3 \$139 \$109 -\$33 -\$121
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183	Annual Consume From adding CAF E=0 E=-0 \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11	r Surplus (\$1 RE program 1	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Wyr)	Annual Consume From adding CAF =0 =-0 \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1	r Surplus (\$1 RE program 1 e=-0.2 1 \$135 2 \$106 29 -\$31 6 -\$113 0 -\$119 1 \$23	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% trease in DWL f	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) tw o low est income brackets	Annual Consume From adding CAF =0 =-0 \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0	r Surplus (\$ RE program 1 ε =-0.2 1 \$135 2 \$106 2 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% trease in DWL f to transfers to - Standard Res	Household Consumer Surplus From adding CARE program e=0 e=-0.1 e=-0.2 e=-0.3 \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M/yr) tw o low est income brackets sidential	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175	r Surplus (\$ RE program 1 ε =-0.2 1 \$135 2 \$106 2 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% trease in DWL f to transfers to - Standard Res - CARE particij	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Wyr) tw o low est income brackets sidential pants	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107	r Surplus (\$ E program 1 ε =-0.2 1 \$135 2 \$106 2 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% rease in DWL f to transfers to - Standard Re - CARE particip	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) tw o low est income brackets sidential pants Change in Annual Average	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre	r Surplus (\$ E program 1 ε =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 0ate	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% rrease in DWL f to transfers to - Standard Re - CARE particip	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M/yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume	r Surplus (\$№ E program 1	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 ₩yr)
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price MC=0.2592 Income	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Re - CARE particip Share of	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M/yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF	r Surplus (\$1 RE program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 0 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$1 RE program	₩yr) ε=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 ₩yr)
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price MC=0.2592 Income Range	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$	r Surplus (\$1 RE program 1 ε =-0.2 1 \$135 2 \$106 2 \$106 2 \$106 2 \$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$1 RE program 1 ε =-0.2	Wyr) €=-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) €=-0.3
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13	r Surplus (\$1 RE program 1 ε =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$1 RE program 1 ε =-0.2 2 \$136	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10	r Surplus (\$1 RE program 1 ε =-0.2 1 \$135 2 \$106 2 \$106 2 \$106 2 \$131 0 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$1 RE program 1 ε =-0.2 3 \$136 3 \$106	Wyr)
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3	r Surplus (\$1 RE program 1 ε =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$1 RE program 1 ε =-0.2 2 \$136 3 \$106 -\$32	<pre>Wyr)</pre>
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 \$98 -\$10	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 2 \$136 3 \$106 3 \$106 3 \$106 3 -\$32 7 -\$115	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$35 -\$124
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% Trease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) two low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129 -\$144 -\$159 -\$173 -\$188	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 -\$98 -\$10 -\$101 -\$11	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 2 \$136 3 \$106 3 \$106 3 -\$32 7 -\$115 2 -\$122	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$135 -\$124 -\$132
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% crease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$M'yr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129 -\$144 -\$159 -\$173 -\$188	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 \$99 \$10 -\$27 -\$3 \$99 \$10 -\$27 -\$3 \$99 \$10 -\$27 -\$3 \$99 \$10 -\$27 -\$3 \$99 \$10 -\$27 -\$3 \$99 \$10	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 2 \$106 2 \$131 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 3 \$136 3 \$106 3 \$106 3 \$106 3 \$106 3 \$122	<pre>Wyr)</pre>
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$40k-\$100k >\$100k Aggregate Inc	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% Trease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0 \ \varepsilon=-0.1 \ \varepsilon=-0.2 \ \varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$129 -\$144 -\$159 -\$173 -\$188 From CARE (\$Myr)	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 -\$98 -\$10 -\$101 -\$11 \$0 \$1	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 2 \$136 3 \$106 3 \$106 3 \$106 3 -\$32 2 -\$122 4 \$27	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$35 -\$124 -\$132 \$39
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$40k-\$60k \$40k-\$100k >\$100k Aggregate Inc Ratio of DWL	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% Trease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) two low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129 -\$144 -\$159 -\$173 -\$188 From CARE (\$Myr) tw o low est income brackets	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 \$1 0	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 2 \$136 3 \$106 3 \$106 3 -\$32 7 -\$115 2 -\$122 4 \$27 6 0.11	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$35 -\$124 -\$132 \$39 0.16
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% Trease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$Myr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129 -\$144 -\$159 -\$173 -\$188 From CARE (\$Myr) tw o low est income brackets sidential	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.176	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 6 -\$113 0 -\$119 1 \$23 5 0.09 1 \$0.1771 2 \$0.1085 gate r Surplus (\$ R program 1 e =-0.2 2 \$136 3 \$106 0 -\$32 7 -\$115 2 -\$122 4 \$27 6 0.11 7 \$0.1800	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$35 -\$124 -\$132 \$39 0.16 \$0.1831
Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price MC=0.2592 Income Range \$0-\$20k \$20k-\$40k \$40k-\$60k \$60k-\$100k >\$100k Aggregate Inc Ratio of DWL Flat-rate Price Flat-rate Price	Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4% Trease in DWL f to transfers to - Standard Res - CARE particip Share of Customers 17.9% 22.1% 18.9% 23.7% 17.4%	Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$181 \$187 \$192 \$111 \$114 \$118 \$122 -\$35 -\$38 -\$41 -\$44 -\$103 -\$110 -\$118 -\$126 -\$144 -\$156 -\$170 -\$183 From CARE (\$MVyr) tw o low est income brackets sidential pants Change in Annual Average Household Consumer Surplus From adding CARE program $\varepsilon=0$ $\varepsilon=-0.1$ $\varepsilon=-0.2$ $\varepsilon=-0.3$ \$176 \$182 \$188 \$194 \$111 \$115 \$119 \$123 -\$35 -\$39 -\$42 -\$45 -\$103 -\$112 -\$121 -\$129 -\$144 -\$159 -\$173 -\$188 From CARE (\$MVyr) tw o low est income brackets sidential pants	Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$2 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.175 \$0.1060 \$0.107 Change in Aggre Annual Consume From adding CAF $\varepsilon=0$ $\varepsilon=-0$ \$127 \$13 \$99 \$10 -\$27 -\$3 -\$98 -\$10 -\$101 -\$11 \$0 \$1 0.00 0.0 \$0.1731 \$0.76 \$0.1760 \$0.106	r Surplus (\$ R program 1 e =-0.2 1 \$135 2 \$106 9 -\$31 1 \$23 0 -\$119 1 \$23 0 -\$122 4 \$27 0 -111 7 \$0.1800 2 \$0.1102	Wyr) ε =-0.3 \$139 \$109 -\$33 -\$121 -\$129 \$34 0.14 \$0.1790 \$0.1096 Wyr) ε =-0.3 \$141 \$110 -\$35 -\$124 -\$132 \$39 0.16 \$0.1831 \$0.1121

Table 8: SCE Change in Consumer Surplus Switching from No-CARE to w/CARE With Flat-rate Tariff Under Alternative Demand Elasticities (Weighted Ranking Method)