

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking on the Commission's
Own Motion to Conduct a Comprehensive
Examination of Investor Owned Electric Utilities'
Residential Rate Structures, the Transition to Time
Varying and Dynamic Rates, and Other Statutory
Obligations.

Rulemaking 12-06-013
(Filed June 21, 2012)

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

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Pursuant to the Administrative Law Judge's March 19, 2013 Ruling Requesting Residential Rate Design Proposals (March 19 Ruling), and subsequent rulings modifying the procedural schedule for filing deadlines, the Interstate Renewable Energy Council, Inc. (IREC) respectfully submits its comments on the impacts of parties' residential rate design proposals on existing and prospective net energy metering (NEM) customers. In these comments, IREC provides its analysis of bill impacts on NEM customers from the various rate design proposals put forward by parties, with a particular focus on the proposals made by Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE), and the Division of Ratepayer Advocates (DRA).

The purpose of these comments is to provide the Commission with a quantitative and factual basis to understand the impacts of rate design proposals on the substantial number of California customers that have come to rely on NEM to support capital investments in renewable distributed generation. This proceeding began with an initial process, including several workshops and public participation by parties, through which the three investor-owned utilities (IOUs) developed public bill impact calculators for use by parties in analyzing their rate proposals. However, only SCE provided a tool that enables parties to conduct limited analysis of the impact of different rate designs on a sample of NEM customers. Given the lack of a

comprehensive NEM-focused analytical tool from the IOUs, IREC developed an independent NEM impact calculator¹ and has examined the SCE NEM plug-in tool in order to assist the Commission and other Parties in the assessment of how various rate design proposals will impact the value of NEM facilities.

In Section I, IREC explains why it is appropriate for the Commission to consider the impacts of proposals on NEM customers as it considers broader concerns related to the appropriate rate design for all residential customers of California's IOUs. In Section II, IREC gives an overview of its methodology and rate impact model. In Section III, IREC provides a summary of the results of its analysis of rate proposals. In the attached appendices, IREC provides its more detailed analysis of rate components that impact the value of NEM to customers with on-site generation who are participating in the NEM program.

IREC did not submit a rate design proposal, but it has put forward an innovative pilot proposal that presents a potential win-win approach to address the CARE subsidy. IREC's CleanCARE proposal, put forward in our May 29, 2013 filing concurrent with other parties' rate design proposals, presents a new CARE rate option that would continue to provide low income and medical baseline customers access to affordable electricity while providing a direct connection for CARE participants and renewable energy in support of state energy goals. As IREC described in its proposal, a portion of the CARE subsidy would be allocated to the development of shared renewables coupled with energy efficiency upgrades and, possibly, demand response and energy storage. IREC views the CleanCARE option as a means to encourage energy efficiency improvements and investments in distributed generation while putting CARE customers in a better or equivalent position relative to the status quo. IREC has invited dialogue from parties on this proposal and encourages parties and the Commission to consider the viability of this proposal in supporting several of the key principles identified in this Order Instituting Rulemaking (OIR).²

¹ IREC welcomes the opportunity to share its calculator with the Commission.

² Administrative Law Judge's March 19, 2013 Ruling Requesting Residential Rate Design Proposals (March 19 Ruling), Attachment A-1, (Principle #1): "Low-income and medical baseline customers should have access to enough electricity to ensure basic needs (such as health and comfort) are met at an affordable cost."; (Principle #7): "Rates should generally avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals."

Summary of Recommendations and Findings of IREC's Analysis

IREC's efforts in modeling the NEM value impact of the various party proposals have highlighted several important issues in residential rate design.

- Fixed charges have a disproportionately negative impact on NEM value and should be avoided.
- NEM value is highly sensitive to time-of-use (TOU) period definition. As residential rates transition to a time-differentiated structure, the Commission should closely monitor how TOU periods will be defined and should ensure that TOU period definitions do not undercut the value of NEM.
- Any major changes to the residential rate structure should be well defined and transitioned to over a reasonable period of time that will allow all customers (including NEM customers) to adapt to the new rate structure.

IREC's modeling efforts are intended to be a collaborative process and we welcome input from other parties that may assist in informing or refining the impact assessment of proposed rate structures on the value of NEM facilities.

I. Role of NEM in this Proceeding

This OIR is an opportunity for parties to suggest “big picture” changes to the existing residential rate structure that more closely reflect cost-causation and marginal costs, but IREC notes that all proposals must still be balanced according to the Commission's long-standing principles of rate making. This process necessarily includes consideration of whether consequences of a particular rate design have undesirable impacts on state policy goals. IREC's analysis is focused solely on the consequences of rate proposals on state policy goals related to the promotion of renewable distributed generation, the essential intent of the NEM statute.³ In this proceeding, the ability of NEM to encourage customers to invest in distributed generation is an important policy objective that must be balanced against the desire to create “optimal” or “perfectly efficient” rate design based purely on cost-causation principles.

The importance and relevance of NEM impacts in this proceeding is well established.

³ See Pub. Util. Code § 2827.

Consideration of these impacts was directly recognized in the OIR and were subsequently made more precise in the ALJ's March 19 Ruling, which required parties to explain how their proposals would "affect the value of net energy metered facilities for participants and non-participants compared to current rates."⁴ In the rate proposals filed on May 29, 2013, however, most parties did not directly address the potential rate impacts on NEM customers, as requested in the March 19 Ruling.⁵ Through these comments, IREC directly responds to this directive to ensure that any negative impacts of parties' proposals on NEM customers are well documented and represented in the record.

There are several compelling reasons why it is appropriate and important for the Commission to consider the impacts on NEM customers in any final recommendations or decision made through this proceeding. First, it is axiomatic that the value of NEM to residential customers is linked to rate design. Many customers decide to invest in and install on-site generation through NEM based on the expectation that they will receive sufficient value through bill credits (i.e., avoided purchases of kWhs) to exceed the initial financial obligation of installation over a reasonable period of time. Solar installers and service providers typically provide an estimate of expected savings, based on historic usage at a residence and the prevailing utility rates, and these savings impact the payoff period of the system (i.e., the point at which the customer theoretically breaks even by investing in on-site generation). Accordingly, the effectiveness of NEM policy in encouraging customer investments in clean energy is highly sensitive to the underlying rate structure and the corresponding ability of customers to derive sufficient value to justify the financial obligations of installation.

Second, it is particularly important for the Commission to consider the scale of participation in the NEM program and the fact that NEM is an indispensable part of California's robust residential solar market and its status as a national leader. While many factors contribute to the vitality of a solar market, California has one of the nation's best⁶ and most long-standing⁷

⁴ March 19 Ruling, Attachment A-2.

⁵ March 19 Ruling, Attachment A-2. at A-2 (Attachment A) (asking parties to explain how their proposals would "affect the value of net energy metered facilities for participants and non-participants compared to current rates.").

⁶ California receives an "A" letter grade for its net metering policies from the annual publication *Freeing the Grid: Best Practices in State Net Metering Policies and Interconnection Procedures*, a joint publication of IREC, the Vote Solar Initiative, and the Network for New Energy Choices.

NEM policies. Paired with this Commission’s historic emphasis on preserving a conservation price signal in rate design and the Commission’s program to provide direct incentives to customers through the California Solar Initiative, NEM has been an essential driver of California’s solar market success. With the CSI incentive for residential customers meaningfully concluded, NEM policy and rate design will play an increasingly important role in supporting this important policy objective. Accordingly, IREC agrees with the Commission that consideration of rate impacts on NEM customers is a valid and appropriate factor in developing a framework for residential rates going forward. It is important to preserve the vitality of the program, as NEM has significant headroom to continue to grow California’s solar market well into the future. As demonstrated in Table 1, the NEM program can still accommodate greater than three-fold increases in installed capacity for each IOU under the statutory program cap.

Table 1. Current Overall Installed NEM Capacity and Progress Toward the NEM Program Cap⁸

IOU Data as of 3/31/13	5% of Aggregate Customer Peak Demand	Current Installed Capacity (CEC AC)	Total Remaining Capacity	Progress toward Cap	Number of Installations
PG&E	2408 MW	791 MW	1617 MW	1.64%	80,032
SCE	2240 MW	536 MW	1705 MW	1.20%	Not Reported
SDG&E	606 MW	170.1 MW	436 MW	1.41%	Not Reported

NEM customers now represent a significant number of California ratepayers that have incurred a substantial financial obligation to participate in the program. According to the Go Solar California website, and as illustrated in Table 2, there are just under 120,000 installed or pending applications for residential CSI incentives.⁹ It is commonly understood and well

The 2012 edition of *Freeing the Grid* is available at <http://freeingthegrid.org/wp-content/uploads/2013/02/FTG2012.pdf>.

⁷ California’s net metering program was first passed into law by Senate Bill 656 (1995) (Alquist), and became effective in 1996.

⁸ This data is available on the NEM web page on each of the IOUs’ websites.

⁹ See http://www.californiasolarstatistics.ca.gov/reports/agency_stats/ (last visited 7/11/13).

established that nearly all CSI projects take service under a NEM tariff.¹⁰

Table 2. Number of Residential CSI Applications and Total Capacity of “Installed” Systems (as of July 10, 2012).

Program Administrator	No. of Applications for “Installed” Residential CSI Systems	“Installed” Residential Capacity (MW)	No. of Applications for “Pending” Residential CSI Systems	“Pending” Residential Capacity (MW)
PG&E	53,598	262.5	4,272	22.5
SCE	38,334	192.9	9,357	53.3
CCSE	13,594	66.9	592	3.4

The loss of value for this large number of NEM customers must be considered when determining whether a given rate design is just and reasonable. IREC here echoes the sentiment of Vote Solar and SEIA that customers’ long-term investment in renewable distributed generation should be respected.¹¹

Since the wisdom and the extent of California’s NEM program are not up for debate in this proceeding, IREC’s consideration of NEM customer rate impacts is consciously narrow to ensure that its analysis is within scope. In contrast, considerations of cost-causation and the costs and benefits of NEM are already being addressed in other processes at the Commission, and involve utility-specific variables that would unnecessarily complicate the Commission’s statewide consideration of approaches to residential rate design. Simply put, the Commission, through this proceeding, has not been attempting to build and does not currently have an adequate record to determine that any new charges that negatively impact NEM customers would be cost-justified. For purposes of this proceeding, and to give weight to the impacts of parties’ proposals on NEM customers, IREC suggests that what is important for the Commission is to

¹⁰ According to the 2013 CSI Program Assessment, only 6% of all customer-sited solar (i.e., solar installed on the customer’s side of the meter) is not engaged in NEM. While there is no breakdown by customer class in this assessment, it suggests that an overwhelming majority of residential CSI projects are necessarily taking service under a NEM tariff. *California Solar Initiative Annual Program Assessment*, at p. 6 (June 2013), available at http://www.cpuc.ca.gov/PUC/energy/Solar/2013_Annual_Program_Assessment.htm.

¹¹ *Rate Design Proposal of the Solar Energy Industries Association and the Vote Solar Initiative* (Vote Solar/SEIA Proposal) at p. 7 (May 29, 2013).

ensure that rate designs developed in this proceeding do not unnecessarily inhibit the vitality of the NEM residential market. Put another way, the Commission should choose the rate design that accomplishes the overarching goals of improving equity and simplicity in rates while imposing the least amount of harm possible on residential NEM customers.

Lastly, IREC stresses that under any of the parties' proposals, it is critically important for the Commission to recommend a phased implementation of any structural changes to residential rate design. NEM customers, and the solar industry, have become accustomed to operating under the current regulatory environment and many aspects of the current rate design are core assumptions in customers' decisions to invest in and install on-site generation. IREC encourages the Commission to proceed deliberately, mindful of the need to protect customers from being whipsawed by abrupt regulatory changes and loss of value in their NEM systems.

II. Overview of IREC's Modeling Efforts

The scope of IREC's analysis of parties' proposals is not intended to be exhaustive or comprehensive in addressing each discrete proposal, but it is intended to fairly represent the common elements that were proposed and to give the Commission quantifiable values associated with these components. In support of our evaluation of the NEM value impact of different rate designs, IREC examined the proposals of each party in the proceeding that provided sufficient proposal detail for use in the model. The proposals analyzed include proposals from PG&E, SCE, DRA, the Utility Reform Network, the Natural Resources Defense Council, SEIA/Vote Solar, and the Sierra Club. These proposals addressed issues related to transition to TOU rates, potential modifications to the existing number of tiers and tier differentials, and the inclusion or exclusion of fixed customer service charges. The IREC modeling results illustrate the common themes that parties employed in their rate design proposals.

Given the broad array of results from the IREC Modeling, we have chosen to distill the analysis presented in these comments in order to illustrate the rate design issues most likely to have a large impact on the value of NEM facilities. While each proposal is not addressed specifically, these comments represent the results of the full IREC analysis.

II. IREC’s Analysis of Impacts on NEM

A. IREC’s Methodology and Rate Impact Model

In order to assess the impact of rate design proposals on NEM facilities, IREC developed a spreadsheet model to calculate the range of bill impacts NEM customers could be expected to experience under different rate design proposals. Since the utilities do not yet have extensive or complete TOU data for NEM customers, IREC relied on the customer sample data underlying the utilities’ bill impact calculators and a publicly available site-specific solar load profile from the National Renewable Energy Laboratory (NREL).¹² In order to approximate the bill impacts on NEM customers, IREC matched site-specific solar data with the utility’s customer sample data for the same geographic area. Because the hourly NREL data is limited, IREC chose to examine two diverse geographic areas from PG&E and two from SCE, each representing a coastal climate zone and an inland climate zone. These are summarized in Table 3 below.

Table 3: Summary of Geographic Areas in IREC Model

Utility	Climate Zone	PVWatts Data Location	Corresponding Customer Area	Utility Data Sample Size
PG&E	Coastal	San Francisco	Baseline Territory T	1,078
	Inland	Fresno	Baseline Territory R	270
SCE ¹³	Coastal	Long Beach	Baseline Region 8	710
	Inland	Daggett	Baseline Region 14	118

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

¹² 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/>

¹³ Our analysis excluded SCE data for customers in baseline regions 8 and 14 that did not have a complete year’s worth of data. SCE provided its customer data to IREC under a non-disclosure agreement.

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. Obviously, this analysis was constrained by the data available and by the limited set of parameters that could be modified in the utility bill impact calculators. Of particular concern is the lack of functionality for calculation of revenue neutral rates under different TOU period definitions; this is discussed in more detail below.

The SCE NEM Plug-In

In conjunction with its bill impact calculator, SCE developed a tool for limited analysis of the impact of proposals on NEM customers—the “NEM Plug-in.” The NEM Plug-in uses customer-billing data to estimate bill impacts for a sample of 992 SCE NEM customers.¹⁴ The customers in SCE's sample have an average monthly consumption after solar generation that is nearly 40% higher than the broader SCE sample, resulting in average bills that are almost 70% higher than the broader SCE sample.¹⁵

While it is true that current NEM customers tend to be larger consumers, it is not clear that the sample provided by SCE provides a useful indicator of the impact rate proposals may have on the value of NEM, as the Commission is seeking to examine in this proceeding. If in the future NEM adoption spreads to lower-consumption level customers and if the residential rate structure undergoes fundamental changes to move away from a steep increasing block structure to time-differentiated rates or a more gradual increasing block, it is quite likely that the NEM customer base will not skew as dramatically towards the highest consuming customers.

In addition, SCE's NEM Plug-in allows for analysis of different tiered rate structures, but due to the lack of interval data, cannot assess the impact of TOU rate proposals. While we appreciate the efforts taken by SCE to develop the NEM Plug-in, its usefulness in assessing the impact of rate proposals on the value of future NEM facilities is limited. As a result we rely

¹⁴ SCE Response to IREC Data Request IREC-SCE-01, Questions 5a and 5c.

¹⁵ Calculation based on 563 average monthly kWh and \$97.90 average monthly bill for combined customer sample and 770 average monthly kWh and \$164.30 average monthly bill for SCE NEM sample. SCE Residential Rate Design Proposal, May 29, 2013 pp. 62 and A-4.

primarily on the IREC Model to approximate the expected impacts of rate proposals on NEM customers. Rather than relying on a small sample of existing NEM customers, the IREC model examines the impact of rate proposals on a broad range of potential NEM customers.

B. Inclusion of Fixed Charges Will Negatively Impact the Value of NEM Facilities

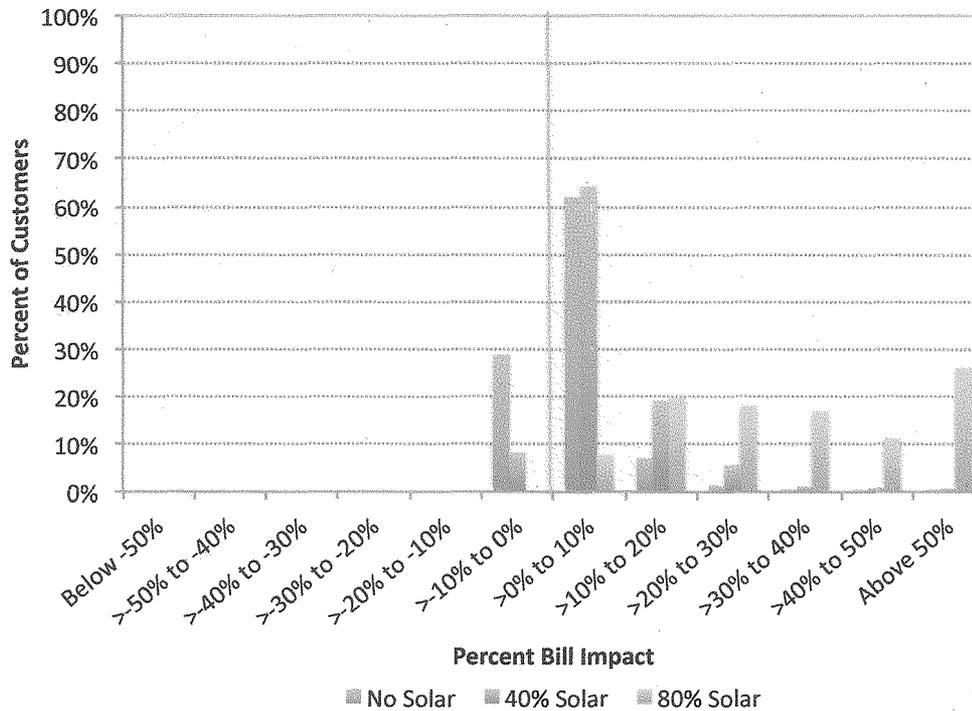
Several parties have proposed some level of fixed customer charges as part of their rate design proposals. These parties include: PG&E, SCE, SDG&E, the California Large Energy Consumers Association (CLECA), and the Distributed Energy Consumer Advocates (DECA). In our analysis we focus on the fixed charges proposed by PG&E and SCE, summarized in Table 4 below.

Table 4: PG&E and SCE Proposals for Fixed Charges

Utility	Summary of Rate	Proposed Fixed Charge
PG&E	Interim 4-Tier Rate	\$5.00/month
	Final 2-Tier Rate	\$10.00/month
	Opt-in TOU Rate	\$10.00/month
SCE	Interim 3-Tiered Rate	\$5.00/month
	Final 2-Tiered Rate	\$5.00/month
	Interim TOU Rate	\$5.00/month for demand <5kW \$10.00/month for demand >5kW
	Final TOU Rate	\$15.00/month for demand <5kW \$20.00/month for demand >5kW

Our analysis of the impact of PG&E and SCE’s fixed customer charge proposals indicate that even the more modest \$5 monthly customer charges will have a significant adverse effect on the value of NEM. For example, Figure 1 below shows the expected bill impacts on SCE coastal customers of the interim 3-Tier rate proposal with and without the proposed \$5/month customer charge. A detailed description of our preliminary fixed charge impact modeling and results are provided in Appendix A.

Figure 1: 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 Customers¹⁶



As shown in Figure 1, bill impacts of moving to a \$5/month customer charge vary dramatically between solar and non-solar customers with the customers that install large solar systems seeing the largest proportion of bill increases as a result of the rate change. As shown in Appendix A, examination of PG&E’s \$10/month customer charge proposal and SCE’s \$15-20 demand differentiated customer charge proposal only amplify this effect.

The reason for the disproportionate impact on solar customers is two-fold. First, creation of a fixed charge will lower the \$/kWh energy charges in a revenue neutral rate. This will result in NEM customers receiving less value for the kWh they sell to the grid. Second, the NEM customer will incur the fixed charge regardless of the level of consumption. This creates a relative disincentive for both conservation and installation of distributed generation because it devalues the cost of consumption.

In the utility proposals, which each include fixed customer charges, PG&E, SCE and SDG&E claim that fixed charges will promote movement of residential rates towards cost

¹⁶ The methodology and underlying rates for Figure 1 are described in detail in Appendix A.

causation, one of the goals defined in this proceeding.¹⁷ In its proposal, PG&E advocates for inclusion of everything from generation capacity costs, to transmission and distribution costs, to funding for low income, energy efficiency and other public purpose programs within the fixed charge.¹⁸ As TURN notes, PG&E's rate model even includes nuclear decommissioning costs in its category of charges that should be given fixed cost treatment.¹⁹ At current rates, this level of fixed cost treatment would result in over 50% of the costs of service being recovered from residential customers through a fixed customer charge.²⁰ While PG&E's proposal in this proceeding constitutes a somewhat more modest fixed charge, movement towards any level of fixed charges should be avoided.

As noted by SEIA and Vote Solar in their joint proposal²¹ and in the proposal of NRDC,²² few of the costs described by PG&E are truly fixed in the long-term. As demonstrated by the NEM impact analysis conducted by IREC, inclusion of fixed customer charges will create a disincentive for investments in distributed generation (DG).

C. NEM Facility Value is Sensitive to TOU Rate Structures and Definitions.

Customers with NEM facilities may be both consumers and generators of electricity at different times of the day. A customer with a rooftop solar PV system may be a net generator during the daylight hours and a net consumer after dark. Under the current NEM tariffs, customers' energy, both consumed and generated, is valued according to the otherwise applicable tariff. If the residential tariffs are modified to include TOU factors it can have a significant impact on the value of NEM.

One of the issues in this proceeding is to evaluate whether and how to implement TOU factors in residential rates.²³ To support this analysis the utilities developed bill impact calculators to evaluate revenue neutral TOU rates according to several parameters. Unfortunately the bill impact models do not include functionality to modify the TOU period definitions in their

¹⁷ PG&E Proposal May 29, 2013, Attachment 1 p. 43; SCE Proposal May 29, 2013, pp. 28-29; SDG&E Proposal May 29, 2013, p. 24; Scoping Ruling Attachment A, p. 1.

¹⁸ PG&E Proposal May 29, 2013, Attachment 1 pp. 43-44.

¹⁹ TURN Rate Design Proposal, May 29, 2013, p. 77.

²⁰ Calculation based on E-1 rate levels in PG&E Advice Letter 4096-E-A Table 4.

²¹ SEIA/VS Joint proposal, p. 13.

²² NRDC Proposal, p. 29.

²³ Order Instituting Rulemaking in R.12-06-013, p. 22.

rate impact calculators.²⁴ Because NEM value is highly sensitive to TOU period definition, without the ability to compare revenue neutral rates with different TOU definitions, it is difficult to create a quantitative measure of the impact that moving to TOU rates can have on the value of NEM.

Current industrial tariffs define the summer peak period as noon to 6:00 pm on weekdays; in winter the part-peak period is defined as 8:00 or 8:30 am to 9:00 or 9:30 pm weekdays.²⁵ PG&E's residential TOU tariff defines the summer peak in a similar manner, 1:00pm to 7:00pm weekdays, but has a much different winter part-peak definition.²⁶ For PG&E's residential TOU tariff the winter part-peak is limited to 5:00pm to 8:00 pm weekdays. Under PG&E's Residential TOU tariff, in the winter more than 99% of solar is generated in the off-peak period, as the part-peak falls largely after daylight hours.²⁷

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,²⁸ while PG&E defined its TOU periods consistent with its current residential TOU tariff, including the limited winter part-peak period described above.²⁹ 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.

Our analysis results show that moving to TOU rates that include the broader TOU definition underlying SCE's bill impact calculator tends to be beneficial for large solar customers. A similar rate change using rates generated with the PG&E bill impact calculator, including PG&E's narrowed part-peak definition, will have a nearly opposite impact on large solar customers. These results are shown using the example of DRA's TOU rates in Figure 2, below. The detailed analysis and methodology underlying Figure 2 is provided in Appendix A.

²⁴ PG&E RROIR Rate Design and Bill Impact Analysis User Guide, pp. 8-9; SCE Residential Rate OIR Rate Design and Bill Impact Analysis Model, pp. 5-7; and SDG&E Residential Rate OIR: Rate Design and Bill Impact Analysis Model, p. 11.

²⁵ Current PG&E Schedule E-20 and SCE Schedule TOU-8.

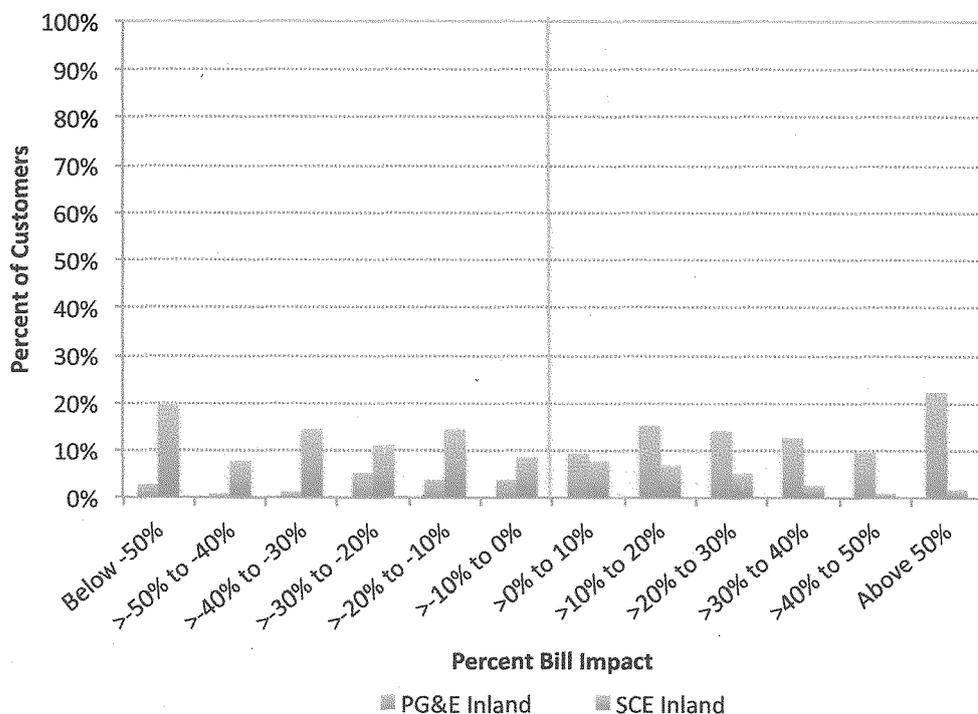
²⁶ Current PG&E Schedule E-6.

²⁷ Calculation based on PVWatts Data in IREC Model.

²⁸ SCE Residential Rate OIR Rate Design and Bill Impact Analysis Model, User Reference Manual Updated March 25, 2013, p. 14.

²⁹ PG&E RROIR Rate Design and Bill Impact Analysis Model User Guide, Version 9.0, March 26, 2013, p. 8.

Figure 2: Bill Impacts of DRA TOU Rate in Relation to PG&E and SCE Current Rates, Large Solar Inland Customers



The large disparity of TOU rate impacts shown in the IREC model demonstrates that impacts on NEM customers can be quite sensitive to TOU definitions. Underlying this issue is the policy question of how TOU periods should be set for the residential class. Should they be set coincident with the system peak or the class peak? Should TOU periods be defined to capture consumption patterns net of NEM facilities or should they be defined at the customer level? Over the next decade customer load and the load served by the utilities may diverge as more customers seek to install DG facilities and connect to the utility system via a NEM or other similar arrangement.

TOU period shifting can create a great deal of uncertainty for NEM customers and can make long-term investments in NEM facilities vulnerable to future changes. If the Commission chooses to implement TOU rates for the residential class, it will be important to adopt a straightforward policy for introducing TOU rates in a way that will allow NEM customers to make investment decisions. One way of accomplishing this would be to grandfather static TOU

period definitions for NEM customers for a certain period of time, as recommended in EDF's proposal.³⁰

D. A Tempered Transition Period Will Be Necessary to Avoid Rate Shock.

In order to protect all residential customers (including NEM customers) from rate shock, the Commission should adopt a measured transition period that will allow residential customers to adapt to the new rate structure. SEIA/Vote Solar's proposal defines a 6-year transition period encompassing two utility GRC cycles.³¹ Such a transition period should allow for residential customers to adapt to the new rate design. During the transition period, an interim rate such as that proposed by DRA as its introductory TOU rate can ease the move to new rate structures. Our modeling suggests that this rate would have relatively minor impacts on NEM customers, with the majority of NEM bills in the sample falling within 10% of current monthly bills. DRA's introductory TOU rate has the additional advantage of providing a clear path towards flattening the existing tiers and moving towards greater time differentiation. In addition to an appropriate transition period, alternative non-TOU tiered rate options, either on an opt-in or opt-out basis, will allow customers to select the rate that works best for them.

III. Conclusion

IREC is conducting an independent analysis of the impacts of party proposals on the value of NEM facilities. The results of this analysis thus far show that NEM value will be negatively impacted by the inclusion of even modest levels of fixed customer charges and that NEM value is highly sensitive to the intricacies of TOU rate design, including the definition of TOU periods.

There is a balance to be achieved between the Commission's goals of moving towards cost causation, avoiding harm to solar investments, and maintaining affordable access to electricity. While it is true that the lowest usage customers may pay below-cost rates it is reasonable to amortize the fixed costs over usage rather than through a fixed basic service fee. Doing so will also promote conservation if customers have the ability to lower their bills by consuming less.

³⁰ EDF Proposal, May 29, 2013, p. 29.

³¹ SEIA/Vote Solar proposal, May 29, 2013, p. 9.

In the OIR, the Commission indicated that it sought to investigate whether a “more efficient and equitable rate structure could address [NEM-related] ‘cost causation’ issues in a fairer manner, and in a way that does not harm solar investments.”³² Our model results to date suggest that a measured transition to a rate with TOU elements and without fixed customer charges, coupled with a non-TOU tiered rate option would achieve this objective.

Respectfully submitted at San Francisco, California on July 12, 2013,

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³² Order Instituting Rulemaking R.12-06-013, p. 18.