

IREC Modeling Results for SDG&E Proposals

The IREC SDG&E Model

In support of the Commission's question regarding the impact that party rate design proposals will have on the value of NEM facilities, IREC has developed a bill impact model for NEM customers in each of the three IOU service areas. The models for PG&E and SCE were described in detail in IREC's opening comments filed on July 12, 2013. On July 15, 2013, in response to a request from the Commission, SDG&E filed a supplemental response to the ALJ's Ruling Ordering Parties to Submit Additional Information for Rate Design Proposals, Confirming Workshop Date, and Setting Forth Format for Comments.¹ In that filing SDG&E provided a series of illustrative rates that could be analyzed in the IREC model. Based on that additional information, IREC has analyzed the impact that SDG&E's proposed rates would have on the value of NEM.

IREC obtained the customer load data underlying the SDG&E bill impact calculator from SDG&E via a confidential data request response. In a similar manner to the IREC models for the PG&E and SCE customer samples, IREC matched site-specific solar data from the National Renewable Energy Laboratory (NREL)² to the SDG&E customer load data to approximate solar load profiles with varying sizes of solar installation. Because the NREL hourly solar data was only available for a single point in SDG&E's service area, IREC limited the SDG&E NEM modeling to a single climate zone, SDG&E's coastal climate zone. The data received from SDG&E was filtered for the coastal climate zone customers taking service under SDG&E's Schedule DR for whom a complete year's worth of monthly determinants (including time-of use elements) were available. The data was weighted according to SDG&E's indicated customer weights.³

¹ SDG&E Supplemental Response, July 15, 2013.

² IREC obtained site-specific solar load profiles for various locations around California using the NREL PVWatts site Specific Data Calculator (Version 1) available on NREL's website at: <http://www.nrel.gov/rredc/pvwatts/>

³ SDG&E provided IREC with a complete confidential version of the rate impact calculator, which allowed for full analysis of the customer sample and an indication of the sample weighting methodology. Inclusion of customer weights for the SDG&E

In order to approximate a range of possible solar facilities, IREC scaled the NREL solar load profile to model a small NEM facility and a large NEM facility. IREC modeled the small NEM facility by scaling the solar installation for each customer such that approximately 40% of that customer's annual load would be provided by on-site solar generation; the large NEM facility was modeled by scaling the solar installation for each customer such that 80% of that customer's annual load would be provided by on-site solar generation. The scaled NREL solar data was then overlaid on the TOU customer sample data from the utilities to approximate a NEM customer sample. In order to simplify bill impact calculations, our analysis does not address any net surplus compensation that a solar customer may be eligible to receive.

Results of SDG&E Illustrative Rates

SDG&E has made clear that the rates provided in its July 15th filing do not represent its proposal for an optimal rate design but rather illustrate “the kinds of transition steps that could be taken in the future together with associated illustrative bill impacts that could result from individual components of SDG&E’s Optional Rate Design Proposal.”⁴ Given this understanding, IREC believes it is useful to examine the NEM bill impacts of SDG&E’s illustrated rates in a similar manner to our analysis of the proposals by SCE and PG&E.

The illustrative rates provided by SDG&E in its supplemental filing include transitional and end-state rates for a non-TOU tiered rate structure transitioning to a flat rate with an increasing basic service fee and a TOU rate structure that transitions away from tiered rates to TOU-only with an equivalent basic service fee element. SDG&E additionally illustrates both proposals with a flat basic service fee and a demand-differentiated basic

customer sample was shown to have a significant impact in the results of the model. Less information was available for the SCE and PG&E customer samples for which customer weights were shown to have an insignificant impact on the results and were not included in the final IREC model.

⁴ SDG&E Supplemental Response, July 15, 2013, p. 3.

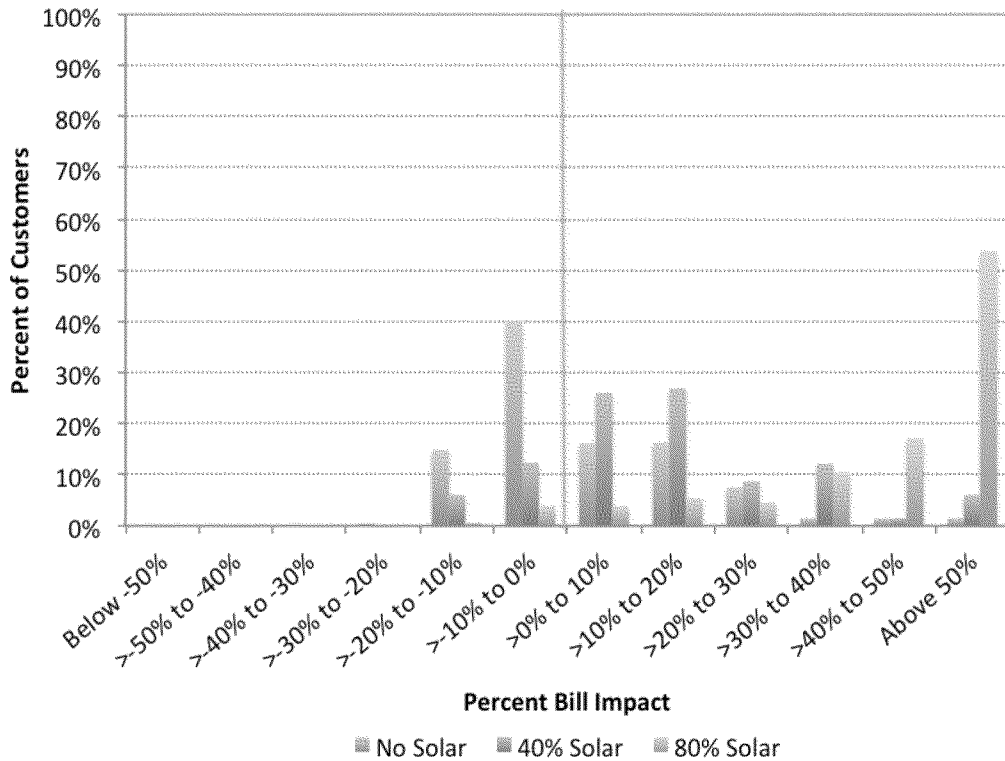
service fee.⁵ Due to the limitations of the data, IREC was not able to analyze the bill impacts of the demand-differentiated basic service fee.

SDG&E's illustrated rates include a fixed monthly customer charge that rises from \$7.38 to \$38.42 for both an increasing block rate and time-of use rate. In order to assess the impact of SDG&E's illustrated rates, we examined the impact of moving from the current rate structure to SDG&E's Step 1 rates for both the tiered transitional rates and the TOU transitional rates. The results of this analysis are shown in Figure A-1 and Figure A-2 on the following pages.

The NEM customer impact of SDG&E's Step 1 transition rates is largely driven by the inclusion of the \$7.38 monthly customer charge. As shown in Figure A-1 and Figure A-2, and in the analysis for SCE and PG&E in IREC's Opening Comments, even a relatively modest customer charge like SDG&E's Step 1 customer charge will have significant and adverse impacts on the value of NEM.

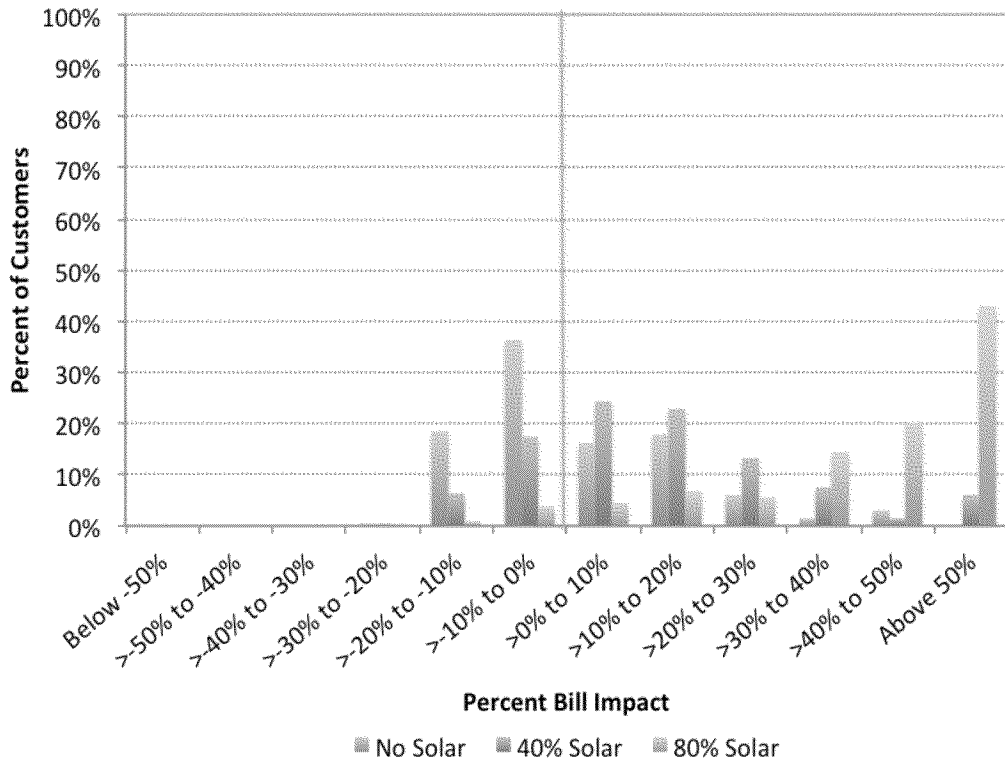
⁵ SDG&E Supplemental Response, July 15, 2013.

Figure A-1: Bill Impacts of SDG&E Step 1 Tiered Transitional Rate with \$7.38 Customer Charge in Relation to Current Rate



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current Rates	\$137.16	\$69.08	\$15.79
SDG&E Step 1 TOU	\$127.32	\$70.33	\$20.92
Average Increase	\$(9.84)	\$1.25	\$5.13
% Increase	-7%	2%	33%

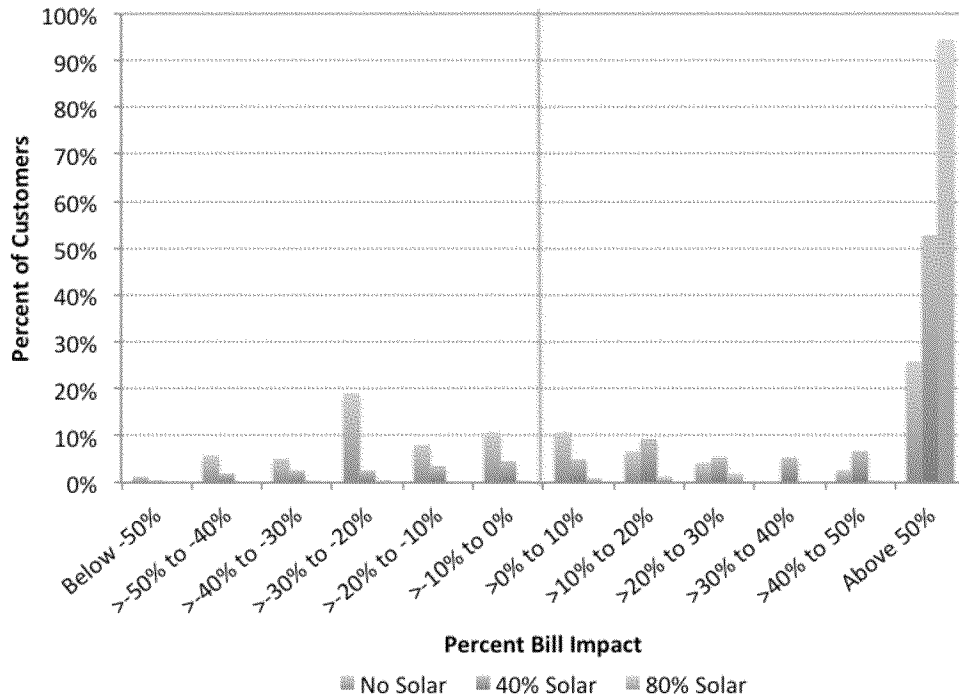
Figure A-2: Bill Impacts of SDG&E Step 1 TOU Transitional Rate with \$7.38 Customer Charge in Relation to Current Rate



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current Rates	\$137.16	\$69.08	\$15.79
SDG&E Step 1 TOU	\$127.32	\$69.26	\$20.23
Average Increase	\$(9.84)	\$0.18	\$4.44
% Increase	-7%	0%	28%

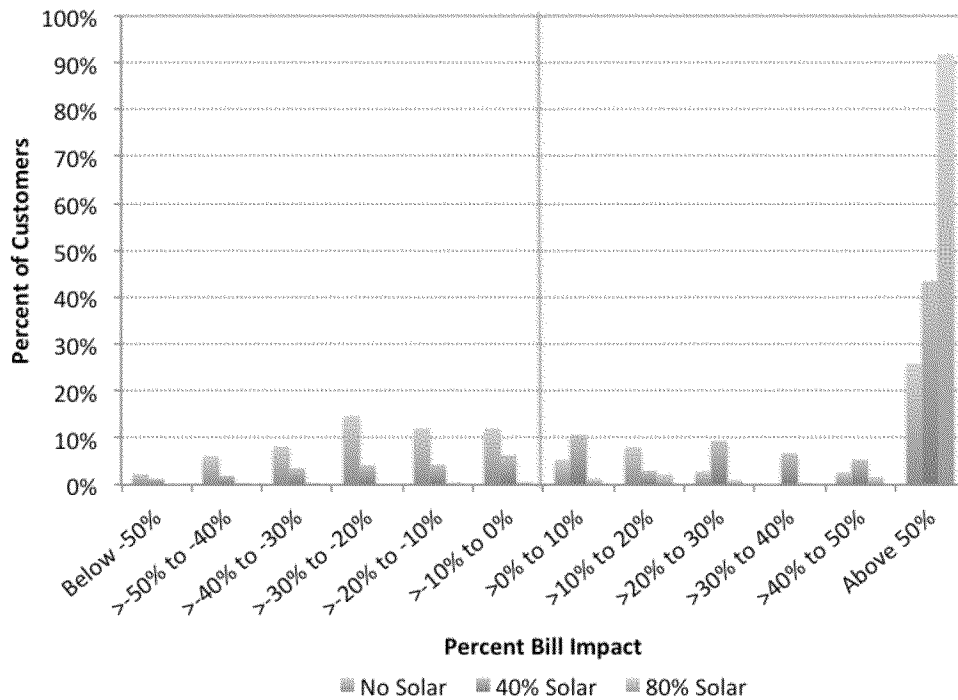
SDG&E’s illustrative rates include 5 steps in total with an increase to the customer charge in each step until a final Step 5 monthly customer charge of \$38.42. The impacts of implementing SDG&E’s Step 5 rates are shown in Figure A-3 and Figure A-4 below.

Figure A-3: Bill Impacts of SDG&E Step 5 Flat Rate with \$38.42 Customer Charge in Relation to Current Rate



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current Rates	\$137.16	\$69.08	\$15.79
SDG&E Step 5 Flat	\$114.93	\$82.08	\$47.79
Average Increase	\$(22.22)	\$12.99	\$32.01
% Increase	-16%	19%	203%

Figure A-4: Bill Impacts of SDG&E Step 5 TOU Rate with \$38.42 Customer Charge in Relation to Current Rate



Average Monthly Bills			
	No Solar	40% Solar	80% Solar
Current Rates	\$137.16	\$69.08	\$15.79
SDG&E Step 5 TOU	\$111.61	\$74.66	\$45.30
Average Increase	\$(25.55)	\$5.57	\$29.51
% Increase	-19%	8%	187%

IREC’s analysis shows that, consistent with our findings for the \$10 customer charge proposed by PG&E and the \$5-\$20 monthly customer charges proposed by SCE, SDG&E’s illustrated customer charges will have a significant and adverse impact on the value of NEM. SDG&E’s illustrative end-state customer charge is substantially larger than the customer charge proposals put forth by SCE and PG&E. SDG&E’s illustrated end-state customer charge results in the most significant negative impacts on the value of NEM. As shown in Figure A-3 and Figure A-4, IREC finds that SDG&E’s Step 5 rates with a \$38.42 customer charge would increase bills for customers with large solar installations by an average of roughly 200%; with over 90% of customers seeing bills that would more than double if such a large fixed charge were imposed.