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)

RATE DESIGN PROPOSAL OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION AND THE VOTE SOLAR INITIATIVE

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RATE DESIGN PROPOSAL OF THE SOLAR ENERGY INDUSTRIES ASSOCIATION AND THE VOTE SOLAR INITIATIVE

Pursuant to the November 26, 2012 Scoping Memo and Ruling of Assigned Commissioner and the March 19, 2013 Administrative Law Judge's Ruling Requesting Residential Rate Design Proposals, the Solar Energy Industries Association (SEIA)[1] and the Vote Solar Initiative (Vote Solar) (collectively, the Joint Solar Parties) submit their residential rate design proposal.

I. INTRODUCTION

In its Order Instituting Rulemaking, the Commission reiterated the established guiding principles of residential rate design. The Commission has determined that residential rates should (1) be based on marginal costs; (2) be based on cost-causation principles; (3) encourage conservation and reduce peak demand; (4) provide stability, simplicity and customer choice; and

[1] The comments contained in this filing represent the position of the Solar Energy Industries Association as an organization, but not necessarily the views of any particular member with respect to any issue

(5) encourage economically efficient decision-making.[2] This list of five guiding principles was subsequently expanded upon to include five additional elements of (1) assuring low-income and medical baseline customers have access to enough electricity to ensure basic needs are met at an affordable cost; (2) rates should encourage reduction of both coincident and non-coincident peak demand; (3) rates should avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals; (4) incentives should be explicit and transparent; and (5) transitions to the new rate structure should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates, and minimizes and avoids the potential for rate shock.[3]

The Commission stated its intent "to explore if the current rate structure is meeting the[se] objectives" or "whether alternative rate designs other than an inclining block rate can better achieve all of these objectives." [4] In conjunction with this analysis, the Commission stated its intent to "examine whether the current tiered rate structure continues to support the underlying statewide-energy goals," whether such a tiered rate structure "facilitates the development of technologies that enable customers to better manage their usage and bills,"[5] and whether "the rates result in inequitable treatment across customers and customer classes." As will be presented below, the Joint Solar Parties propose a simplified, volumetric time-of- use (TOU) rate design as the "optimal," long-term residential rate design goal for the California utilities. The Joint Solar Parties' optimal rate design reflects that, in the long-run, all utility costs

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2 Order Instituting Rulemaking 12-06-013 (June 28, 2012) (OIR) at p.2, citing Decision 08-07-045.

3 Assigned Commissioner and Administrative Law Judges' Joint Ruling Inviting Comments and Scheduling Prehearing Conference (September 20, 2012) at p. 7

4 OIR at p. 2

5 *Id.*

are variable, and that utility costs vary throughout the day. The use of TOU volumetric rates gives the customer the greatest range of information to make the long-term choices and investments that will be necessary to transition to a clean energy future. The Joint Solar Parties further recommend a gradual, measured, six-year transition to this goal, during which a simplified increasing block (IB) rate design would remain the default rate design, but customers would be encouraged through education to opt in to the TOU rate. The TOU rate would become the default residential rate design at the end of the six-year transition period, assuming that the Commission is satisfied that customers understand, accept, and are ready for this step. After this transition, the Joint Solar Parties recommend retention of an IB rate, at a cost-based level, as an option for customers who do not prefer the TOU rate.

II. THE JOINT SOLAR PARTIES' OBJECTIVES ARE IN LINE WITH THE COMMISSION'S GOALS

Prior to undertaking the task of constructing a rate design proposal, the Joint Solar Parties devised a set of principles which the Joint Solar Parties believe merit consideration in determining an optimal residential rate design. As illustrated below, these principles are consistent with those espoused by the Commission but also offer elements that are specifically structured to guide rate design into the future, recognizing the need to reduce peak demand and promote the growth of energy efficiency and alternative forms of generation.

1. ***Rates should be based on marginal costs which emphasize a long-run perspective.***

The Commission's stated principle is that rates should be based on marginal costs. The Joint Solar Parties submit that looking at marginal costs from a long run perspective is critical if the full benefits of long-term investments in renewable distributed generation are to be recognized and maintained, consistent with the state's renewable energy goals.

2. Rates should encourage conservation and integration of renewables.

This principle is aligned with the Commission's objective that rates should encourage conservation and energy efficiency. The improved and simplified TOU rate structure advanced by the Joint Solar Parties can help to integrate renewables by signaling customers when it is optimal to consume power from or to place power onto the grid, thus enabling customers to understand and to change the hourly profile of their energy usage in ways that reduce demand on the grid. An updated IB rate also would provide a clear price signal to encourage lower overall levels of energy usage.

3. Rates should reduce peak demand.

This principle is similar to the Commission's stated objective of designing rates which encourage reduction of both coincident and non-coincident peak demand. This objective is addressed most directly and effectively through volumetric, time-of-use rates that charge higher rates during peak hours.

4. Rates should include the development of time-of-use (TOU) tariffs.

The Commission's rate design objectives do not make specific reference to TOU rates. Nonetheless, the use of such a rate structure serves to advance certain of the Commission's stated objectives. By more closely aligning rates with the utility's underlying marginal costs, TOU rates will encourage conservation and energy efficiency as well as the reduction of both coincident and non-coincident peak demand, all of which are stated Commission goals.

5. Rates should be based on cost-causation principles.

This principle mirrors one of the Commission's stated objectives. The Joint Solar Parties, however, believe it is critical to design rates that reflect the drivers of *long-term* costs and that are based on a perspective that California will gradually replace its current energy infrastructure with cleaner and more efficient technologies, consistent with state-wide energy goals.

6. Any rate design should not be discriminatory toward renewables.

A central feature of the California net energy metering statute is that the rates charged to solar customers must be identical to those paid by other customers (P.U. Code Section 2827(g)) – i.e., no discrimination in rate design against renewable distributed generation (DG). The Joint Solar Parties believe that such a principle must be maintained going forward. While the Commission's objectives are silent on the impacts of rate design on renewable distributed generation, the Commission must bear in mind that its goals of reducing peak demand, allowing customer choice, and supporting state energy policy goals through rate design all are advanced by a robust market for solar DG.

7. Rates should have transparency, with enough availability of data so that the customer has predictability into what their rate should be.

The Joint Solar Parties' principle is aligned with the Commission's objectives that rates should be "stable and understandable" and that the transition should emphasize customer education. Data should be available to customers to enable them to better understand, manage, and control their energy costs, and to enable new technologies that can assist in these efforts.

In addition, the current residential IB and TOU rates are complicated and confusing. This complication thwarts customers' efforts to make rational decisions about their energy usage and may present barriers to customer acceptance of TOU rates. By simplifying both the TOU and IB rate offerings, customers would be better able to choose the rate option that works best for them, while having the confidence that their selected rate option will not have unintended consequences. This could well result in a greater level of migration to TOU tariffs.

8. ***Any rate redesign should minimize any impact to existing customers, such as grandfathering in existing customers (no retroactivity), with the option to opt into a new rate.***

The Commission's objectives stress the need to transition to any new rate structure in a manner which minimizes and avoids the potential for rate shock. The Joint Solar Parties agree with these objectives, as noted below. The Joint Solar Parties also believe that any transition to a new rate design must respect the long-term investments that over 150,000 California customers have made in renewable DG. These customers should not be subject to an immediate and substantial reduction in the cost-effectiveness of their investment as a result of rate design changes.

9. ***There should be a smooth transition to a new rate structure.***

The Commission's tenth goal describes a smooth transition to any new default rate design. The Joint Solar Parties share this objective, and believe that a smooth transition will require making relatively small changes in both TOU and IB rates over multiple years, rather than attempting to move quickly to a new default rate design. A gradual transition that includes elements of customer choice and comprehensive customer education is much more likely both to be accepted by customers and to respect existing customer investments in renewable DG. The final movement to a new default TOU rate design should occur after customers have demonstrated an understanding and acceptance of the new TOU rate design.

10. ***Customer charges should be avoided.***

The Joint Solar Parties submit that the use of fixed charges should be limited, in order to minimize bill impacts on customers with low energy use, to encourage conservation and renewable DG, and to recognize that, in the long-run, few costs truly are fixed. Fixed charges provide revenue stability for the utility, but could undermine the stability of customers' investments in energy efficiency and renewable DG, providing a deterrent to such investments which would be counter to the Commission's energy efficiency and renewable power goals.

11. Rates should encourage economically efficient decision-making.

This principle echoes one set forth by the Commission. Economically efficient decision-making should include, to the extent possible, recognition of the external costs of our dependency on fossil fuels and of the broad economic benefits of a transition to cleaner sources of energy.

III. JOINT SOLAR PARTIES' RESIDENTIAL RATE DESIGN PROPOSAL

Through a public vetting process the Commission posited a set of questions designed to "elicit a full rate-design policy that the Commission can consider and adopt."[6] Parties were requested to present their respective proposals through responses to specific questions. Accordingly, the Joint Solar Parties offer the following responses as the means to explain their proposed residential rate design.

1. **Please describe in detail an optimal residential rate design structure based on the principles listed above and the additional principles, if any, that you recommend. For purposes of this exercise, you may assume that there are no legislative restrictions. Support your proposal with evidence citing research conducted in California or other jurisdictions.**

<u>Elements of an Optimal Residential Rate</u>

a. Rates Should Be Based On Long-Run Marginal Costs of Service.

The Joint Solar Parties' "optimal" residential rate design is based on the utility's long-run marginal costs of service. Rates based on the long-run cost of service should signal accurately and concisely to consumers the costs of electricity as it varies through the day and across the seasons. Such rates should be understandable, should provide customers with options, and

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6 Scoping Memo and Ruling of Assigned Commissioner, R. 12-06-013 (November 26, 2012) at page 7.

should inform customers' choices to use or conserve electricity or to invest in technologies that use, conserve, or produce energy.

b. Rates Should Be Volumetric.

In addition, the long-term, optimal rate design is volumetric. The use of volumetric rates recognizes that, in the long-run, all utility costs are variable, and gives the customer the greatest range of information and maximizes the customer's opportunity to make the long-term choices and investments that will be necessary to transition to a clean energy future. The default rate should be a TOU rate design which reflects how utility costs vary throughout the day. Consistent with the goal of maximizing customer choice, the Joint Solar Parties also favor retention of a simplified, volumetric IB rate as an option for customers. The Commission should investigate moving to seasonal rates for the IB as well as the TOU rate structure.[7] Finally, the "optimal" rate design should retain both the baseline and CARE discounts.

c. The Transition Is As Important As the Goal.

The Joint Solar Parties emphasize that the path to reach this "optimal" residential rate design is as important as that final goal. The transition should be gradual and extended over a period of six years (two general rate case cycles for each investor owned utility). There are several reasons for such an approach:

- A measured transition will avoid disruption to customer-side programs (distributed generation, energy efficiency, and demand response) that are the state's top resource priorities and that depend on long-term customer investments made in reliance on the current rate design.

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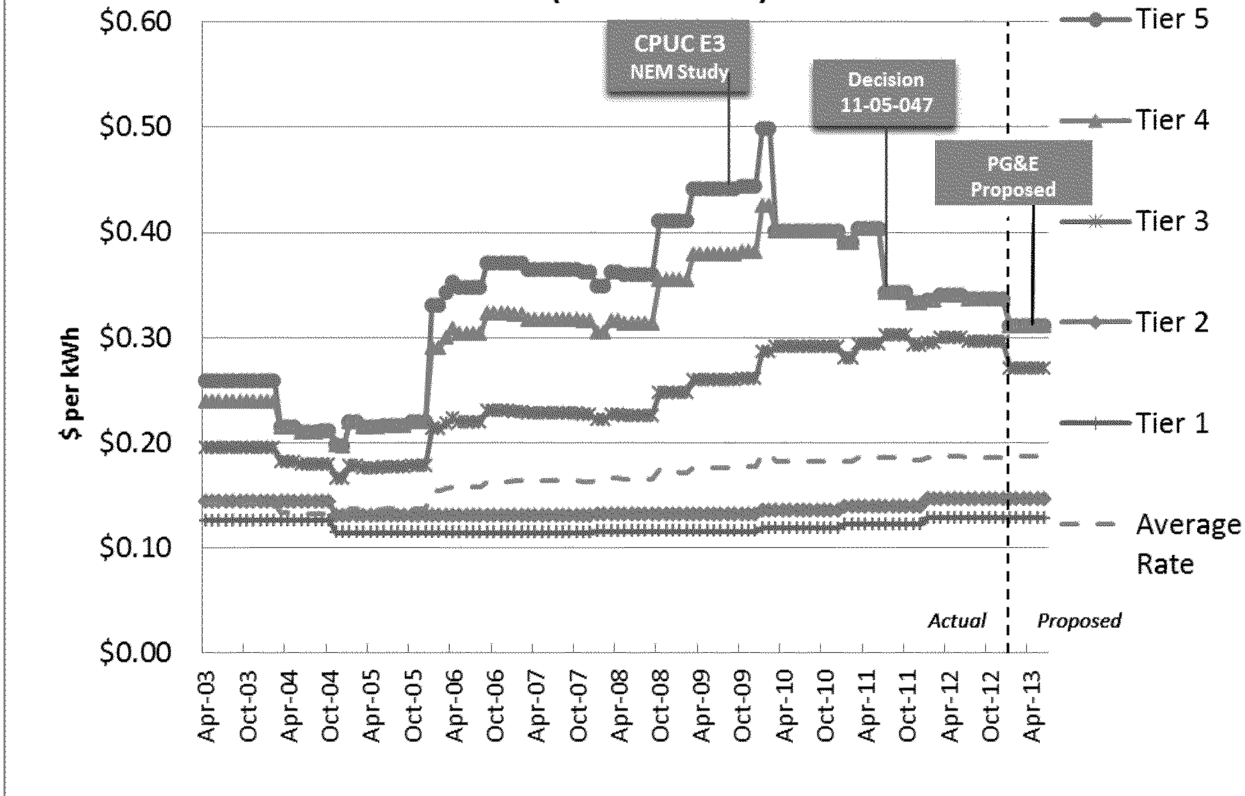
[7] SDG&E already has seasonal IB rates, and all of the IOUs' TOU rates vary seasonally. As part of the adoption of new, simplified IB rates, the Commission should investigate the benefits and implications of introducing seasonal-differentiation to IB rates, beyond the present seasonal baseline quantities. Not only would this result in a better match to the utilities' cost of service, but it also would increase IB customers' awareness of seasonally-differentiated rates, which should further smooth a transition to TOU rates which already are seasonally-differentiated.

- Customer acceptance is more likely if change is gradual, if time and resources are devoted to customer education, if customers have options, and if customers are encouraged (but not mandated) to select the preferred rate design.

- There is no crisis requiring immediate change. As shown in **Figure 1** below, with respect to Pacific Gas and Electric (PG&E), CPUC rate design reforms since 2009 already have reduced upper tier rates substantially, and SB 695 is increasing lower tier rates, albeit slowly.

Figure 1: PG&E Residential Rates (Schedule E-1)



Sources: PG&E on-line rate history (http://www.pge.com/nots/rates/tariffs/electric.shtml), and PG&E 2012 Rate Design Window (Application 12-02-020).

As shown in **Table 1** below, the Commission has made similar changes in the upper and lower tier rates for Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E).

Table 1: *Residential Increasing Block Rates – 2009 versus 2012 (cents per kWh)*

Date	Utility and Rate Schedule	Tier 1 (< 100% of Baseline)	Tier 2 (101% - 130%)	Tier 3 (131% - 200%)	Tier 4 (201% - 300%)	Tier 5 (Over 300%)
July 2012	PG&E (E-1)	12.845	14.602	29.561	33.561	33.561
	SCE (D)	12.597	15.511	24.217	27.717	31.217
	SDG&E (DR)	14.334	16.580	24.493	26.493	26.493
October 2009	PG&E (E-1)	11.531	13.109	26.078	38.066	44.348
	SCE (D)	10.933	13.635	27.040	31.931	36.823
	SDG&E (DR)	11.682	13.699	29.058	31.058	31.058
Change	PG&E (E-1)	**+11%**	**+11%**	**+14%**	**-12%**	**-24%**
	SCE (D)	**+15%**	**+14%**	**-10%**	**-13%**	**-15%**
	SDG&E (DR)	**+23%**	**+21%**	**-16%**	**-15%**	**-15%**

** Note: SDG&E rates are an annual average of summer / winter seasonal rates.*

d. Customer Choice Is Critical to Customer Acceptance.

The critical component of the Joint Solar Parties' proposed transition to its optimal rate design is customer education promoting opt-in to the preferred TOU rate design. TOU rates should not be mandated or designated as the default rate during the transition period. Thus, for the six-year transition period, the Commission would retain an increasing block (IB) rate structure as the "default" rate design. Customers would self-select onto the preferred TOU rate if it saves them money compared to the default IB rate.[8] This would leave those customers who are more expensive to serve or who choose not to switch on the IB rate, which should be allowed to rise to recover the utility's higher costs of serving those remaining IB customers. This would set

[8] One possible exception to the opt-in TOU rate would be new homes: the Commission should consider whether TOU rates should be the default tariff for new homes, as a way to encourage builders to incorporate the latest energy management technologies into new construction.

up a "virtuous cycle" encouraging customers, over time, to migrate to the TOU rate to save money, as the default IB rate gradually rises. At the end of the transition, the Commission would review the progress of the transition to TOU rates (including both customer understanding of TOU rates and the number of customers that have migrated to TOU rates), and would decide at that time whether to proceed to make the TOU rate the default rate. After the transition, the Commission should retain the higher-cost IB rate as an option.[9]

The Joint Solar Parties note that other utilities in the U.S. have achieved high penetrations of TOU rates, as a result of sustained customer education efforts. Arizona Public Service, for example, serves 53% of its residential customers by number, and 71% by volume, under TOU rate schedules.[10]

e. Rates Should Be Simplified.

Customer acceptance of, and a smooth transition to, a TOU residential rate will be greatly assisted if current TOU rates are simplified – primarily by reducing the usage-based tiers that greatly complicate most of the IOUs' current residential TOU rates.[11] The TOU rate design could retain a set discount for usage up to the baseline quantity, in order to retain the baseline concept within a TOU rate structure. This effectively would result in a TOU rate with two usage tiers. Today's default IB rate also can be simplified, for example, through the combination of

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9 This concept for using a voluntary, opt-in approach to a transition to TOU rates is based on a 2012 paper by Dr. Severin Borenstein, the E.T. Grether Professor of Business and Public Policy at the Haas School of Business, U.C. Berkeley, and the Director of the U.C. Energy Institute Borenstein, "Effective and Equitable Adoption of Opt-In Residential Dynamic Electricity Pricing," (U.C.E.I. Working Paper 229, April 2012), *Review of Industrial Organization,* forthcoming.

10 Miessner, Chuck, APS, "APS Rates Overview and the Impact of DE Solar," at Slide 93, presentation to the March 7, 2013 Distributed Energy and Net Metering Technical Conference, available at http://www.solarfuturearizona.com/APSDEWorkshopI.pdf.

11 An example of such a simplified residential TOU rate is the Southern California Edison (SCE) TOU-D-T rate, which has just two usage tiers.

Tiers 3, 4 and 5, resulting in a three-tiered rate. This would improve customer understanding of the price signals sent through the IB rate. Such a simplification would make further progress in moderating the bill impacts on high-usage customers during summer heat waves, which have caused concern among some Central Valley residents. Finally, the Joint Solar Parties also are open to exploring changes in the sizes of the usage tiers and in the rate differences between the tiers in future rate cases where the necessary data are available.[12]

f. Fixed Charges or Demand Charges Should Be Avoided.

The rate design should avoid the use of rate elements, such as monthly fixed or demand charges, to which the customer has no ability to respond, except to move off the grid. In the long-run, there are very few utility costs that are truly fixed. At the residential level, the utility's transmission and distribution systems serve multiple customers, and in the long-run can be re-configured to serve additional customers if average residential demand is reduced as a result of distributed generation (DG), energy efficiency (EE) or demand response (DR) investments. The only "individualized" utility facilities that ordinarily cannot be used to serve another residential customer are the service drop and meter. The Commission should recognize that rate design policies will have significant implications for customer-side programs (EE, DR, and DG), and that fixed charges limit customers' options to impact their energy bills through long-term investments in these preferred resource options. Perhaps most important, the IOUs' customer survey indicated that, of all possible rate design elements, significant monthly fixed charges elicited the strongest negative reactions among consumers.[13] This result deserves attention, given the critical importance of customer acceptance of any new rate design. To indicate the

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12 The utility bill calculators prepared for this case cannot model changes in the ranges of usage covered by each tier.

13 "RROIR Customer Survey Key Findings," (April 16, 2013 Final Draft), at Slide 19.

Commission's desire to minimize the use of fixed charges, the Commission should support a policy such as embodied in P.U. Code Section 739.9(b), which provides that the rate charged to residential customers for the baseline amount of usage, including any fixed customer charge, should not exceed 90 percent of the system average rate. This policy ensures that the baseline rate will be a meaningful guarantee that all customers can obtain an essential quantity of electricity at a rate lower than the system average rate, including the impact of any fixed charge.

g. Rates Should Continue to Reflect Long-Standing Policies Supporting Baseline Rates and CARE Discounts.

Finally, The Joint Solar Parties support the continuation of California's long-standing policy to provide a lower-than-average rate for a baseline quantity of energy, with the baseline rate set at 50% to 60% of average usage in each climate zone. The baseline quantity is intended to be an amount "necessary to supply a significant portion of the reasonable energy needs of the average residential customer" (P.U. Code Section 739[b]).

California also should maintain its longstanding commitment to low-income ratepayer assistance. The CARE program should be continued, with the Commission exploring greater consistency among the IOUs in the CARE discounts provided, and ensuring that the CARE subsidy is afforded only to those that truly qualify. The Commission should also explore innovative concepts such as replacing the CARE's program emphasis on subsidizing consumption with a focus on subsidizing energy efficiency and providing clean energy directly to low-income customers through community solar programs.

<u>The Joint Solar Parties' Residential Rate Proposal</u>

The Joint Solar Parties present below representative rates for each utility consistent with the above recommendations. The IOUs have developed "bill calculators" that enable parties to this OIR to model possible changes to the utilities' current residential rate designs. These calculators are based on the revenue requirements for the residential class that were effective on July 1, 2012. The Joint Solar Parties have used the calculators to design a simplified TOU rate that is consistent with the Joint Solar Parties' proposal described above.[14] Residential customers would be encouraged to move to this TOU rate design during the six-year transition. The Joint Solar Parties also have designed a simpler, 3-tier design for the current IB rate design under which most residential customers now take service. This IB rate would remain the "default" rate design until, at the end of the transition period, the Commission gives final approval to the TOU rate as the default tariff. As discussed above, the Commission may wish to examine changing the IB rate to a seasonal rate after customers have had some experience with the new, simplified IB rate design, and the Commission should retain an IB rate in the long-run as a cost-based option for those customers that choose to opt out of the default TOU rate design.

- **The Simplified TOU Rate**

The following are the key features of the proposed simplified TOU rate to which residential customers would be encouraged to migrate, and which would become the default rate after the Commission determines to end the transition period:

- **Structure.** A single TOU rate with three time periods in the summer and two or three in the winter. We assume the continued use of the existing TOU periods in today's residential TOU rates (E-6 for PG&E, TOU-D-T for SCE, and DR-TOU for SDG&E).

- **TOU Rate Differentials.** We have assumed that the rate differences between TOU periods are similar to those in current residential TOU rates. These differences are based on the IOUs' current marginal costs. Clearly, these differences, as well as the definitions of the TOU periods, could change over time as the value of power on the grid changes across the hours of the day. The detailed examination of TOU rate design should be debated in future Phase 2 proceedings in utility general rate cases (GRCs).

14 *See* Attachment A, "IOU Bill Impact Calculators with Joint Solar Parties Proposed TOU Rate design."

- **Baseline Credit.** Customers would receive a fixed baseline credit for all usage up to the baseline amount every month. Effectively, this creates two usage tiers -- a baseline Tier 1 plus a Tier 2 for all usage above baseline. The baseline quantity of power would be set at 55% of average usage in each climate zone, the mid-point of the current range of 50% to 60% of average usage (P.U. Code Section 739).

- **Fixed Charges limited by P.U. Code Section 739.9(b).** Our exemplary simplified TOU rate design assumes no fixed customer charge. The Commission should maintain the limitation that is now in place in P.U. Code Section 739.9(b), which limits the combination of any fixed monthly customer charge and the baseline credit to an average baseline rate that is not more than 90% of the system average rate. This restriction limits any implementation of, or increase in, a fixed customer charge unless there is an offsetting increase in the baseline credit.

- **CARE Discount.** We have assumed that CARE rates for low-income customers retain the same discounts that are contained in current CARE rates.

The following table shows the resulting residential TOU rates for PG&E, SCE, and SDG&E. Note that these rates are "class average" rates which assume that all residential customers choose the TOU rate. Attachment A to this filing includes the output from the IOU bill calculators, including the Joint Solar Parties' TOU rate design and the comparison to current rates, which the Commission requested in the "Administrative Law Judge's Ruling Requesting Residential Rate Design Proposals" dated March 19, 2013.

Table 2: *Exemplary "Optimal" Non-CARE Residential TOU Rates (cents per kWh)*

	PG&E		SCE	
TOU Period	Tier 1 (Baseline)	Tier 2 (Above Baseline)	Tier 1 (Baseline)	Tier 2 (Above Baseline)
Summer On	28.9	38.8	40.2	46.6
Summer Mid	18.9	28.8	17.4	23.8
Summer Off	11.4	21.3	14.3	20.7
Winter Mid	13.1	23.0	15.5	21.9
Winter Off	11.4	21.3	12.6	19.0
Baseline credit for Tier 1	9.9 cents per kWh		6.4 cents per kWh	
Monthly Fixed Charge	None		None	
Average Rate	18.1 cents per kWh		19.5 cents per kWh	
Seasons	Summer: May October Winter: November April		Summer: June – September Winter: October – May	

	SDG&E	
TOU Period	Tier 1 (Baseline)	Tier 2 (Above Baseline)
Summer On	21.4	31.4
Summer Mid	17.7	27.7
Summer Off	14.1	24.1
Winter On	14.6	24.6
Winter Mid	13.5	23.5
Winter Off	12.4	22.4
Baseline credit for Tier 1	10.0 cents per kWh	
Monthly Fixed Charge	None	
Average Rate	19.7 cents per kWh	
Seasons	Summer: May October Winter: November April	

- **Simplified Increasing Block Rate**

The Joint Solar Parties also have calculated the comparable increasing block rate under a much simpler rate structure than used today, with Tiers 3-5 combined into a single Tier 3 rate for all usage in excess of 130% of the baseline quantity. As with the TOU rates shown above, we have assumed no monthly fixed charge. **Table 3** presents these results.[15] Please be aware that these IB rates are "class average" rates which assume that all residential customers choose the IB rate. The Joint Solar Parties' proposal would set this rate residually to recover the revenue requirement remaining after deducting the costs to serve residential customers that have self-selected onto the TOU rate shown in Table 2. As a result, the IB rate would be set based on costs to serve the remaining IB customers. The Joint Solar Parties are also open to exploring

[15] The Joint Solar Parties did not use the bill impact calculators to prepare this table.

increases in the Tier 2 rate and corresponding reductions in Tier 3 during the transition period, in order to reduce the rate difference between Tiers 2 and 3.

Table 3: *Exemplary "Optimal" Non-CARE Residential IB Rates (cents per kWh)*

	PG&E			SCE		
	Tier 1	**Tier 2**	**Tier 3**	**Tier 1**	**Tier 2**	**Tier 3**
% of Baseline	<100%	100% 130%	>130%	<100%	100% 130%	>130%
Increasing Block Rate	12.8	14.7	31.7	13.0	16.0	30.4
Monthly Fixed Charge	None			None		

	SDG&E		
	Tier 1	**Tier 2**	**Tier 3**
% of Baseline	<100%	100% 130%	>130%
Increasing Block Rate Summer	14.3	16.6	29.2
Increasing Block Rate Winter	14.3	16.6	27.3
Monthly Fixed Charge	None		

2. ***Explain how your proposed rate design meets each goal and compare the performance of your rate design in meeting each goal to current rate design. Please discuss any cross-subsidies potentially resulting from the proposed rate design, including cross-subsidies due to geographic location (such as among climate zones), income, and load profile. Are any such cross subsidies appropriate based on policy principles? Where tradeoffs were made among the principles, explain how you prioritized the principles.***

As illustrated below, the Joint Solar Parties' rate design proposal meets each of the Commission's stated goals for residential rate design.

a. *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.*

A foundational element of the Joint Solar Parities' proposal is the retention of the state's commitment to meeting the energy needs of low-income and medical baseline customers at the same level of support that exists today. The Joint Solar Parties encourage the Commission to explore new means to provide such support beyond simply subsidizing consumption, such as using preferred DG, EE, and DR resources to supply low-income customers directly.

b. *Rates should be based on marginal cost.*

The Joint Solar Parties' proposal would emphasize the use of <u>long-run</u> marginal costs. A long-run perspective is vital in order to encourage customers to make long-term investments in preferred resources.

c. *Rates should be based on cost-causation principles.*

The focus of the Joint Solar Parties' proposal is a rate design that is based on what drives <u>long-term</u> costs, and which supports California gradually replacing its current energy infrastructure with cleaner and more efficient technologies. From this perspective, no utility costs should be considered "fixed," and none should be recovered through rates that are not based on usage.

d. *Rates should encourage conservation and energy efficiency.*
e. *Rates should encourage reduction of both coincident and non-coincident peak demand.*

The Joint Solar Parties' view these goals as closely related because rates which support EE and DR programs will conserve energy and can reduce both coincident and non-coincident peak demand. The Joint Solar Parties believe that rates based on the long-run marginal cost of service will encourage the optimal amount of investment in EE and DR, and recognize that, as a result of AB 1x, the upper tiers of the existing IB rate design at times have exceeded any reasonable calculation of the cost of service. The Joint Solar Parties' proposal is intended to move rates closer to the long-run cost of service. At the same time, the design's reliance on volumetric rates allows the greatest scope for customer-driven investments in EE and DR.

f. *Rates should be stable and understandable, and provide customers with options.*

Rates based on long-run marginal costs will be inherently more stable than rates based on short-run marginal costs. In the short-run, marginal costs are dominated by fuel costs and can be volatile when fossil fuel prices fluctuate. The rate simplifications which the Joint Solar Parties have proposed will make rates more understandable, by reducing the number of usage tiers in IB rates and by simplifying the TOU rate structure. Our proposal also ensures that customers retain both cost-based TOU and IB rate options, which will allow customers to choose the rate option that best meets their needs. Finally, the focus of the Joint Solar Parties' proposal on allowing the greatest range of customers to participate in demand-side investments is essential to supporting the ability of customers to exercise greater choice and control over their sources of energy and their monthly energy bills. Customers will not be able to exercise such long-term choices if a substantial portion of their monthly budget for energy costs is consumed in a fixed charge paid to the incumbent utility.

g. *Rates should generally avoid cross-subsidies, unless the cross-subsidies appropriately support explicit state policy goals.*

The Joint Solar Parties' proposed rate design contains two inherent subsidies: (1) the CARE subsidy for low-income ratepayers; and (2) the baseline subsidy for an "essential" amount of power to meet basic needs. Both of these subsidies support longstanding, explicit state policy goals. The CARE subsidy is targeted at low-income consumers. The baseline program represents a broader safety net than CARE and is intended, like Social Security, to provide a basic amount of energy to all consumers, regardless of income, at an affordable price. Baseline rates provide inland consumers in hotter regions with significantly larger baseline allowances than coastal customers. These larger baseline allowances in inland regions result in a significant subsidy for consumers in these warmer areas, because any regional differences in the cost of electricity are much smaller than the discount provided to inland consumers.

h. Incentives should be explicit and transparent.

A TOU rate design, such as the one proposed by the Joint Solar Parties, based on volumetric rates, with understandable variations linked to seasons and times of day, will make explicit to the consumer the incentives that he or she has to consume electricity at different times. The Joint Solar Parties' suggestion to develop a seasonally-differentiated IB tariff also would provide incentives to reduce overall usage levels, especially during high use summer months. In contrast, a fixed charge presents the customer with no incentive, except perhaps to leave the system.

i. Rates should encourage economically efficient decision making.

The Commission has long recognized that rates based on marginal costs will promote economically efficient decisions. The Joint Solar Parties urge the Commission to adopt a long-run perspective on marginal cost calculations and on a volumetric rate design under which customers have the scope to reduce all elements of the cost of service. This would send the right signals to consumers to make efficient decisions on long-term investments in DG, EE, and DR resources.

j. Transitions to new rate structures should emphasize customer education and outreach that enhances customer understanding and acceptance of new rates, and minimizes and appropriately considers the bill impacts associated with such transitions.

The element of the Joint Solar Parties' proposal that provides for a gradual transition to default TOU rates, with an opt-in provision during the six-year transition, is designed to avoid sudden changes in rate design, and in customer bills. Unexpected bill impacts are the circumstances most likely to cause customer dissatisfaction and complaints. A measured transition also respects the fact that over 150,000 California IOU customers have made significant financial commitments to install solar DG systems in reliance on the existing rate design. Finally, this gradual transition provides needed time for comprehensive customer education.

3. How would your proposed rate design affect the value of net energy metered facilities for participants and non-participants compared to current rates?

Net energy metering (NEM) is the billing arrangement which allows solar DG customers to receive a retail rate credit when their production exceeds their on-site usage, and they export the excess power to the grid. Obviously, the retail rate design has a significant impact on the NEM credits which solar customers receive. For non-participating ratepayers, the costs of NEM are the retail rate credits paid by the utility; the benefits are the marginal costs of the power which the utility does not have to supply as a result of the NEM exports. Generally, the Joint Solar Parties' proposal will align residential rates more closely with the IOUs' underlying marginal costs, and thus should help to ensure the costs and benefits of NEM are balanced.

Indeed, the cost / benefit studies of NEM that have been completed to date support this conclusion. The Commission's 2009 NEM cost-effectiveness study, by the consulting firm Energy and Environmental Economics (E3), found that 87% of the net cost shift from NEM was in the residential market, largely as a result of the very high upper tier residential rates that were in effect in 2008-2009. Figure 1 above shows that those high upper tier rates have been eliminated or significantly reduced since 2009. The most recent NEM cost / benefit study, by Crossborder Energy and released in January 2013, found that, at 2012 rates, the costs and benefits of NEM were balanced in the IOUs' residential markets.[16] Significantly, the Crossborder study also examined the costs and benefits of NEM under an assumption that all

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16 Beach, R. Thomas, and McGuire, Patrick G., "Evaluating the Benefits and Costs of Net Energy Metering in California" (January 2013), (hereafter "Crossborder NEM Study") available at http://votesolar.org/wp-content/uploads/2013/01/Crossborder-Energy-CA-Net-Metering-Cost-Benefit-Jan-2013-final.pdf, at pp. 2-3.

residential NEM customers were on the IOUs' existing residential TOU rates. In this "100% TOU" sensitivity, the net benefits of NEM for non-participants increased appreciably, by $13 million per year, compared to the current mix of IB and TOU rates under which residential NEM customers take service. Finally, the Crossborder study found that, among the existing TOU rate designs, the simpler designs such as the SCE TOU-D-T rate and the SDG&E DR-SES rate produced greater net benefits than the very complex PG&E residential TOU rate (which has four usage tiers and five TOU periods, for 20 different rates that can apply to a single customer!).[17]

For existing solar customers, the Joint Solar Parties submit that a gradual transition to a new rate design is essential. This transition should respect and protect the long-term investments that more than 150,000 California IOU customers have made in renewable DG. Existing customers should not be subjected to substantial adverse bill impacts as a result of rate design changes.

The Joint Solar Parties anticipate that solar DG will continue to be a reasonable investment for participating customers under the TOU rate design that it has proposed. Studies have shown that the bill savings for many solar customers can increase under TOU rates.[18] The penetration of TOU rates is already far higher among solar customers than among standard residential users – for example, almost 50% of PG&E's residential solar accounts are on TOU rates.[19] The Joint Solar Parties believe that the process of investing in a solar system results in

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17 Crossborder NEM Study, at pp. 3-4.

18 Dargouth, N; Barbose, G; and Wiser, R., "The Impact of Rate Design and Net Metering on the Bill Savings from Distributed PV for Residential Customers in California" (April 2010, Lawrence Berkeley National Laboratory, Publication LBNL-3276E), at 19-23, available at http://eetd.lbl.gov/ea/emp/reports/lbnl-3276e.pdf.

19 Crossborder NEM Study, at p. 26.

customers gaining an increased awareness of their electricity use, so the greater frequency of selecting a TOU rate is not surprising.

4. ***How would your proposed rate design structure meet basic electricity needs of low-income customers and customers with medical needs?***

The Joint Solar Parties support maintaining California's longstanding commitment to low-income ratepayer assistance. The CARE program should be continued, with the Commission exploring greater consistency among the IOUs in the CARE discounts provided. Given the large dollar amounts of the CARE subsidy, the Commission should explore alternative means to deliver the same amount of subsidy to low-income customers, but in forms that replace today's direct subsidy of consumption with an equivalent subsidy that reduces the low-income customer's bill by the same amount through energy efficiency or by providing clean energy directly to low-income customers through community solar programs. The Joint Solar Parties understand that the Interstate Renewable Energy Council will be proposing such "cleanCARE" concepts as part of its comments in this proceeding. The Joint Solar Parties urge the Commission to give these concepts serious consideration.

5. ***What unintended consequences may arise as a result of your proposed rate structure and how could the risk of those unintended consequences be minimized?***

The primary unintended consequences which may arise from a transition in residential rate design are customer confusion and complaints about unexpected bill impacts. In this regard the Joint Solar Parties' proposal is no different than others that will be submitted in this proceeding. The risk of those unintended consequences can be minimized through a gradual transition period, with a significant effort at customer education (including easy ways for customers to compare rate options), and by simplifying both the TOU and IB rates. Perhaps most important, customers will retain a choice of rates: customers would opt-in to the simplified TOU rate design during the transition period, and, after the TOU rate becomes the default rate, customers would retain the long-term option of a cost-based IB rate if they prefer.

6. ***For your proposed rate structure, what types of innovative technologies and services are available that can help customers reduce consumption or shift consumption to a lower cost time period? What are the costs and benefits of these technologies and services?***

TOU pricing signals to customers when it is optimal to consume power from or to place power onto the grid, thus enabling customers to understand and to change the hourly profile of their energy usage in ways that reduce demand on the grid. Customer education and the ability of consumers to access and to understand smart meter data are essential if they are to understand the profile of their energy use and to respond to the pricing signals in TOU rates. Utilities need to make available and to publicize widely "shadow billing" under which consumers can readily compare, over time, what their bills would be under both TOU and IB rates. Once relatively simple TOU rates are well-accepted, this can serve as a platform on which to implement more complex pricing schemes such as critical peak pricing and real-time pricing. Smart meter technology also allows customers to understand their consumption levels within a billing period, which enables customers taking service under an IB tariff to receive price signals that are more coincident with their consumption.

A sustained commitment in California to implementing dynamic, time-related rates and to providing clearer price signals to consumers can play a significant role in enabling innovative energy management technologies. Solar DG is, of course, one of these "smart grid" technologies. Others include:

- Energy information technologies that provide more granular and more timely data to consumers.
- Control systems that allow consumers greater control over when their major uses of energy occur.

- Storage – including the batteries of electric vehicles – holds great promise for increasing the value of solar DG, for enhancing the reliability of service, and for controlling when loads and supplies are placed on the grid.

The value of these technologies used together is undoubtedly greater than their sum considered alone. A rate design which more accurately represents the cost of traditional power from the grid and that is well-understood by customers is an essential foundation if these synergies are to be unlocked.

7. ***Describe how you would transition to this rate structure in a manner that promotes customer acceptance, including plans for outreach and education. Should customers be able to opt to another rate design other than the optimal rate design you propose? If so, briefly describe the other rate or rates that should be available. Discuss whether the other rate(s) would enable customers opting out to benefit from a cross-subsidy they would not enjoy under the optimal rate.***

As noted above, the transition plan is an essential element of the Joint Solar Parties' rate design proposal. The transition plan consists of the following elements:

- **A lengthy, gradual transition** that provides time for customer education, understanding, and acceptance, and that respects the long-term commitments that many customers have made in reliance on the existing rate design.

- Robust **customer education** on the rate design choices available, particularly through shadow billing.

- Use of an **opt-in approach** to the preferred TOU rate design during the transition period.

- **Avoiding the use of fixed monthly charges**, the rate design element to which consumers have the strongest negative reaction.

- **A gradual increase in the alternative IB rate**, as customers move to the TOU rate, which will encourage even more consumers to switch to TOU rates. This would not result in a subsidy for those who remain on the IB rate, as the IB rate would be designed to recover the higher costs of service for those customers who do not elect to move to the TOU rate. Similarly, the TOU rate would be based on the lower costs to serve those who have switched. The pace and magnitude of this rate differentiation between TOU and IB rates will be driven by the relative costs to serve TOU and IB customers as well as by the rate of customer migration from IB to TOU rates.

8. ***Are there any legal barriers that would hinder the implementation of your proposed rate design? If there are legal barriers, provide specific suggested edits to the pertinent sections of the Public Utilities Code. If there are legal barriers, describe how the transition to your proposed rate design would work in light of the need to obtain legislative or other regulatory changes and upcoming general rate cases.***

The Joint Solar Parties believe that the rate designs presented in Tables 2 and 3 could be implemented with no changes to existing California law. If the proposed three-tier IB rate were to be modified, for example, to raise the Tier 2 rate to a level closer to the Tier 3 rate, it is possible that the allowed annual increases in Tier 1 and 2 rates imposed by SB 695 (P.U. Code Section 739.9[a]) – presently, 3% to 5% per year – would have to be modified.

9. ***How would your proposed rate design adapt over time to changing load shapes, changing marginal electricity costs, and to changing customer response?***

Any rate design structure which the Commission adopts will have to respond over time to changes in marginal costs and load shapes, which together embody the changing nature of how customers will demand power from, and increasingly will supply power to, the grid. The Joint Solar Parties view such adaptations as the natural subjects for future GRC Phase 2 cases and would caution the Commission not to prejudge what those future changes may be. For example, there has been much talk recently about how the addition of significant incremental solar resources to the California grid will "shift the peak" into the evening, thus reducing the value of solar. First, such a possibility does not diminish the value of solar that is on the system now or that is being added <u>today</u>; at most, it has implications for the value of solar at some point in the future. Second, it is true that the ability of large amounts of solar to decrease the value of afternoon power has been observed in Germany. However, Germany is a market with nine times more solar, relative to the installed capacity on the grid, than is installed in California today. Similarly, the studies of the California market which have modeled a shift in the peak have required solar penetrations ten times larger than today to produce a significant shift.[20] Third, peak electric demands in California are expected to increase relative to average use, because the population is growing faster in warmer inland areas than along the coast, and because of climate change.[21] These trends will offset a shift in the peak from solar additions. Finally, and most important, the future will not look just like today, only with more solar. Customers also will respond to the changing mix of resources. If solar reduces the price for grid power in the afternoon, and if those prices are conveyed in accurate price signals, consumers will respond by shifting consumption from the evening to the afternoon – i.e., the opposite of what DR tries to achieve today – with customers pre-cooling homes, running appliances remotely, and filling batteries in the afternoon instead of the evening.

10. How would your proposed rate design structure impact the safety of electric patrons, employees, and the public?

Any energy delivery system results in a risk to public safety that must be diligently managed. The Joint Solar Parties submit that one of the greatest risks to public safety is the absence of reliable electric service, as we see whenever a natural disaster results in a long delay

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[20] Mills, A., and R. Wiser, "Changes in the Economic Value of Variable Generation at High Penetration Levels: Pilot Case Study of California," Lawrence Berkeley National Laboratory, LBNL-5445E (June 2012), available at http://eetd.lbl.gov/ea/emp/reports/lbnl-5445e.pdf. This report shows a significant change in the time of peak demand at solar penetrations of 10% or above. Today's solar penetration is less than 1% of expected 2020 demand. Further, LBNL's results for a 10% penetration each of solar PV, solar thermal, and wind resources show very similar values for each of these technologies, with solar PV slightly higher in value than wind or solar thermal at a 10% penetration. *See* Table ES-1 and Figure 10.

[21] The most recent California Energy Commission (CEC) electricity consumption and peak demand projections for 2022 show that the state's overall electric load factor is anticipated to drop from 56% in 2000 to 51% in 2022. This change in load factor from 2000 to 2022 is equivalent to an increase of 5,600 MW in the state's non-coincident peak demand relative to what peak demand would be at a 55% load factor. Such an increase in peak demand would require about 11 GW of PV capacity to offset, assuming that 50% of installed PV capacity is available at the time of system peak. *See* the CEC's *2012 Integrated Energy Report Update*, at Table 1, available at http://www.energy.ca.gov/2012publications/CEC-100-2012-001/CEC-100-2012-001-LCD.pdf.

in power restoration or when conflict or a scarcity of resources means that power is available only intermittently. The Joint Solar Parties believe that the rate design which it has proposed will enable and encourage consumers to exercise greater choice, to take greater control, and in the long run to increase the reliability and safety of the system that supplies them with essential electric supplies.

IV. CONCLUSION

The Joint Solar Parties' residential rate design proposal meets all of the Commission's stated objectives. It does so through the use of simplified, cost-based TOU and IB rates. The proposed move to greater use of TOU rates will allow rates to be more closely aligned with the utility's underlying long-run marginal costs. As a result, the proposed rate design should serve to encourage conservation, energy efficiency, and the use of renewable distributed generation – demand-side investments which will reduce both coincident and non-coincident peak demand – consistent with the state's energy goals. The Joint Solar Parties' proposal allows a sufficient transition period to increase customer understanding and acceptance of TOU rates, facilitating a smooth change to default TOU rates when the Commission determines that the transition should end. A gradual transition also will avoid painful disruptions to the state's burgeoning markets for distributed, demand-side resources. Under the Joint Solar Parties' proposal, customers will have rate design choices both during and after the transition, including continuing on IB rates as a viable, long-term optional rate. Therefore, the Joint Solar Parties respectfully recommend that the Commission adopt our residential rate design proposals.

Respectfully submitted this 29th day of May, 2013, at San Francisco, California

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Attachment A

IOU Bill Impact Calculators with
Joint Solar Parties Proposed TOU Rate design

PG&E Bill Calculator

PG&E -Rate Design and Bill Impact Analysis Model for

Scenario 1

Rate Design Inputs Non TOU and TOU	
Current Rate Date =>	7/1/2012
2 Tier Rate Ratio =>	100%
# of Tiers =>	3
Baseline Allowance Percent =>	55%
Baseline Allowance from the sample (Do not use the percent input) =>	No
Tier-3 to Tier-4 Delta (cents/kWh) =>	-
Tier-4 to Tier-5 Delta (cents/kWh) =>	-
T1 Increase (Over Current) =>	0%
T2 Increase (Over Current) =>	0%
Minimum Charge imposed in lieu of Customer Charge =>	No
Minimum Charge Applicable to Delivery Charge Only =>	No
Cust Charge $/Mo. =>	-
Fixed Charge High Demand $/Mo. =>	-
Fixed Charge Low Demand $/Mo. =>	-
Fixed Charge Break Point kW =>	3.00
CARE Discount for Tier-1, Cust. Chg., Demand Chg. & Min. Bill Amt. =>	35%
CARE Discount for Tier-2 =>	30%
CARE Discount for Tier-3 and Above =>	25%
Income Based Discount 100% of Poverty Level or Below =>	35%
Income Based Discount 100% to 200% of Poverty Level =>	25%
Income Based Discount 200% to 300% of Poverty Level =>	10%
Frozen CARE T1/T2 =>	☑
Use existing CARE Tier-3 rate =>	☑
Apply Income Based Discount Instead of Tier Based CARE Disc =>	☐
Additional TOU Rate Design Specific Inputs	
Number of TOU Periods =>	3
TOU Rate Percent Differential: On-peak to Part-peak =>	35%
TOU Rate Pct. Differential: Part-peak to Offpeak (N/A if 2 TOU periods) =>	35%
TOU Base Line Credit in cents per kWh =>	9.90
Flat Non-TOU Tier-1 =>	No

Resulting 3-Tier Rate					
Non-CARE	Tier	Forecast Sales (GWh)	% of Sales	Jul-12 Rate	3-Tier Rate Rate
	1	12.93	61.0%	12.8	12.8
	2	2.45	11%	14.6	14.7
	3	3.33	16%	29.6	31.7
	4	1.70	8%	33.6	31.7
	5	0.94	4%	33.6	31.7
	T2-4				26.91
	Baseline discount				14.07
	Cust $/Mo.			0.0	0.0
	Fixed Charge High Demand $/Mo.			0.0	0.0
	Fixed Charge Low Demand $/Mo.			0.0	0.0
	Min Charge $/Mo.			4.5	0.0
CARE	Tier	Sales (GWh)	% of Sales	Jul-12 Rate	3-Tier Rate Rate
	1	5.30	68%	8.3	8.3
	2	0.86	11%	9.6	9.6
	3	1.04	13%	12.5	12.5
	4	0.44	6%	12.5	12.5
	5	0.20	2%	12.5	12.5
	Cust $/Mo.			0.0	0.0
	Fixed Charge High Demand $/Mo.			0.0	0.0
	Fixed Charge Low Demand $/Mo.			0.0	0.0
	Min Charge $/Mo.			3.6	0.0

Instruction for running this model

For either a non-TOU or a TOU rate design, run steps 1 through 4 by clicking the respective macro button located in this sheet.

For designing a non-TOU rate structure, run steps 5 and 6 by clicking those buttons after steps 1 through 4 are completed.

For designing a TOU rate structure, run steps 7 and 8 by clicking those buttons after steps 1 through 4 are completed.

Please enter scenario name and reference number in cells B2:C2.

90% SAR OK

Resulting TOU Rate

Non-CARE		Forecast Period Sales (GWh)	% of Sales	Rate
Tier-1	Summer On-Peak	1.31	6.0%	28.9
	Summer Part-Peak	1.40	7.0%	18.9
	Summmer Off-Peak	3.62	17.0%	11.4
	Winter Part-Peak	0.79	4.0%	13.1
	Winter Off-Peak	5.82	27.0%	11.4
Tier-2	Summer On-Peak	0.92	4.0%	38.8
	Summer Part-Peak	0.94	4.0%	28.8
	Summmer Off-Peak	2.36	11.0%	21.3
	Winter Part-Peak	0.49	2.0%	23.0
	Winter Off-Peak	3.71	18%	21.3
	Cust $/Mo.			0.0
	Fixed Charge High Demand $/Mo.			0.0
	Fixed Charge Low Demand $/Mo.			0.0
	Min Charge $/Mo.			0.0
CARE		**Period Sales (GWh)**	**% of Sales**	**Rate**
Tier-1	Summer On-Peak	0.60	8%	18.8
	Summer Part-Peak	0.59	7%	12.3
	Summmer Off-Peak	1.47	19%	7.4
	Winter Part-Peak	0.31	4%	8.5
	Winter Off-Peak	2.34	30%	7.4
Tier-2	Summer On-Peak	0.32	4%	27.2
	Summer Part-Peak	0.31	4%	20.1
	Summmer Off-Peak	0.75	10%	14.9
	Winter Part-Peak	0.13	2%	16.1
	Winter Off-Peak	1.03	12%	14.9
	Cust $/Mo.			0.0
	Fixed Charge High Demand $/Mo.			0.0
	Fixed Charge Low Demand $/Mo.			0.0
	Min Charge $/Mo.			0.0

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Average Rate Impact Summary (Cents / kWh) by Zone

NON CARE			
Baseline Region	Cost Based Rate	Jul 12 Rate	Proposed Non TOU Flat Rate
Q	15.2	17.8	18.0
T	16.9	18.5	18.5
V	16.8	15.4	15.5
X	17.3	18.3	18.4
S	17.8	18.5	18.6
P	17.1	16.7	16.9
R	17.6	18.3	18.4
W	18.5	18.0	18.2
Y	15.9	15.7	15.8
Z	21.5	15.8	15.8
Non-CARE Customers	**17.4**	**18.2**	**18.3**

CARE			
Baseline Region	Cost Base Rate	Jul 12 Rate	Proposed Non TOU Flat Rate
Q	N/A	N/A	N/A
T	16.3	9.4	9.4
V	18.3	9.0	9.0
X	17.4	9.2	9.2
S	18.0	9.6	9.6
P	16.1	9.2	9.1
R	17.9	9.4	9.3
W	17.3	9.4	9.4
Y	15.8	8.7	8.7
Z	N/A	N/A	N/A
CARE Customers	**17.3**	**9.4**	**9.3**

Rate Design Measures	Current Rate Levels	Non-TOU 3-Tier Rate
Residential CARE Subsidy ($M) =>	$ 627,003,686	$ 599,000,000
Residential CARE subsidy funded by non-residential class ($M) =>	$ 438,902,580	$ 419,300,000
Effective CARE Discount % =>	49%	49%
Percent of Revenue Requirement met by Fixed Customer Charge =>	0%	0%
Percent Fixed Cost Not Recovered	21%	21%

Average Rate Impact Summary (Cents / kWh) by Zone

NON CARE

Baseline Region	Cost Based Rate	Jul 12 Rate	Proposed TOU Rate
Q	15.2	17.8	17.6
T	16.9	18.5	17.6
V	16.8	15.4	16.1
X	17.3	18.3	17.9
S	17.8	18.5	18.5
P	17.1	16.7	17.4
R	17.6	18.3	18.8
W	18.5	18.0	19.2
Y	15.9	15.7	16.4
Z	21.5	15.8	15.6
Non-CARE Customers	**17.4**	**18.2**	**18.1**

CARE

Baseline Region	Cost Base Rate	Jul 12 Rate	Proposed TOU Rate
Q	N/A	N/A	N/A
T	16.3	9.4	11.6
V	18.3	9.0	10.4
X	17.4	9.2	11.3
S	18.0	9.6	12.5
P	16.1	9.2	11.1
R	17.9	9.4	12.2
W	17.3	9.4	12.6
Y	15.8	8.7	10.4
Z	N/A	N/A	N/A
CARE Customers	**17.3**	**9.4**	**11.8**

Rate Design Measures	Current Rate Levels	TOU
Residential CARE Subsidy ($M) =>	$ 627,003,686	$ 402,000,000
Residential CARE subsidy funded by non-residential class ($M) =>	$ 438,902,580	$ 281,400,000
Effective CARE Discount % =>	49%	34%
Percent of Revenue Requirement met by Fixed Customer Charge =>	0%	0%
Percent Fixed Cost Not Recovered	21%	21%

[redacted]

Baseline Territory	Estimated Usage, GWh Non CARE	CARE	Total
Q	0.07	0.00	0.07
T	3.90	1.11	5.01
V	0.18	0.08	0.26
X	8.55	2.01	10.55
S	4.17	1.57	5.74
P	1.08	0.77	1.85
R	2.15	1.18	3.33
W	0.97	1.03	2.00
Y	0.23	0.10	0.33
Z	0.05	0.00	0.05
Total	21.35	7.85	29.20

Customer Count

Non-CARE	2,507,400	349,730	391,750	104,668	3,353,549
CARE	232,292	180,987	561,999	292,753	1,268,031
Total	2,739,692	530,717	953,749	397,422	4,621,580

[redacted]

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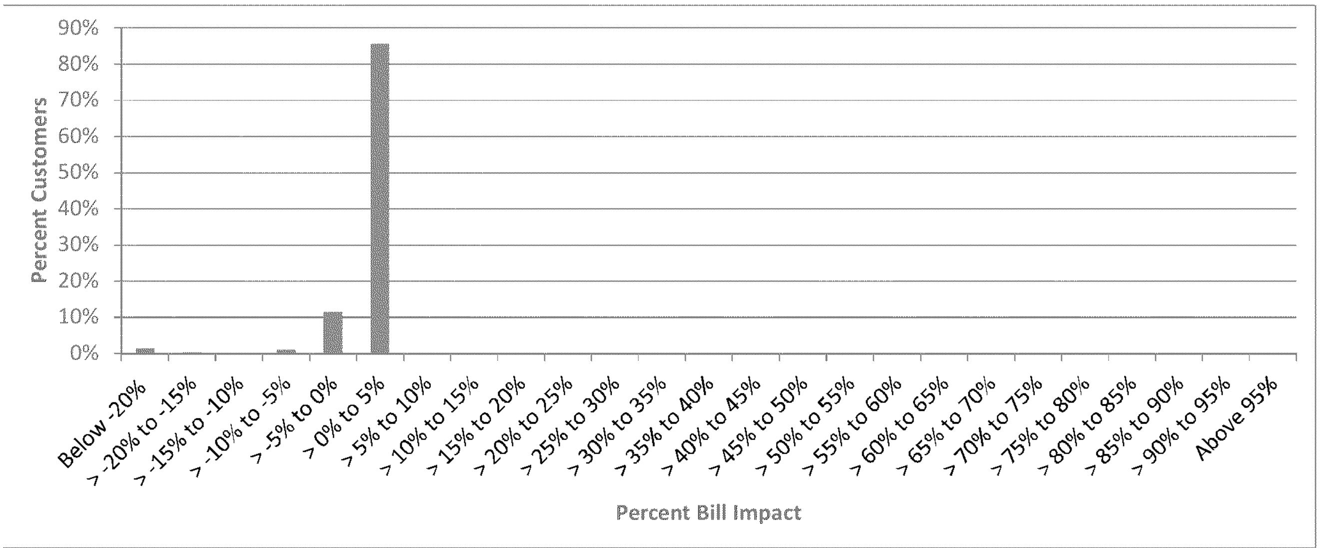
NonCARE Customers

Press F9 to update charts and tables after selection.

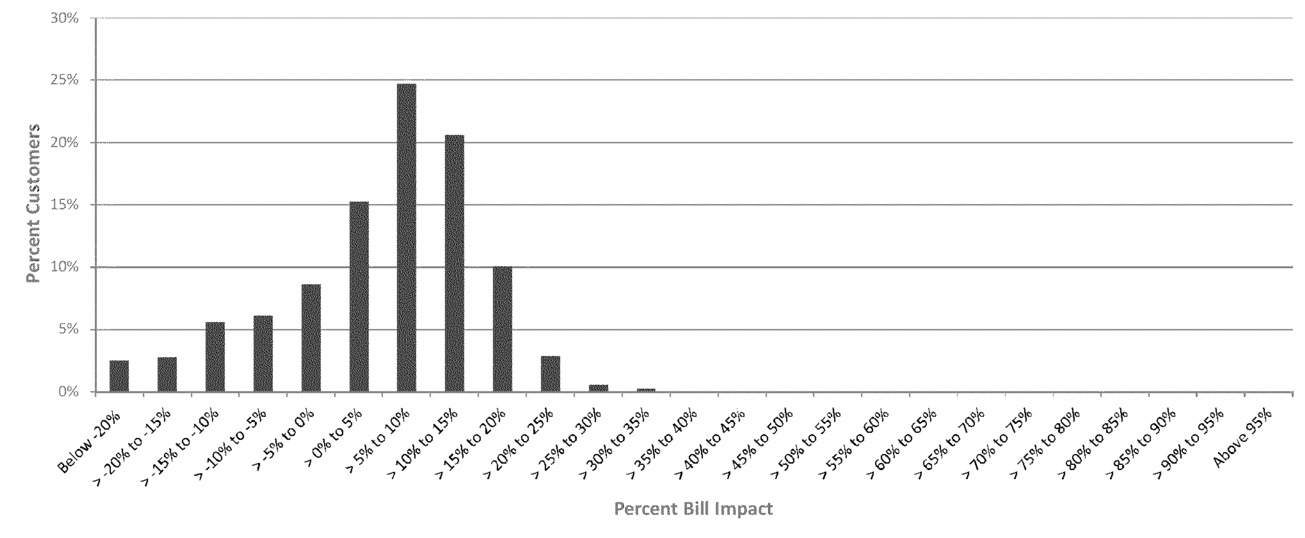
Non TOU 3-Tier Rate Design Impacts NonCARE Customers



Non TOU 3 Tier Rate Design Impacts NonCARE Customers

Impact	Customer		Average		Average Cents/kWh		%	Monthly $			Average Bill to Income Ratio	
Percent Range	Number	Percent	Monthly kWh	Load Factor	Jul 12	Proposed	Change	Jul 12	Proposed	Change	Jul 12	Proposed
Below -20%	43,958	1%	28	4%	23.42	12.96	-45%	6.60	3.65	(2.95)	0.1%	0.1%
> -20% to -15%	11,504	0%	83	6%	16.70	13.90	-17%	13.90	11.57	(2.33)	0.2%	0.1%
> -15% to -10%	8,488	0%	90	6%	16.01	14.22	-11%	14.36	12.75	(1.60)	0.4%	0.3%
> -10% to -5%	35,458	1%	127	7%	14.99	13.98	-7%	19.08	17.80	(1.28)	0.4%	0.3%
> -5% to 0%	381,618	11%	872	14%	24.59	24.17	-2%	214.54	210.87	(3.67)	2.5%	2.4%
> 0% to 5%	2,872,522	86%	501	13%	16.77	17.00	1%	83.97	85.14	1.17	1.1%	1.2%
> 5% to 10%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 10% to 15%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 15% to 20%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 20% to 25%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 25% to 30%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 30% to 35%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 35% to 40%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 40% to 45%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 45% to 50%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 50% to 55%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 55% to 60%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 60% to 65%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 65% to 70%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 70% to 75%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 75% to 80%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 80% to 85%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 85% to 90%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 90% to 95%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
Above 95%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
Group Total	3,353,549	100%	530	13%	18.23	18.33	1%	96.71	97.23	0.52	1.3%	1.3%

TOU Rate Design Impacts — NonCARE Customers



TOU Rate Design Impacts — NonCARE Customers

Impact	Customer		Average		Average Cents/kWh		%	Monthly $			Average Bill to Income Ratio	
Percent Range	Number	Percent	Monthly kWh	LF	Jul 12	Proposed	Change	Jul 12	Proposed	Change	Jul 12	Proposed
Below -20%	84,986	3%	908	11%	28.71	21.57	-25%	260.62	195.79	(64.83)	2.9%	2.2%
> -20% to -15%	92,878	3%	1,055	17%	25.05	20.64	-18%	264.30	217.82	(46.48)	2.6%	2.2%
> -15% to -10%	188,128	6%	916	16%	23.17	20.28	-12%	212.29	185.79	(26.50)	2.2%	1.9%
> -10% to -5%	205,268	6%	819	15%	21.63	20.01	-8%	177.07	163.78	(13.29)	2.1%	2.0%
> -5% to 0%	289,376	9%	660	14%	19.38	18.89	-3%	127.94	124.69	(3.24)	1.6%	1.6%
> 0% to 5%	511,863	15%	493	13%	17.15	17.57	2%	84.46	86.54	2.08	1.1%	1.2%
> 5% to 10%	829,860	25%	399	13%	15.41	16.56	8%	61.49	66.10	4.61	0.9%	0.9%
> 10% to 15%	690,192	21%	414	12%	14.42	16.18	12%	59.66	66.94	7.27	0.9%	1.0%
> 15% to 20%	337,330	10%	452	13%	14.26	16.72	17%	64.50	75.64	11.13	1.0%	1.1%
> 20% to 25%	97,378	3%	411	11%	14.06	17.15	22%	57.83	70.52	12.68	0.9%	1.1%
> 25% to 30%	18,075	1%	453	11%	13.99	17.65	26%	63.33	79.89	16.57	1.4%	1.8%
> 30% to 35%	7,995	0%	316	12%	13.22	17.43	32%	41.76	55.04	13.28	2.0%	2.7%
> 35% to 40%	221	0%	269	9%	13.41	18.33	37%	36.00	49.24	13.24	1.8%	2.5%
> 40% to 45%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 45% to 50%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 50% to 55%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 55% to 60%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 60% to 65%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 65% to 70%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 70% to 75%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 75% to 80%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 80% to 85%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 85% to 90%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
> 90% to 95%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
Above 95%	-	0%	-	0%	-	-	0%	-	-	-	0.0%	0.0%
Group Total	3,353,549	100%	530	13%	18.23	18.05	-1%	96.71	95.76	(0.94)	1.3%	1.3%

SCE Bill Calculator

SCE - Residential OIR Rate Design and Bill Impact Analysis Model

User Define Input Table

# of Tiers =>	2-Tiers
Enter T4 or T5 Delta (cents/kWh) =>	0.00
Include SB695 90% Cap?	☑
T1 Increase (Over Current)	0.00%
T2 Increase (Over Current)	0.00%

Sum/Basic | Win/Basic | Sum/All-Ele | Win/All-Elec

Apply New Baseline % here =>		
	Tier-1 =>	100.0%
	Tier-2 =>	130.0%
	Tier 3 =>	200.0%
	Tier 4 =>	300.0%
	Tier 5 =>	300.0%

Min Charge Non-CARE ($/Mo.)	$ -
Min Charge CARE ($/Mo.)	$ -
Customer Charge Type	Flat Customer Charge
Demand Differential Break Point (kW)	6
Flat customer Charge $ / Month	$ -

CARE Section CARE

	CARE	CARE-Lite
T1 Energy Care Discount	20%	10%
T2 Energy Care Discount	20%	10%
T3 Energy Care Discount	24%	10%
T4 Energy Care Discount	24%	10%
T5 Energy Care Discount	24%	10%
Fixed Charge Care Discount	20%	10%
CARE Fixed Credit - $ /Month	$0.0	$0.0

CARE-Lite Break Point by Income: >=$75K, >=$35K, >=$50K, >=$75K

TOU Summer On-Peak Surcharge - ($/kWh) 0.00000

RevenueNeutralCheck=0 (yes) (0)

CLICK HERE TO CALCULATE

Estimated Residential Rate Calculated based on Inputs

Non CARE	Tier	Forecast Sales (GWh)	% of Sales	Pre Crisis 2001 Rate	2012 GRC Rate	3 Tiers Rate	
	1	10,455	54%	12.0	13.0	13.0	
	2	2,114	11%	14.2	16.0	16.0	
	3	3,233	17%	14.2	27.1	30.4	
	4	2,028	11%	14.2	31.1	30.4	
	5	1,449	8%	14.2	31.1	30.4	26.93422057
Flat customer Charge $ / Month				1.00	0.88	0.00	
						0.00	
Min Charge $/Mo.					-	0.00	
TOU On-Peak Surcharge - ($/kWh)						0.00000	
TOU Off-Peak Credit - ($/kWh)						0.00000	

CARE	Tier	Sales (GWh)	% of Sales	Pre Crisis 2001 Rate	Rate	CARE Rate
	1	4,925	62%	10.1	8.5	8.5
	2	870	11%	12.0	10.7	10.7
	3	1,168	15%	12.0	20.7	22.3
	4	636	8%	12.0	20.7	22.3
	5	312	4%	12.0	20.7	22.3
Flat customer Charge $ / Month				0.85	0.70	0.00
					-	0.00
Min Charge $/Mo.					-	0.00
CARE Fixed Credit - $ /Month						$0.00
TOU On-Peak Surcharge - ($/kWh)						0.00000
TOU Off-Peak Credit - ($/kWh)						0.00000

STEP 1 Calculate NON TOU Rates → STEP 2 Calculate TOU Rates → STEP 3 : Calculate Bill impact analysis

CLICK HERE FOR HELP

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

Select TOU Type here TOU-Lite

Effective CARE Discount % => 25.9%
Effective CARE-LITE Discount % => 0.0%

Flat Customer Charge

Demand Differential Break Point 5

Flat customer Charge $ / Month $0.00

Used Input Baseline Credit ($/kWh) 0.0639
Calculated Baseline Credit ($/kWh) 0.06390

RevenueNeutralCheck=0 (yes) 341

CLICK HERE TO CALCULATE

Estimated TOU Option

Period	TOU-Lite cents/kWh		Enter Rate Ratio	TOU-CARE cents/kWh
Sum On-Peak	46.6	Summer On/Off	2.25	33.6
Sum Mid-Peak	23.8	Summer Mid/Off	1.15	16.7
Sum Off-Peak	20.7			14.4
Win Mid-Peak	21.9	Winter Mid/Off	1.15	15.3
Win Off-Peak	19.0			13.1
Flat customer Charge $ / Month	$0.00	Adjust Summer / Winter Differential ? =>	☑	$0.00
	$0.00			$0.00
Baseline Credit ($/kWh)	($0.06390)			($0.06390)

% of Gen Rev. Shift: Sum to Win 10%

Elasticity	
NON-CARE Low Usage	(0.200)
NON-CARE High Usage	(0.200)
CARE Low Usage	(0.200)
CARE High Usage	(0.200)

kWh Breakpoint
600
500

Legend:
- USER Input
- Output Rates
- Rate Ratio/Revenue Shifting Inputs

Baseline Region	Cost Based Rate	2012 GRC Rate	Proposed Non TOU 3 Tiers Rate	Proposed TOU Rate
6	17.4	18.4	18.3	18.3
8	17.8	19.3	19.2	19.2
9	17.5	19.8	19.7	19.8
10	17.2	20.1	20.1	20.2
13	17.4	20.6	20.7	20.7
14	17.8	19.1	19.1	19.7
15	18.1	19.5	19.4	20.6
16	19.4	17.0	17.0	17.6
Non-CARE System	17.6	19.4	19.4	19.5

Baseline Region	Cost Based Rate	2012 GRC Rate	Proposed Non TOU 3 Tiers Rate	Proposed TOU Rate
6	18.0	11.1	11.0	10.8
8	16.3	12.0	12.0	11.4
9	16.8	12.3	12.3	12.0
10	17.2	12.7	12.9	12.8
13	15.7	13.9	14.2	13.2
14	16.8	12.3	12.4	12.2
15	16.4	12.3	12.4	13.1
16	14.8	13.2	13.4	11.6
CARE System	16.8	12.4	12.4	12.1
System -Total	17.4	17.4	17.4	17.4

Rate Design Measures	Current Rate Levels	Proposed Rate Levels Non-TOU	Proposed Rate Levels TOU
Total Estimated CARE Def. Rev. ($M) =>	$ 344	$ 348	$ 444
Residential CARE Subsidy ($M) =>	$ 86	$ 87	$ 111
Non Res. Estimated CARE Subsidy ($M) =>	$ 258	$ 261	$ 334
Effective CARE Discount % =>	34%	26%	26%
% of Rev. Req. met by Fixed Charges=>	1%	0%	0%
Sum of Absolute Value Deviations from Cost	35.4%	36.2%	27.8%
Change in Usage Due to Elasticity		14.4 GWh	-121.0 GWh
Ratio of Δ in kWh to Total kWh		0.05%	-0.45%

Baseline Summary :- 55% Summer Basic 55%Winter Basic 60%Summer ALL-Elec 70%Winter All-Elec

Climate Zone	Summer/Basic	Summer/All Electric	Winter/Basic	Winter/All Electric
5	14.3	18.3	16.3	32.1
6	9.9	47.5	10.3	14.2
8	10.6	14.0	9.7	13.8
13	19.3	10.9	11.6	26.6
14	16.3	12.7	11.2	22.9
15	41.9	12.8	8.6	17.7
16	12.4	13.0	11.7	25.7
9	14.0	18.9	11.3	15.4
10	16.3	11.6	11.5	18.5

Marginal Cost Input

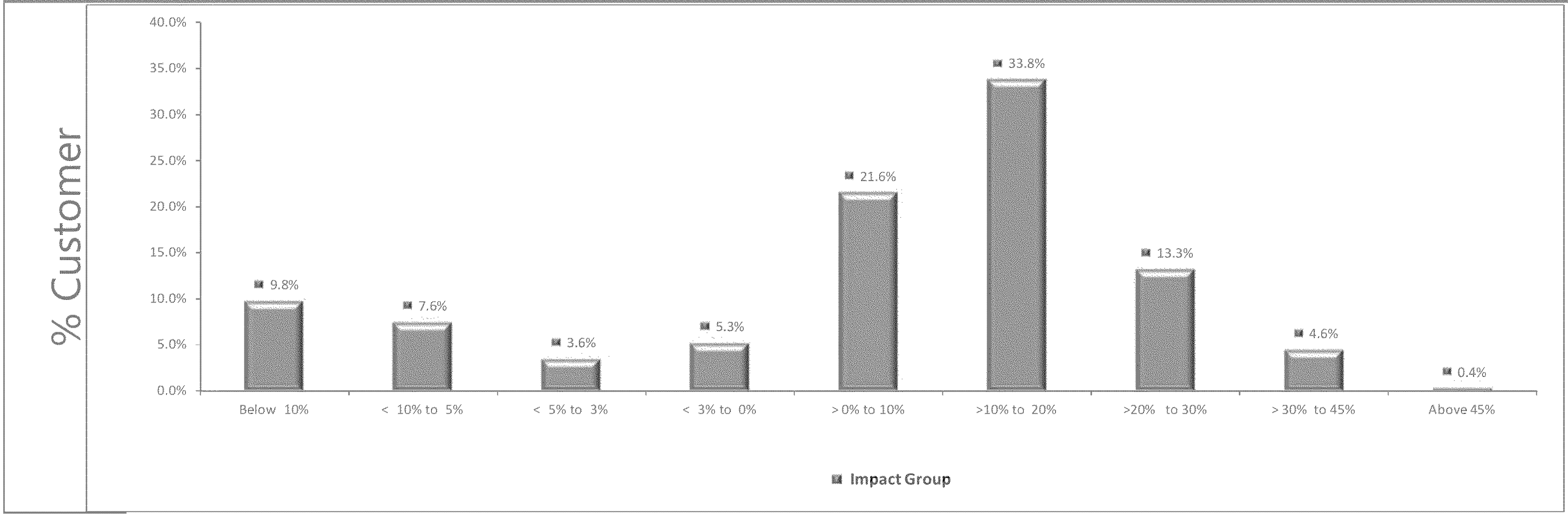
Generation MEC	Cents /kWh
Summer On Peak	0.05938
Summer Mid Peak	0.04588
Summer Off Peak	0.03162
Winter Mid Peak	0.04955
Winter Off Peak	0.03781
Generation Capacity $/kW Year	143.87
Distribution	
Facility Related Dmd $/kW/Month	5.17
Customer Charge $/Month	12.10

CLICK HERE TO RESET DEFAULT SCE MARGINAL COST

Range 3

Bill impact Analysis by % Impact

NON CARE (CEC : All 2012 GRC Rate Vs. Proposed TOU)



Impact Group	Customer				Average			Elasticity	Cents/kWh		%	Monthly $		Average	Average	
%	Number	% Customer	% Single	%Multi	Monthly kWh	Annual Load Factor	% On Peak	Average Monthly kWh	2012 GRC Rate	Proposed	Change	2012 GRC Rate	Proposed	Monthly $ Change	Current Annual Bill as a % of Income	Proposed Annual Bill as a % of Income
Below -10%	281,943	9.8%	12.0%	2.5%	1,333	18.3%	6.2%	43	25.1	21.0	-16.1%	$334.18	$280.40	-$53.77	2.6%	2.2%
< -10% to -5%	217,019	7.6%	9.3%	1.7%	903	17.3%	6.6%	15	22.1	20.4	-7.8%	$199.71	$184.22	-$15.48	2.0%	1.8%
< -5% to -3%	102,018	3.6%	4.4%	0.7%	865	16.0%	7.4%	7	21.3	20.5	-3.8%	$183.99	$176.94	-$7.05	1.7%	1.6%
< -3% to 0%	152,230	5.3%	6.1%	2.6%	749	15.1%	6.6%	2	20.0	19.8	-1.4%	$150.13	$148.00	-$2.13	1.8%	1.7%
> 0% to 10%	620,181	21.6%	23.3%	16.0%	602	13.6%	7.1%	(6)	18.6	19.5	4.7%	$112.25	$117.53	$5.27	1.3%	1.3%
>10% to 20%	969,800	33.8%	29.3%	49.3%	387	12.0%	6.5%	(12)	15.6	17.9	14.8%	$60.36	$69.28	$8.93	0.8%	1.0%
>20% to 30%	381,047	13.3%	11.1%	20.7%	372	11.9%	8.0%	(20)	14.5	18.0	23.8%	$54.09	$66.98	$12.90	0.8%	1.0%
> 30% to 45%	130,758	4.6%	4.3%	5.5%	354	10.8%	12.1%	(29)	14.4	19.4	34.9%	$50.90	$68.68	$17.78	0.8%	1.0%
Above 45%	11,070	0.4%	0.2%	1.0%	314	8.2%	16.5%	(39)	13.8	20.7	50.2%	$43.37	$65.14	$21.77	1.1%	1.7%
Group Total	2,866,066	100.0%	100.0%	100.0%	585	13.6%	6.9%	[illegible]	19.4	19.5	0.4%	[illegible]	$114.87	[illegible]	1.4%	1.4%

SDG&E Bill Calculator

RESET INPUTS

Select Options and Inputs:

SDG&E Cost Based Reference (Pre Revenue Neutral Adjustment)

Distribution
Two cost components: Customer costs and Distribution Demand costs

Action Required

Customer Cost:	Basic Service Fee		*$11.65/month/customer*

**Rate recovery options: Basic Service Fee which is a $/month customer change or recovery through energy rates which also gives the option of having a minimum bill.*

Basic Service Fee Amount:	$0.00	< Enter $/month	Residual Customer Cost per kWh: 2.4 Cents per kWh
Distribution Demand:	Fixed Charge Demand Adder		*$6.40/kW/NCD*

**Rate recovery options: Non Coincident Demand Charge which is a $/kW charge, Fixed Charge Demand Adder which is a $/month charge based on maximum demand, and recovery through energy rates.*

Fixed Charge Demand Adder:			
0 to <3 kW Adder	$0.00	< Enter $/month	
3 to <7 kW Adder	$0.00	< Enter $/month	
7 to <13 kW Adder	$0.00	< Enter $/month	
13 and above kW Adder	$0.00	< Enter $/month	
			Residual Demand Cost per kWh: 4.9 Cents per kWh
Include SGIP, CSI, & Demand Response in:	Distribution Rate		

**This is only the movement of the current "miscellaneous distribution rate" to PPP or have it remain in Distribution. It does not affect the total rate.*

Commodity
Two cost components: Capacity costs and energy costs

Capacity:	Recover through energy rates		*$7.07/kW/On Peak Summer Demand*

**Rate recovery options: On Peak Demand Charge which is a $/kW charge or recovery through energy rates.*

			Residual Capacity Cost per kWh (Summer): 3.82 Cents per kWh
Energy:	Time of Use		*Time of Use (TOU)*

**Rate recovery options: Time of Use rates (On peak, Semi peak, Off peak) or non time differentiated rates.*

Define TOU Periods by Ratio or Cent Differential:	Ratio	< Enter 'Ratio' or 'Cent'	*Example: Ratio of 2.0 On/Off and 1.5 Semi/Off could yield On Peak=20 Semi Peak=15 and Off Peak=10*
Summer On/Off Relationship:	2.00	< Enter Ratio On Peak/Off Peak	
Summer Semi/Off Relationship:	1.50	< Enter Ratio Semi Peak/Off Peak	*Example: Cent Difference of 4 On/Semi and 2 Semi/Off could yield On Peak = 18 Semi Peak 14 and Off Peak 12*
Winter On/Off Relationship:	1.50	< Enter Ratio On Peak/Off Peak	
Winter Semi/Off Relationship:	1.25	< Enter Ratio Semi Peak/Off Peak	
Seasonal Rate Adjustment Percent Difference of Seasonal EECC:	75%	< Enter %	Seasonal Difference 5.04 Cents/kWh x 0.75 = 3.78 Cents/kWh

**Adjusts the total rate differential between summer and winter. Currently all commodity capacity is in the summer, less than 100% makes the seasonal differential smaller.*

Total Rate Adjustment Component (TRAC)
Choosing the tier structure

Number of Tiers:	2	< Enter 2, 3, 4 or Flat
% Differential or Cent/kWh Differential Between Tiers:	Cent	< Enter 'Percent' or 'Cent'
Tier 1 to Tier 2 Differential (Cents/kWh):	10.0	< Enter cents/kWh

***Not in compliance with SB695 Tier 1 and Tier 2 Levels**

California Alternate Rates for Energy (CARE)
Choosing the low income assistance mechanism

Set pre discount CARE Tier 1 and Tier 2 Rate equal non CARE:	No	< Enter 'Yes' or 'No'

**Option to set the pre discount CARE rate equal to non CARE rate minus DWR BC, CSI, and CARE surcharge exemption. Currently the rates CARE customers pay include rate differences prior to the discount and exemptions.*

Type of CARE Discount:	Percent Discount	

**2 Options: % discount off the total bill or a $/month discount*

CARE Energy Discount % :	20%	< Enter %
	20%	
	20%	
Estimate of revenue shift to non Residential classes:	$ 0.1 Million	*Calculate rates FIRST; refer to table in cells I59:M65 for details of the CARE revenue shift estimation

Scenario Description: Joint Solar Parties

Tiers with TOU Overlay

SCHEDULE DR (CARE)

	Current Tier Sturcture (9/1/2012 Rates)	User Selected Rate Design
Basic Service Fee		
0 to <3 kW	0.00	0.00
3 to <7 kW	0.00	0.00
7 to <13 kW	0.00	0.00
13 and above kW	0.00	0.00
Non-Coincident Demand	0.00	0.00
On Peak Demand		
Summer	0.00	0.00
Winter	0.00	0.00
Summer Energy		
Baseline Energy	0.14334	0.17729
101% to 130% of Baseline	0.16580	0.27729
131% to 200% of Baseline	0.27982	0.27729
Above 200% of Baseline	0.29982	0.27729
Winter Energy		
Baseline Energy	0.14334	0.13488
101% to 130% of Baseline	0.16580	0.23488
131% to 200% of Baseline	0.26239	0.23488
Above 200% of Baseline	0.28239	0.23488
Minimum Bill	0.17	0.00
Summer On-Peak Surcharge	0.00000	0.03629
Summer Off-Peak Credit	0.00000	0.03629
Winter On-Peak Surcharge	0.00000	0.01078
Winter Off-Peak Credit	0.00000	0.01078

TOU with Tier Overlay

SCHEDULE DR (CARE)

	Current Tier Sturcture (9/1/2012 Rates)	User Selected Rate Design
Basic Service Fee		
0 to <3 kW	0.00	0.00
3 to <7 kW	0.00	0.00
7 to <13 kW	0.00	0.00
13 and above kW	0.00	0.00
Non-Coincident Demand	0.00	0.00
On Peak Demand		
Summer	0.00	0.00
Winter	0.00	0.00
Summer Energy		
On-Peak	0.29982	0.31359
Semi-Peak	0.29982	0.27729
Off-Peak	0.29982	0.24100
Winter Energy		
On-Peak	0.28239	0.24565
Semi-Peak	0.28239	0.23488
Off-Peak	0.28239	0.22410
Minimum Bill	0.17	0.00
Summer Energy Credits:		
Baseline Energy Credit	0.15648	0.10000
101% to 130% of Baseline Credit	0.13402	0.00000
131% to 200% of Baseline Credit	0.02000	0.00000
Winter Energy Credits:		
Baseline Energy Credit	0.13905	0.10000
101% to 130% of Baseline Credit	0.11659	0.00000
131% to 200% of Baseline Credit	0.02000	0.00000

Tiers with TOU Overlay

SCHEDULE DRLI (CARE) - With % Discount and CARE Surcharge Exemption

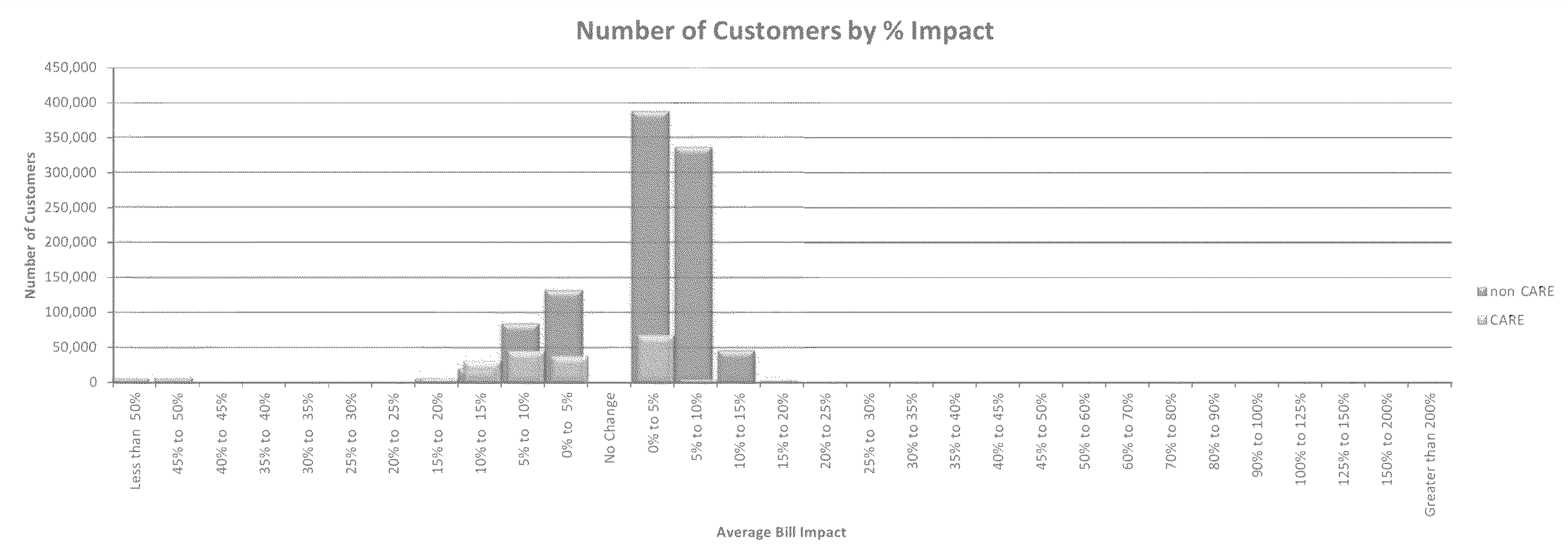
	Current Tier Sturcture (9/1/2012 Rates)	User Selected Rate Design
Basic Service Fee		
0 to <3 kW	0.00	0.00
3 to <7 kW	0.00	0.00
7 to <13 kW	0.00	0.00
13 and above kW	0.00	0.00
Non-Coincident Demand	0.00	0.00
On Peak Demand		
Summer	0.00	0.00
Winter	0.00	0.00
Summer Energy		
Baseline Energy	0.09958	0.11154
101% to 130% of Baseline	0.11620	0.19154
131% to 200% of Baseline	0.17557	0.19154
Above 200% of Baseline	0.17557	0.19154
Winter Energy		
Baseline Energy	0.09958	0.07760
101% to 130% of Baseline	0.11620	0.15760
131% to 200% of Baseline	0.16417	0.15760
Above 200% of Baseline	0.16417	0.15760
Minimum Bill	0.14	0.00
Summer On-Peak Surcharge	0.00000	0.02904
Summer Off-Peak Credit	0.00000	0.02904
Winter On-Peak Surcharge	0.00000	0.00862
Winter Off-Peak Credit	0.00000	0.00862

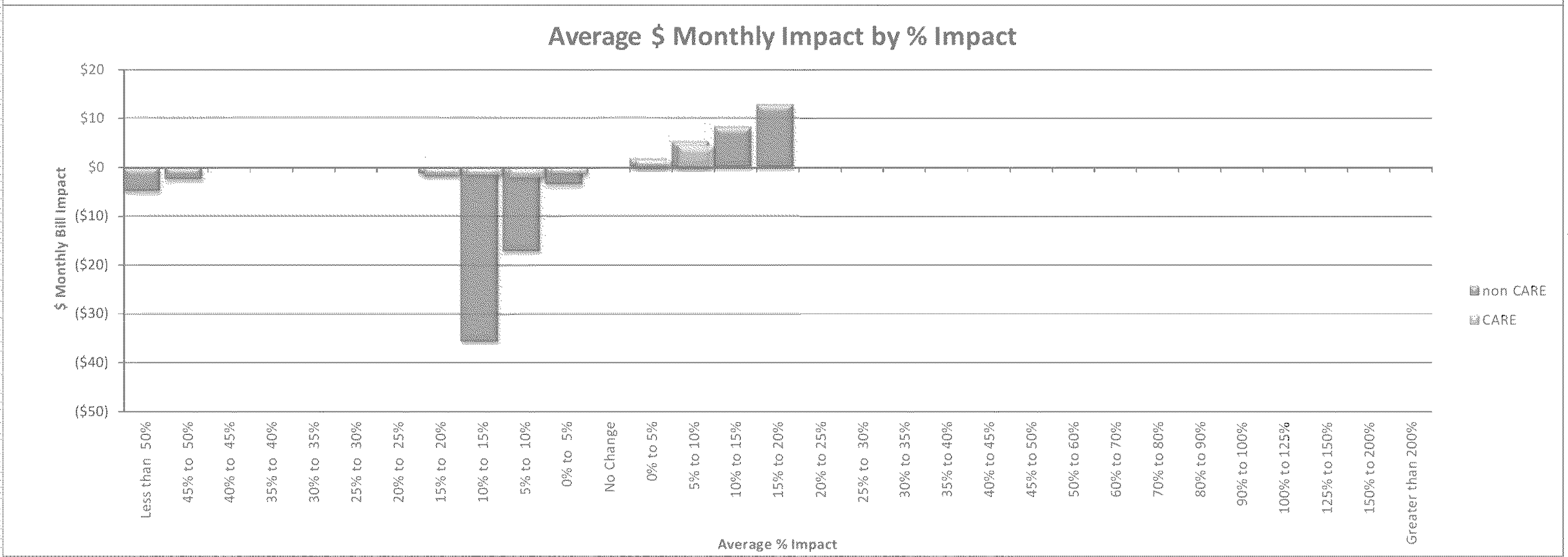
TOU with Tier Overlay

SCHEDULE DRLI (CARE) - With % Discount and CARE Surcharge Exemption

	Current Tier Sturcture (9/1/2012 Rates)	User Selected Rate Design
Basic Service Fee		
0 to <3 kW	0.00	0.00
3 to <7 kW	0.00	0.00
7 to <13 kW	0.00	0.00
13 and above kW	0.00	0.00
Non-Coincident Demand	0.00	0.00
On Peak Demand		
Summer	0.00	0.00
Winter	0.00	0.00
Summer Energy		
On-Peak	0.17557	0.22057
Semi-Peak	0.17557	0.19154
Off-Peak	0.17557	0.16250
Winter Energy		
On-Peak	0.16417	0.16622
Semi-Peak	0.16417	0.15760
Off-Peak	0.16417	0.14898
Minimum Bill	0.14	0.00
Summer Energy Credits:		
Baseline Energy Credit	0.07598	0.08000
101% to 130% of Baseline Credit	0.05937	0.00000
131% to 200% of Baseline Credit	0.00000	0.00000
Winter Energy Credits:		
Baseline Energy Credit	0.06458	0.08000
101% to 130% of Baseline Credit	0.04797	0.00000
131% to 200% of Baseline Credit	0.00000	0.00000

Scenario Description: Joint Solar Parties





*Lower limit fixed at $50 for graphing purposes. For ranges with bill impacts of less than $50 refer to the chart below.