

R.12-06-013

**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)

**Reply Comments of California Center for Sustainable Energy on  
Residential Rate Design Proposals**

**California Center for Sustainable Energy**

**July 26, 2013**

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**I. INTRODUCTION**

The California Center for Sustainable Energy (CCSE) is pleased to provide reply comments in response to the residential rate design proposals put forward by parties as part of this OIR. Though CCSE has not had the resources to actively participate in each phase of this proceeding, we have reviewed and appreciated all parties' proposals as well as opening comments, and we commend the Commission and stakeholders for the thoughtful discussion on this extremely important and timely issue. CCSE brings a unique perspective as a non-profit, mission-driven organization committed to the realization of California's clean energy future that engages with all levels of the marketplace, from individual consumers to policymakers, and we provide these brief reply comments to contribute to the already robust discussion and highlight a few key areas of importance.

## II. SUMMARY

- The current rate structure is unsustainable and in need of reform
- Rate design cannot and should not be disconnected from state policy goals
- The presence of fixed costs does not itself justify recovery through fixed charges; however, some fixed charges may be reasonable and necessary for cost-recovery true-ups
- Cross-subsidies, in moderation, are not always undesirable
- Time-varying rate structures should be pursued in a more deliberate fashion
- Education and outreach to customers is critical and should be pursued at both the IOU and statewide level through the Energy Upgrade California™ brand education platform

## III. GENERAL COMMENTS

CCSE agrees with the Commission and parties that the current rate structure is unsustainable and in dire need of overhaul. The legislative restrictions placed on rates in the aftermath of the energy crisis have resulted in myriad unintended consequences and created distinct winners and losers throughout the overall marketplace.

Conservation signals are strongly targeted at households with usage in upper tiers, while lower-tier consumers receive comparatively weak signals. It is of the utmost importance that California quickly and decisively deals with these issues in order to provide stability and predictability in the marketplace for sustainable energy technologies and to build a foundation for achieving our climate and energy goals.

## IV. CONSERVATION SIGNALS AND DEMAND-SIDE MANAGEMENT

During the June 25 workshop, a number of parties expressed concern about the use of rates to achieve public policy goals, such as incentivizing distributed generation and

energy efficiency. CCSE notes that at least seven out of the ten principles the CPUC articulated for rate design contained in Attachment A to the ALJ's Ruling Requesting Residential Rate Design Proposals are, at their core, policy objectives. To disconnect the mechanism by which consumers receive price signals from the policy choices the state has made would be highly detrimental to our ability to realize our policy goals, whether they be climate goals, equity goals, or public safety.

Rate design can and must send appropriate price signals to consumers to reduce their energy use through conservation and adoption of demand-side management technologies. This principle is largely competitive with the goal of achieving cost-based rates that are closely aligned with cost-causation principles. As stated by SCE, "...the usage-cost relationship actually supports a declining block rate structure"<sup>1</sup>, which would send the message to consumers, "*Use more energy and you will pay less for it*", precisely the opposite message we should be sending. Decades ago, when inclining block rates were adopted in place of declining blocks, it was decided by regulators that the imperative to conserve energy resources outweighed the need for customer rate structures to precisely mirror cost-causation principles. We posit that nothing has changed since the 1970s that should modify this path. To the contrary, with our current understanding of the likely consequences of climate change, the imperative to reduce energy usage is far more critical today than ever.

### **Rate Design and the Value Proposition of Sustainable Energy Technologies**

Embedded in rate structures and their resulting price signals to consumers is the value proposition for reducing energy usage both behaviorally and through the adoption of demand-side management technologies. The rate structure in place today

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<sup>1</sup> *Opening Comments of Southern California Edison Company (U 338-E) on Residential Rate Design Proposals*. P. 10

has placed a specific a value on each kWh reduced (or consumed) by a customer. From this, the value proposition for every demand-side management measure, from attic insulation to rooftop solar, is derived. The artificially inflated chasm that has developed between lower and upper tier rates as a result of AB1X and SB 695 has profoundly shaped the current marketplace for sustainable energy technologies, and while this outcome was unintended, the Commission must carefully consider the impact of any rate design changes on the value proposition for such technologies. For this reason, SEIA/Vote Solar recommend that all current solar customer-generators be grandfathered into the current rate structure in order to avoid severe negative impacts on the performance of these customers' long-term investments. We note that customers who have made significant investments in aggressive energy efficiency (for example, a whole-house retrofit) face an equal risk that their investment is suddenly "under water".

It would likely be impractical to attempt to determine which customers have made investment decisions worthy of their being grandfathered into the rate structure that existed at the time they made their decision; however, we caution that the Commission should not take lightly or ignore the connection between customers' investment decisions and rate structures highlighted by SEIA/Vote Solar.

The Commission recently issued a Proposed Decision on Energy Efficiency Financing Pilots in R.09-11-014. The Assigned Commissioner has made it clear that financing should be a central strategy for driving accelerated adoption rates of energy efficiency measures, and an explicit goal of the proposed financing pilots is to demonstrate to financial institutions that EE loans are low-risk and will perform significantly better than traditional unsecured loans, in large part due to the cash flow created by customer bill savings. This objective will be completely undermined if the message to consumers and lending institutions is, as SCE states, "all customers are

subject to the risk of rate design changes”. The Commission should not encourage consumers to undertake 10-30 year investments in whole-house retrofits and solar PV and simultaneously allow for rate changes that may significantly harm the financial performance of those same investments.

CCSE acknowledges that rate design is not the only tool for meeting state policy goals, nor is state policy achievement the only objective of rate design. It is, however, crucial that rate design not create additional barriers to reaching our goals. To this end, CCSE appreciates the analysis of rate structure impacts on sustainable technology adoption provided by Sierra Club in its proposal, and we urge the Commission to review and consider its findings. A real-world illustration of how rate structures impact state policy goals can be found by comparing the current payback period for an average commercial customer in various IOU service territories. Figure 1 displays the payback periods for an average commercial solar PV project in different IOU service territories. All variables are held constant, save for the differing rate structures that such a customer would be on depending his/her service territory. A small commercial customer in SDG&E service territory is faced with a dramatically different investment scenario than a customer with identical characteristics across the street in SCE territory. This inconsistency has major implications for the achievement of state policy goals set for the commercial-sector CSI program, as customers are far less willing to invest in solar PV with a 30+ year payback period than they are with a 16-18 year horizon.

Utility	Applicable Tariff	Avg Value of Solar	Simple Payback
PG&E	A-1	\$0.1914/kWh	16.6
SCE	TOU-GS1	\$0.1738/kWh	18.3
SDG&E	AL-TOU	\$0.1036/kWh	30.7

Figure 1: Simple Payback on Commercial PV System Across IOU Territories<sup>2</sup>

## V. FIXED CHARGES

Fixed charges are commonly paid by many utility consumers on a regular basis, from cable services to cell phones. In the context of energy usage, however, there is a very real danger of attenuating conservation signals and the overall value proposition of demand-side management technologies for customers. PG&E asserts that fixed charges are necessary, among other reasons, to reduce customer bill volatility and presents a graph showing the volatility of differing rate structures to illustrate this point.<sup>3</sup> This graph is somewhat misleading, however, as it only compares the current extremely steep 4-tier IBR structure to a far gentler 2-tier structure plus either a \$10 or

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<sup>2</sup> Average Value of Solar: CCSE used the same hourly PV profile generated by PVWatts and binned the production according to each IOU's applicable TOU schedule and applied these binned values to each tariff using our proprietary rate analysis tool.

Production Density: Production from a PVWatts generated profile for a 1kWac San Diego based fixed axis array with a 13° tilt, 120° azimuth and a 87% DC to AC overall efficiency.

Cost per Watt: Taken from GoSolarCalifornia website for systems >10kW

<sup>3</sup> *Opening Comments of Pacific Gas and Electric Company on Rate Design Proposals*. July 12, 2013. P. 26.

\$20 fixed charge. It is impossible to discern from this graphic how much of the reduction in bill volatility is attributed to the collapsing of tiers versus the presence of a fixed charge. The fact that doubling the fixed charge from \$10 to \$20 results in only a miniscule decrease in bill volatility casts further doubt on this rationale for fixed charges. Imposing fixed charges between \$10 and \$20 for the purpose of mitigating bill volatility would place undue emphasis on just one aspect of Principle 6 at great expense to Principles 1, 2, 4, 5, and possibly 3.<sup>4</sup>

CCSE takes issue with the notion put forth by SDG&E that fixed charges are needed to send “accurate price signals.”<sup>5</sup> This is a misappropriation of a valuable concept in rate design. It may be the case that perfectly aligning rate design with cost-causation principles necessitates fixed charges. A “price signal” however, is generally understood to be a message that prompts a reaction on the part of the customer. A signal that communicates no actionable information to its recipient is arguably meaningless. The only response to a fixed charge available to a customer is to pay the fixed charge, whereas useful price signals are designed to elicit a desired response, such as shifting usage away from peak periods or reducing overall energy consumption. While we recognize the need to better align rate design with cost-causation principles, SDG&E appears to focus on this one objective at the expense of many other equally worthy rate design goals.

CCSE opposes fixed charges set for the purpose of recovering allegedly-fixed costs or to reduce upper tier rates; however, there are instances in which some level of fixed

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<sup>4</sup> Principle #6 from the Attachment A in the *Administrative Law Judge’s Ruling Requesting Residential Rate Design Proposals* states, “Rates should be stable and understandable and provide customer choice”.

<sup>5</sup> *Comments of San Diego Gas & Electric Company on Residential Rate Design Proposals Submitted Pursuant to Ruling of Administrative Law Judge (“ALJ”) McKinney and Scoping Memo and Ruling of Assigned Commissioner*. July 12, 2013. P.10.



charge is warranted. For example, as Severin Borenstein pointed out at the June 25 workshop, fixed charges may be useful in collecting unrecovered revenue once marginal energy costs are thoroughly vetted and determined. CCSE could potentially support a nominal fixed charge under these auspices, with the caveat that the processes for both determining marginal costs and calculating the shortfall for recovery in fixed charges must be completely transparent and open to input from all stakeholders. CCSE does not, however, support the use of fixed charges to recover what are alleged to be “fixed” costs. As demonstrated in the record of R.12-06-013, what constitutes a “fixed” cost versus a variable one is highly debatable. Furthermore, essentially all commodities purchased by consumers involve some level of fixed costs which are nearly always recovered through volumetric sales; the presence of fixed costs does not itself justify recovery through fixed charges.

## **VI. CROSS-SUBSIDIES**

Since incremental volumetric usage is not correlated to increasing utility costs, any inclining block rate design (and some TOU designs) is automatically in conflict with principles 2 and 3 which state that “rates should be based on marginal cost” and “rates should be based on cost-causation principles”. In an inclining block rate structure, this inevitably leads to some “cross-subsidization” among ratepayers, and we do not view this as inherently negative. The notion that residential customers with above-average energy use might effectively be paying for other customers to reduce their usage or maintain lower usage levels in fact makes sense from a societal perspective: it is hardly inappropriate that those who are contributing more to negative social and environmental externalities be required to pay a higher cost for those externalities, nor is it inappropriate for some of those payments to accrue as financial benefits to those

customers who contribute significantly less to such externalities, but who are nevertheless impacted by them.

Thus, the question becomes not whether any cross-subsidies should exist in residential rates, but rather what level of such subsidies is appropriate. Ideally, the level of cross-subsidy would be equal to the economic impact of the incremental level of negative externalities experienced by lower-usage customers as a result of higher-usage customers. Such analysis is clearly cost-prohibitive, and so the Commission must balance the need to encourage conservation and demand reduction with the many other principles outlined by the Commission.

## VII. TIME-OF-USE RATE STRUCTURES

CCSE agrees with CLECA that, “Absent demand charges, which are too complex for residential customers, TOU rates are the best means to encourage reduction of peak demand.”<sup>6</sup> Since the greenhouse gas emissions associated with marginal electricity generation are significant, it is crucial that customers be encouraged to curb their demand during key time periods. While traditionally, this has meant reducing load during system peak, this could change significantly as higher and higher percentages of peak load are served by intermittent renewables, particularly solar. In a very high solar penetration scenario, it is possible that in order to maximize GHG reductions in the future, customers would need to be encouraged to shift their load toward system peak and away from evening hours, when the generation mix is comprised of largely fossil-fuel powered stations. There are many uncertain variables that will ultimately determine when and how customers should shift their energy usage patterns, and TOU

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<sup>6</sup> *Comments of the California Large Energy Consumers Association on the Residential Rate Design Proposals Filed May 29, 2013*. July 12, 2013. P. 8.

rates will be an indispensable tool for communicating these complex messages to customers.

We appreciate the need to maximize customer acceptance and understanding of TOU rates, as well as the imperative to mitigate any significant bill impacts; however, within these constraints, we urge the Commission to move as quickly as possible towards wide scale adoption of TOU rates.

### **VIII. CUSTOMER EDUCATION AND OUTREACH**

It has been widely acknowledged that the majority of residential customers currently do not know how they are being charged for energy. Few are aware of increasing block rates and some mistakenly think they are actually on TOU rates. If customers do not understand how their energy use is impacting their bill, then it may not be possible to have a productive discussion about which rate structure has the strongest conservation effect. This is exemplified in the back-and-forth debate over whether or not inclining block rates lead to more conservation of energy.

Ratepayer advocates, alternative energy industry groups, and environmental organizations cite a great deal of research showing that inclining block rates produce the greatest conservation signals, while others refute such studies and cite research showing that customers respond to average and not marginal prices, concluding therefore that inclining block structures have no conservation effect. It is likely, however, that if customers actually understood their inclining block rate structure, they would in fact begin to adjust their consumption behavior in response to the marginal price of electricity. Until customers are empowered with the knowledge required to respond to their rate structures, empirical evidence regarding which rate structure produces the greatest savings in the real world will not be particularly useful for policy discussion.

CCSE agrees with TURN's assessment of the state of customer education with regard to electricity rates.<sup>7</sup> That the vast majority of customers do not understand how they are being charged for electricity is an unacceptable and troubling situation that must be changed with all possible speed. In D.12-05-015, the Commission determined that rate education should be a part of the Energy Upgrade California™ statewide marketing, education, and outreach campaign.<sup>8</sup> Regardless of what rate structure is adopted going forward, we agree with the Commission, DRA, TURN, and others that extensive education and outreach is necessary at all levels.

We encourage the Commission to utilize the Energy Upgrade California™ platform to communicate general messages about rate structures to customers. While specific details on residential rates will vary by IOU territory, broad concepts such as inclining block rates and TOU concepts can be effectively communicated in a generic way to both spur immediate responses from customers and encourage them to learn more from their utility about their specific rate schedule. As the statewide implementer and coordinator of the Energy Upgrade California™ statewide ME&O campaign, CCSE would be pleased to work with the Commission, utilities and other stakeholders to dramatically increase electricity rate literacy among residential customers.

## IX. CONCLUSION

CCSE thanks the Commission for the opportunity to provide these reply comments regarding residential rate design proposals. We look forward to a productive ongoing discussion regarding the future of residential rate structures in California.

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<sup>7</sup> *TURN Comments on Rate Design Proposals*. P. 31.

<sup>8</sup> D.12-05-015. *Decision Providing Guidance on 2013-2014 Energy Efficiency Portfolios and 2012 Marketing, Education, and Outreach*. P. 292 and 300.

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A handwritten signature in black ink, appearing to read "Sachu Constantine". The signature is stylized and cursive.

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