

**COMMENTS OF THE INTERSTATE RENEWABLE
ENERGY COUNCIL, INC. ON RESIDENTIAL
RATE DESIGN PROPOSALS**

Appendix A:

Detailed Results of Preliminary IREC Modeling

I. Fixed Charge Impact Analysis

A. SCE's Proposed Customer Charges

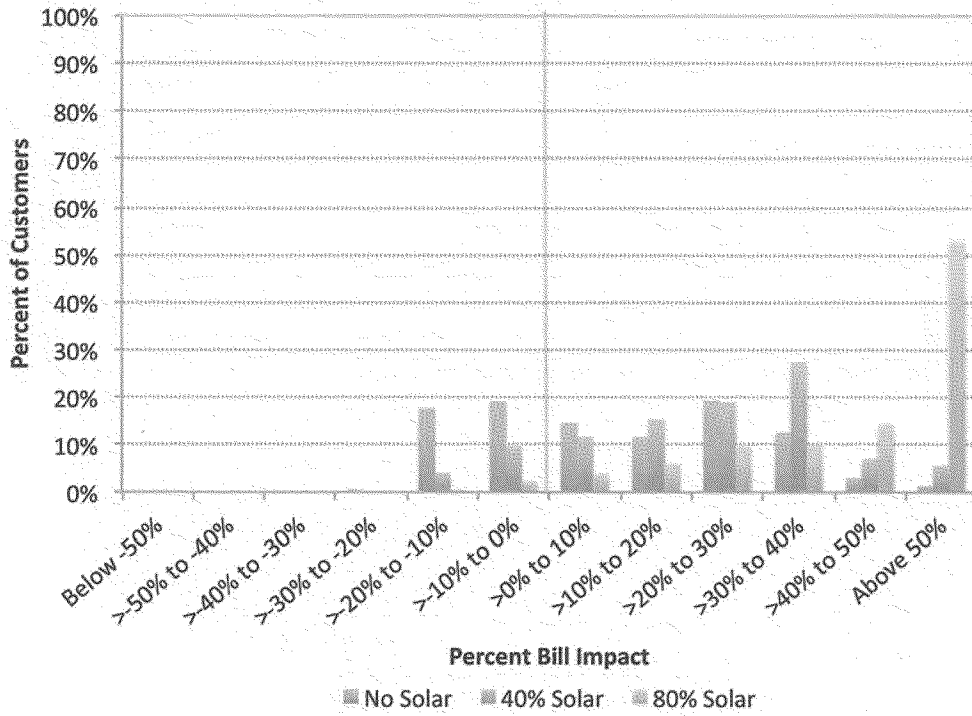
SCE residential customers currently have a fixed charge of \$0.03/day or roughly \$0.91/month.¹ In SCE's proposals for an interim 3-tier rate and final 2-tier rate include a fixed customer charge of \$5/month and SCE's proposal for a TOU rate includes a demand-differentiated customer charge of \$15-20/month.²

In order to examine the impact of the proposed customer charges on the value of NEM, we examined the bill impacts of moving from the current rate structure to SCE's proposed interim 3-tier rate with a \$5 customer charge. The results are shown for the Coastal and Inland customer samples in Figure A - 1 and Figure A - 2 below.

¹ SCE Schedule D-Domestic, AL-2909-E, in affect 6/1/2013.

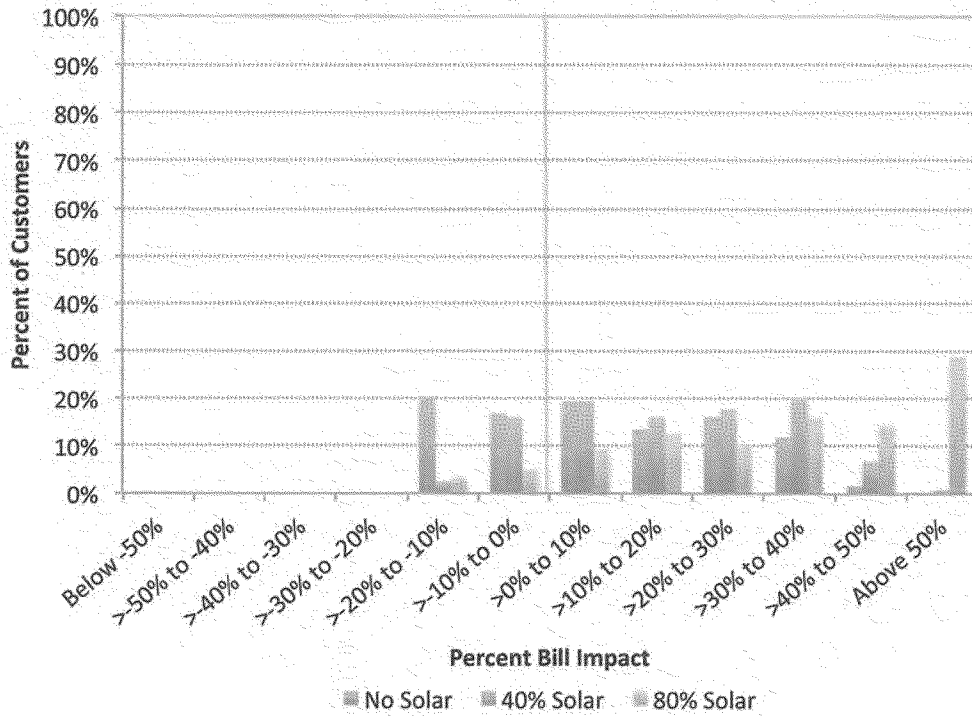
² Residential Rate Design Proposal of Southern California Edison Company in R.12-06-013, July 1, 2013, Attachment A, pp. A-3, A-15 and A-16.

Figure A - 1: Bill Impacts of SCE Interim 3-Tier Rate with \$5 Customer Charge in Relation to Current Rate, Coastal Customers



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current	\$102.47	\$52.27	\$13.34
SCE Interim, \$5.00	\$98.95	\$57.18	\$17.94
Average Increase	\$(3.51)	\$4.91	\$4.61
% Increase	-3%	9%	35%

Figure A - 2: Bill Impacts of SCE Interim 3-Tier Rate with \$5 Customer Charge in Relation to Current Rate, Inland Customers

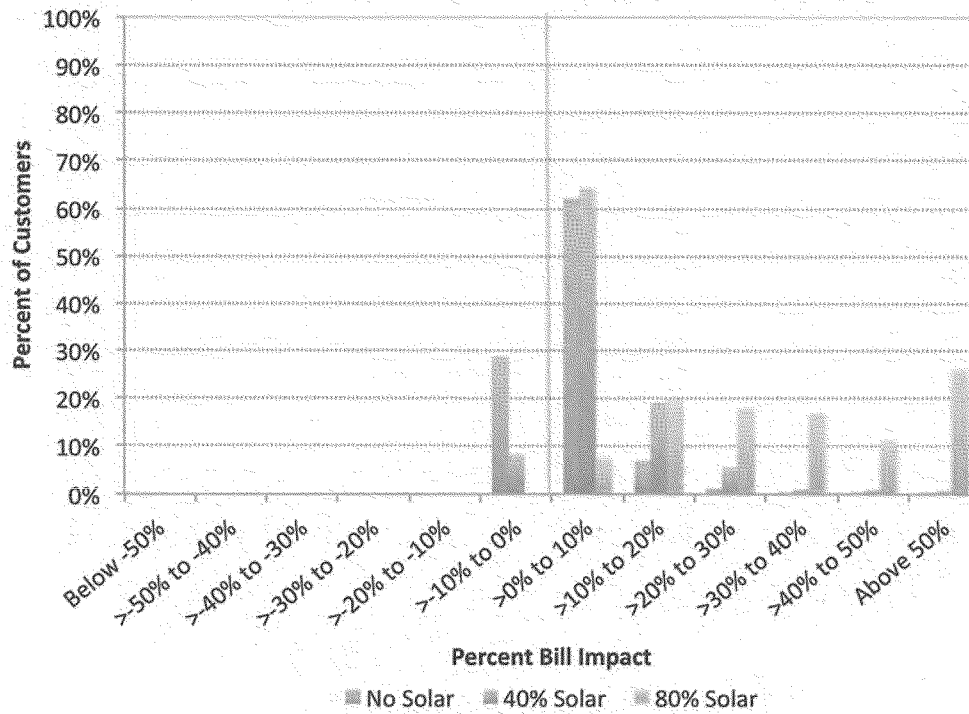


Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current	\$119.02	\$62.31	\$19.69
SCE Interim, \$5.00	\$115.60	\$66.89	\$23.69
Average Increase	\$(3.42)	\$4.58	\$4.00
% Increase	-3%	7%	20%

Figure A - 1 and Figure A - 2 demonstrate that SCE’s proposed interim 3-Tier rate with a \$5 customer charge can be expected to have a disproportionately negative impact on NEM customers, especially in the coastal climate zone where the majority of customers in the sample with large solar installations will see bill increases of over 50% under the proposed rate. In order to separate the impacts of moving to SCE’s proposed flattened 3 tiers from SCE’s proposal to increase the customer charge, we ran SCE’s bill impact calculator using the same assumptions SCE uses to create its interim 3-tier, \$5 customer charge proposal, but modified the customer

charge to be consistent with the current customer charge of \$0.03/day.³ The results of this rate comparison are shown in Figure A - 3 and Figure A - 4 below.

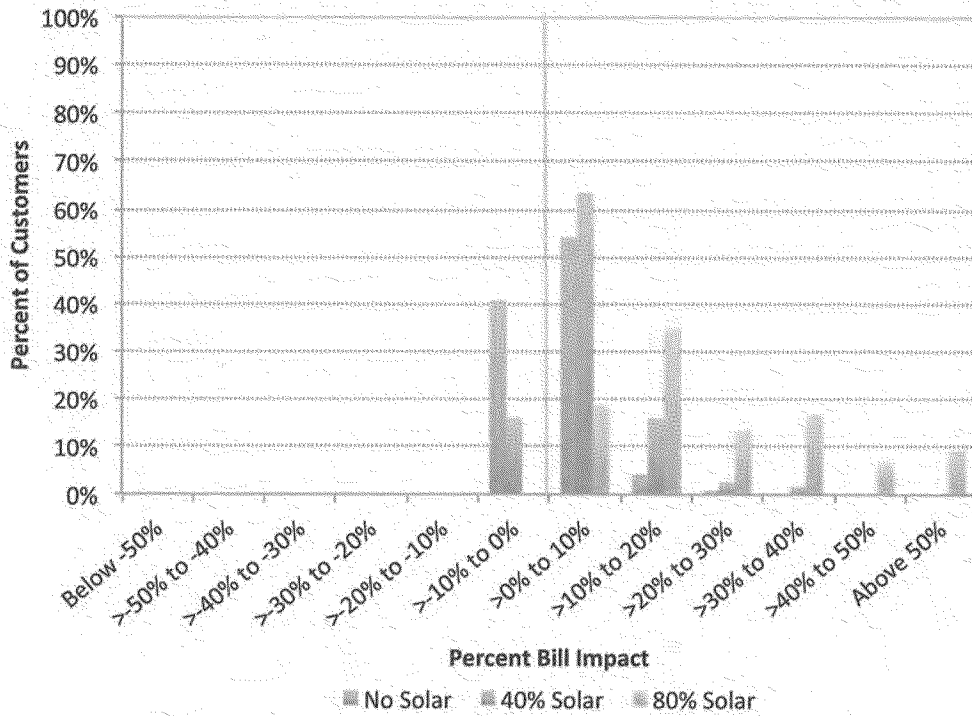
Figure A - 3: Bill Impacts of SCE Interim 3-Tier Rate with \$5 Customer Charge in Relation to SCE Interim 3-Tier Rate with \$0.91 Customer Charge, Coastal Customers



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
SCE Interim, \$0.91	\$98.45	\$55.09	\$14.35
SCE Interim, \$5.00	\$98.95	\$57.18	\$17.94
Average Increase	\$0.50	\$2.09	\$3.59
% Increase	1%	4%	25%

³ See Appendix B, Figure B-1 for SCE model inputs and sample rate.

Figure A - 4: Bill Impacts of SCE Interim 3-Tier Rate with \$5 Customer Charge in Relation to SCE Interim 3-Tier Rate with \$0.91 Customer Charge, Inland Customers



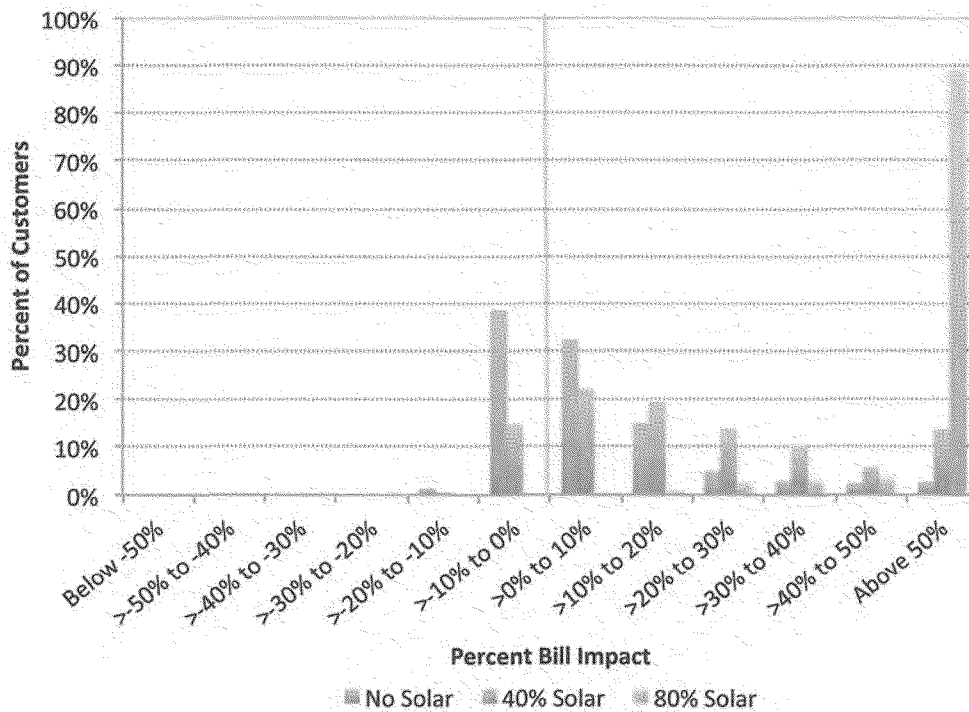
Average Monthly Bills			
	No Solar	40% Solar	80% Solar
SCE Interim, \$0.91	\$115.73	\$65.17	\$20.32
SCE Interim, \$5.00	\$115.60	\$66.89	\$23.69
Average Increase	\$(0.13)	\$1.72	\$3.37
% Increase	0%	3%	17%

As shown in Figure A - 3 and Figure A - 4, the majority of the impacts from SCE’s proposal for an interim 3-tier rate with \$5 customer charge are the result of the customer charge increase. This analysis demonstrates how sensitive NEM value is to even a modest increase in fixed customer charges. When a similar analysis is conducted for SCE’s proposed TOU rate with a \$15-\$20 customer charge, the impacts are more severe.

In order to separate the impacts of SCE’s proposal to move to a cost-based TOU rate and SCE’s proposal to include a \$15-\$20 demand differentiated customer charge, we ran SCE’s bill impact calculator using the same assumptions SCE uses to create its TOU, \$15-20 customer charge

proposal, but modified the customer charge to be consistent with the current customer charge of \$0.03/day.⁴ We then compared the impact of moving to SCE's TOU \$15-\$20 customer charge proposal with the resulting rate. The SCE data relied on in the analysis was aggregated monthly. As a result we were unable to determine the appropriate hour of solar generation to apply to SCE's maximum demand in order to calculate the maximum demand net of the solar generation. In this analysis we conservatively assumed that all solar customers would have a maximum demand of less than 5 kW and would be charged a fixed fee of \$15/month. Figure A - 5 and Figure A - 6 below show the results of this analysis.

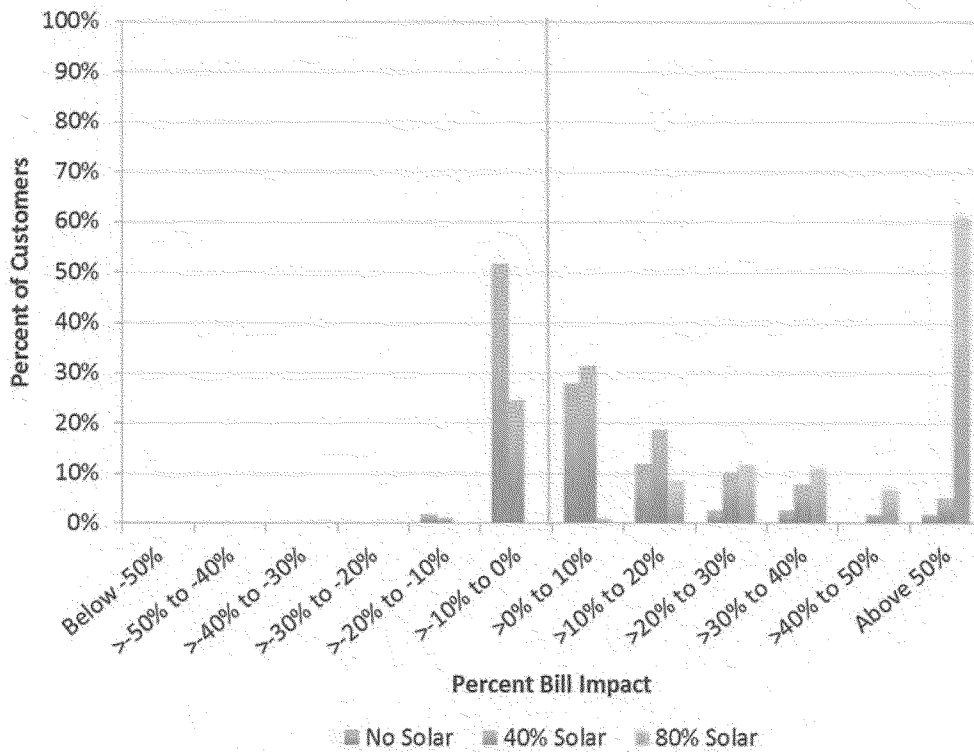
Figure A - 5: Bill Impacts of SCE TOU Rate with \$15-20 Customer Charge in Relation to SCE TOU Rate with \$0.91 Customer Charge, Coastal Customers



⁴ See Appendix B, Figure B-2 for SCE model inputs and sample rate.

Average Monthly Bills			
	No Solar	40% Solar	80% Solar
SCE TOU, \$0.91	\$93.57	\$49.11	\$10.38
SCE TOU, \$15-20	\$93.76	\$54.28	\$22.33
Average Increase	\$0.19	\$5.17	\$11.95
% Increase	0%	11%	115%

Figure A - 6: Bill Impacts of SCE TOU Rate with \$15-20 Customer Charge in Relation to SCE TOU Rate with \$0.91 Customer Charge, Inland Customers



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
SCE TOU, \$0.91	\$118.08	\$67.59	\$20.77
SCE TOU, \$15-20	\$115.87	\$71.11	\$31.77
Average Increase	\$(2.22)	\$3.52	\$11.01
% Increase	-2%	5%	53%

As shown in Figure A - 5 and Figure A - 6, inclusion of a \$15 customer charge for solar customers creates a large negative impact on customers in the sample with large solar installations. In the coastal area customers with large solar installations will see average bill increases of 115%.

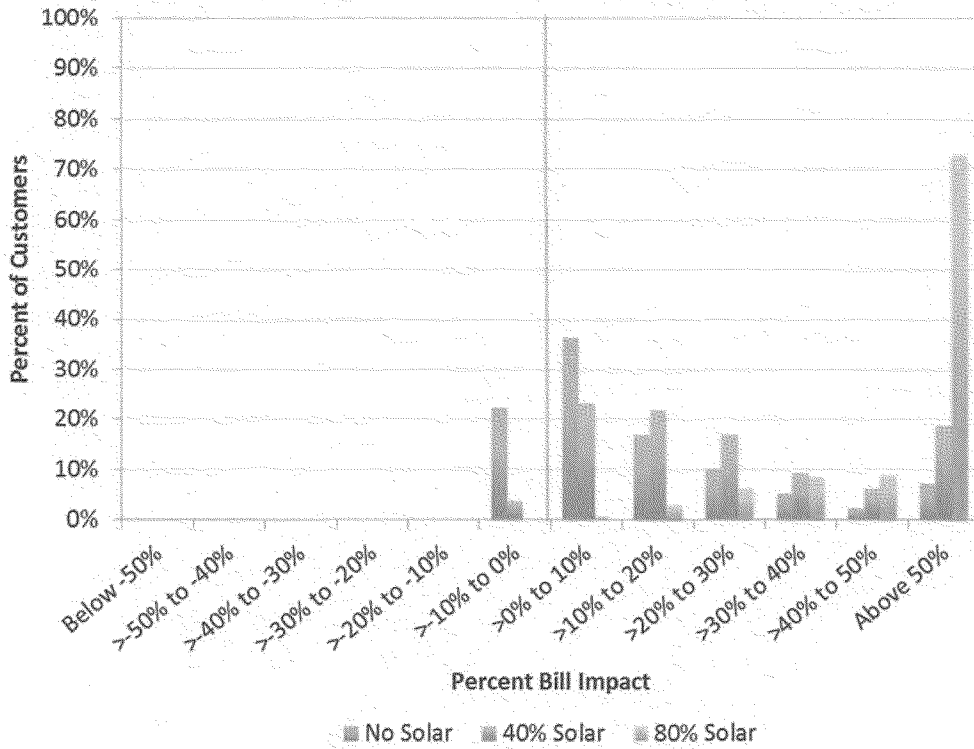
B. PG&E's Proposed Customer Charges

PG&E's residential rates do not currently have any fixed charges. In its rate summary, PG&E indicates that its proposal includes a \$10 monthly customer charge.⁵ In order to examine the impact of adding a \$10 customer charge separate from PG&E's proposal to create a 2-tier rate with a 20% tier differential, we ran PG&E's bill impact calculator using the same assumptions PG&E uses to create its proposed rate, modified to exclude a customer charge.⁶ The results of this analysis are shown in Figure A - 7 and Figure A - 8 below.

⁵ Bill Impact Calculator Results of Pacific Gas and Electric Company in R.12-06-013, Attachment 1, Summary p. 1.

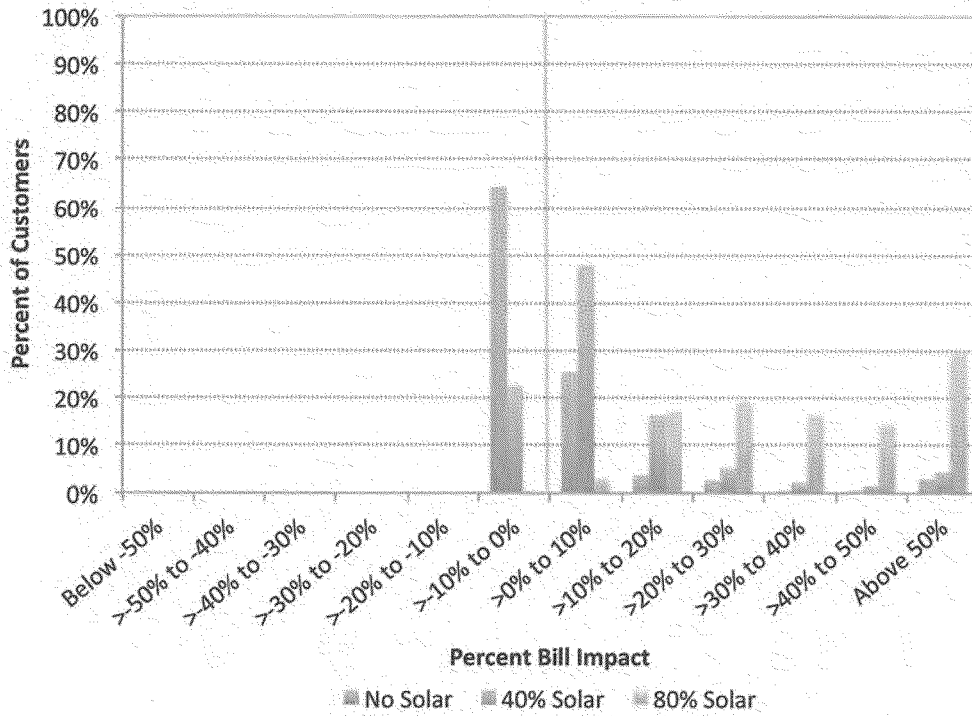
⁶ PG&E's July 1 Bill Impact Calculator Results filing presented PG&E's proposal based on May 1, 2013 rates. The publicly available bill impact calculator did not include functionality to base rate proposals on May 1, 2013 rates. To approximate PG&E's proposal and provide a comparison, IREC has calculated a similar proposal based on the July 1, 2012 rates that underlie the publicly available bill impact calculator model. See Appendix B, Figure B-3 and Figure B-4 for PG&E model inputs and sample rates.

Figure A - 7: Bill Impacts of PG&E Proposed Rate with \$10 Customer Charge in Relation to PG&E Proposed Rate without Customer Charge, Coastal Customers



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
PG&E Proposal, no FC	\$66.60	\$38.36	\$12.98
PG&E Proposal, \$10 FC	\$69.43	\$44.21	\$21.57
Average Increase	\$2.83	\$5.85	\$8.59
% Increase	4%	15%	66%

Figure A - 8: Bill Impacts of PG&E Proposed Rate with \$10 Customer Charge in Relation to PG&E Proposed Rate without Customer Charge, Inland Customers



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
PG&E Proposal, no FC	\$120.21	\$69.86	\$23.74
PG&E Proposal, \$10 FC	\$117.23	\$72.27	\$31.13
Average Increase	\$(2.98)	\$2.41	\$7.39
% Increase	-2%	3%	31%

The results of the PG&E analysis are similar to the analysis shown above for SCE’s proposed \$5 customer charge. Customers with large installations will see the largest negative impact from addition of a \$10 monthly charge and all solar customers will be disproportionately impacted by the addition of the fixed fee.

II. TOU Impact Analysis

Our analysis of the various TOU rates proposed by parties including PG&E, SCE, DRA, SEIA/Vote Solar, Sierra Club, and NRDC show that the results on NEM value are mixed.

PG&E and SCE chose to use different TOU definitions in their bill impact calculators. SCE defined its TOU periods consistent with its industrial tariff,⁷ while PG&E defined its TOU periods consistent with its residential TOU tariff, including the limited winter part-peak period described in the body of the comments.⁸ While we are unable to modify these definitions, we have been able to approximate such an analysis by comparing the NEM impacts of similar TOU proposals across the two utilities.

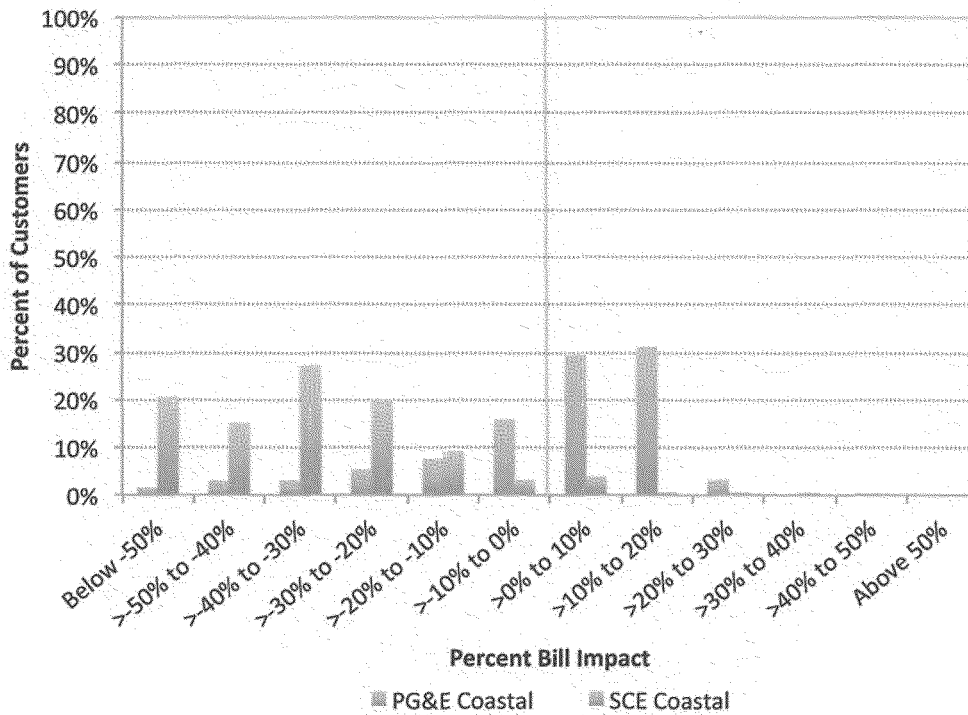
DRA's proposal followed consistent methodology to generate an illustrative end-state TOU rate for both PG&E and SCE.⁹ A comparison of the impact of these rates across both utilities demonstrates that rate impacts are mixed both across climate zones and utilities. The results are shown for customers with large solar installations in Figure A - 9 and Figure A - 10 below.

⁷ SCE Residential Rate OIR Rate Design and Bill Impact Analysis Model, User Reference Manual Updated March 25, 2013, p. 14.

⁸ PG&E RROIR Rate Design and Bill Impact Analysis Model User Guide, Version 9.0, March 26, 2013, p. 8.

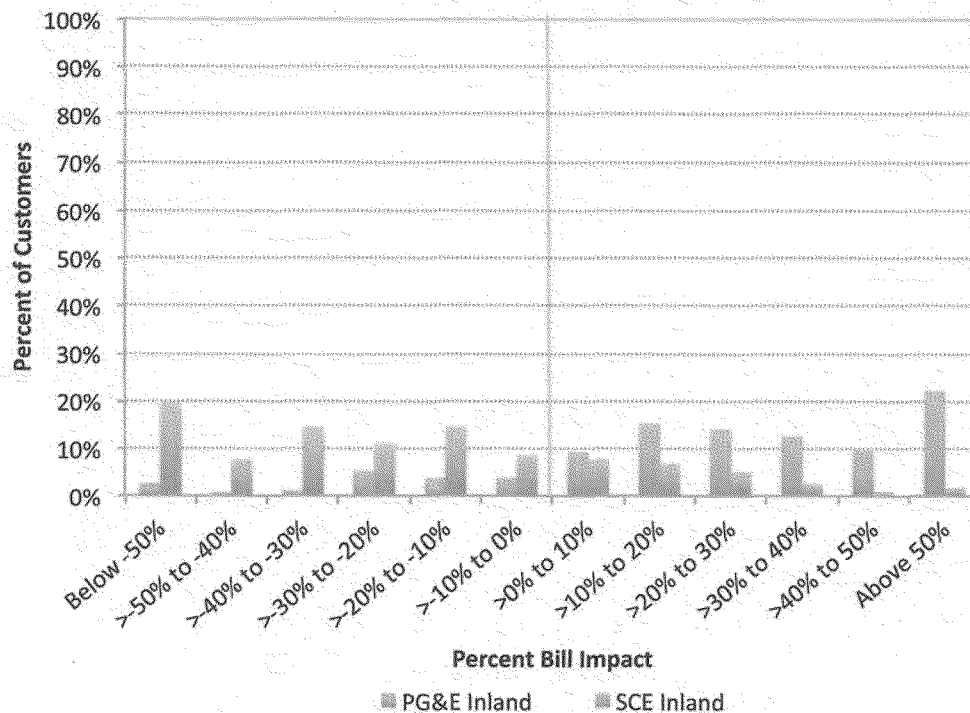
⁹ DRA Proposal, Appendix A, May 20, 2013.

Figure A - 9: Bill Impacts of DRA TOU Rate in Relation to PG&E and SCE Current Rates, Large Solar Coastal Customers



Average Monthly Bills		
	PG&E	SCE
Current	\$13.36	\$13.34
DRA TOU	\$12.66	\$8.80
Average Increase	\$(0.70)	\$(4.53)
% Increase	-5%	-34%

Figure A - 10: Bill Impacts of DRA TOU Rate in Relation to PG&E and SCE Current Rates, Large Solar Inland Customers



Average Monthly Bills		
	PG&E	SCE
Current	\$22.79	\$19.69
DRA TOU	\$26.89	\$14.78
Average Increase	\$4.11	\$(4.91)
% Increase	18%	-25%

The disparate impacts shown in Figure A - 9 and Figure A - 10 demonstrate that NEM value may be very sensitive to TOU rate design and should be approached with caution for NEM customers. It is possible that a TOU definition like PG&E's that places 99% of winter solar generation in the off-peak period may be driving the relative negative impacts on PG&E NEM customers in the model.