BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Own Motion to Conduct a Comprehensive Examination of Investor Owned Electric Utilities' Residential Rate Structures, the Transition to Time Varying and Dynamic Rates, and Other Statutory Obligations	Rulemaking 12-06-013 (Filed June 21, 2012)

COMMENTS OF THE CALIFORNIA LARGE ENERGY CONSUMERS ASSOCIATION ON THE RESIDENTIAL RATE DESIGN PROPOSALS FILED MAY 29, 2013

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INTRODUCTION

The California Large Energy Consumers Association (CLECA) has been an active participant in the Commission's rulemaking on residential rate design (R. 12-06-013) and filed comments on May 29, 2013 with proposed changes to residential rate design policy. In response to the Rulings of Administrative Law Judge Jeanne McKinney of June 18 and June 24, 2013, CLECA submits its comments on the residential rate design proposals of the parties to this proceeding. The June 18 ruling directed parties to use the Principles for Rate Design and Questions for Rate Design Proposal in Attachment A to the March 18, 2013 Ruling Requesting Rate Design Proposals. CLECA's comments follow the Principles set forth in that Ruling.

1. Low-income and medical baseline customers should have access to enough electricity to ensure basic needs (such as health and comfort)

are met at an affordable cost;

Ideally, low-income and medical needs customers would receive financial support for their basic needs outside of their electricity bills, such as through government transfer payments. This would allow their rates to show the actual cost of the electricity they buy and encourage efficient use of electricity. However, state policy has been to provide discounts on the utility bills themselves in the form of lower rates.[1] This approach undermines good rate design principles.

If this state policy continues, these discounts should be provided as a credit offsetting part of a customer's bill, where that bill is calculated based on the standard residential tariff. Thus, low-income and medical needs customers would see the same price signals as would all other residential customers instead of highly subsidized rates that send incorrect price signals as to the cost of consumption. This approach (a credit at the bottom of the bill) will be used for the return of revenue to customers from the sale of free GHG allowances (given to the utilities on behalf of these customers). The Commission adopted this approach to preserve a carbon price signal in rates. There is no difference here.

As discussed in greater detail below, current rates are based on increasing block pricing (IBP), which inherently prices 65-70% of usage below cost. Adding a low-income or medical needs discount through the rate itself aggravates the distorted below-cost price signal for this usage.

TURN proposes to offer lower percentage CARE discounts for higher amounts of usage under a tiered rate structure to provide more of a price signal for

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[1] These discounts are paid for by other electricity consumers (except the recipients and street lighting customers) rather than taxpayers.

efficiency or conservation or both at the highest tier.[2] However, the proposed 50% discount for the first tier for all CARE customers is too large. Under TURN's proposal, the first non-CARE tier to be discounted would be well below cost and the CARE discount would move it still farther below cost. If such a proposal were adopted, it would be even more important for the discount to be provided outside the rate structure. If the intent is to provide a greater discount for smaller users on the basis of lower income, the Commission must determine if the evidence supports that conclusion on the relationship between income and usage. Then the Commission will have to determine the costs of implementing an income-based discount.

Residential customers should be transitioned to time-of-use (TOU) rates, regardless of income.[3] TOU rates send correct price signals for efficient decision-making that reflect marginal costs. In combination with a discount in the form of a credit at the bottom of the bill, the needs of low-income customers can be met through TOU rates that provide signals for efficient consumption.

TOU rates have no adverse impacts by income.[4] There is no evidence that some customers have no ability to shift their usage to a different time period, with the possible exception of medical needs customers. No one has proposed defaulting medical needs customers or third party notification customers to TOU rates due to potential adverse consequence for this limited group of customers.

The current CARE discount, which is 47% for PG&E, 31% for SCE and 33% for SDG&E, should be significantly reduced. The widespread perception that the

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2 TURN Proposal, p. 52.

3 The exception would be medical needs and third party notification customers.

4 Borenstein, WP 229, at p. 23 and p. 16 (concluding that the peakiness of usage of low-income customers is not very different from other customers and low usage customers consume a smaller share of power on-peak).

discount is the statutory minimum level of 20% is clearly erroneous. There should also be a dollar cap on the CARE discount each month. The latter would provide an alternative means of limiting the availability of the discount for very large users, since subsidizing large users conflicts with efficiency and conservation signals. A larger discount for medical needs customers may be considered, although the amount of discount should be a function of the electrical consumption of the medical equipment used and not a blanket amount.

2. Rates should be based on marginal cost;

Other than real-time pricing, TOU rates most closely meet the requirement of being based on marginal cost. They reflect the temporal and diurnal variations in the marginal cost of providing service and send a price signal as to that variation. There is some averaging in TOU rates, and they would have to be updated over time to reflect changing patterns of cost incurrence. A dynamic pricing overlay would inform customers of periods of usually high prices or reliability challenges or periods of very low (or negative) wholesale prices and excess power in the system. Customer education will be needed for customers to understand that costs vary in this way, but the RROIR Survey indicated that some already are aware of these variations.

In contrast, as discussed below, current residential rates, which are IBP rates, are not reflective of marginal costs because marginal costs do not increase with cumulative usage levels.

3. Rates should be based on cost-causation principles;

Other than real-time pricing, TOU rates most reflect the cost of service, which

varies by time of use. Not only do energy costs vary by time of use, but the need for system generation capacity also varies as the probability of loss of load changes. There is a debate as to whether distribution costs vary with time of use, with different utilities taking different positions. However, there is no evidence that the costs of the distribution system vary with a customer's cumulative kWh usage. Instead, these costs vary with the non-coincident demand on the distribution system. NRDC's claim that customers with larger cumulative kWh usage have lower load factors[5] was refuted by data provided by SCE at the June 25 workshop.[6] SCE's data show that larger users actually have higher load factors than smaller users. Thus, NRDC cannot support its claim that overall costs are higher to serve larger users.

There is no cost-of-service basis for IBP rates. They do not vary with costs since they do not vary with time of usage. The prices for the first two tiers are below cost and the prices for the third and fourth tiers are above cost. There is no cost basis for a significant increase in the price per kWh of one additional kWh consumed. They provide no price signals to shift usage from higher- to lower-cost periods.

Current rates display all of these distortions of IBP rates. Non-CARE rates effectively have four tiers with the size of the first tier set by the baseline concept, i.e. that all customers should receive a discounted price, far below cost, for 50-60% of average usage (the baseline amount).[7] Rates for the second tier are also set below cost. The first and second tiers combined represent 65-70% of all residential usage. The additional tiers are priced at much higher, above-cost, rates. This pricing below

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5 NRDC Proposal pp. 34-35.
6 SCE Proposal for CPUC Workshop 6.25 v.4.ppt, p. 6.
7 CARE rates have three tiers.

and above cost is at odds with efficiency and marginal cost. Customers who are not low-income or medical-needs do not need such a subsidy for part of their usage. The baseline concept sends the wrong price signal to customers leading to inefficient decision-making, since prices are either significantly below or above cost. Such pricing is not reflective of marginal costs because marginal costs do not increase with cumulative usage levels.

Arguments that rates should be designed by allocating lower-cost hydro (NRDC, Sierra Club[8]) to the first tier or setting rates for higher tiers at higher levels because of lower load factors would reflect an embedded cost, rather than a marginal cost policy, which is inconsistent with decades of California cost allocation and rate design policy. Furthermore, the argument that larger users have lower load factors is not supported by the evidence presented by SCE.[9]

If IBP is to be retained, there is no basis for a below-cost second tier. Furthermore, the proposals for three tiers with the second tier set at 100-130% of baseline result in an inappropriately high third tier rate. There is no logic to a tier structure that has a small second tier. If IBP continues, a two-tier rate is likely to be closest to cost. If a three-tier IBP rate continues, the second tier should be made larger. In either case, the rate for the first tier should be much closer to cost. We understand that these changes would require legislation.

4. Rates should encourage conservation and energy efficiency;

In order for rates to encourage efficiency, customers must receive accurate price signals through those rates. These price signals should reflect the cost of

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[8] NRDC Proposal, p. 35, Sierra Club Proposal Ecoshift, p. 11.

[9] SCE Proposal for CPUC Workshop 6.25 v.4.ppt, p. 6.

providing that service, or customers will receive incorrect price signals and use or conserve too much. Very high rates may encourage more conservation, but it would be inefficient. Efficiency requires rates based on the marginal cost of providing the service to customers. Rates should not be inflated to give an energy efficiency or solar investment a faster payback. Claims that high third and fourth tier rates provide such a payback suggest that promoting energy efficiency or solar, even at inefficient levels, is the only goal of rate design. This flies in the face of the Commission's residential rate principles.

Most studies of TOU as well as dynamic rates have focused on reductions in usage during peak or event periods and on elasticities of substitution, rather than conservation. Peak reductions in response to TOU rates improve the system load factor and shape, reducing costs for residential and all other customers, even if overall usage is not reduced. However, there is some evidence that TOU rates have been associated with conservation, not just load-shifting. The most recent, and the most detailed, analysis comes from the SMUD Summer Solutions Study, which involves a very large pilot during the summers of 2011 and 2012. The SMUD 2012 Summer Solutions Study showed a 9.5% overall reduction in usage by customers on TOU rates.[10] There is also some evidence of conservation from TOU rates in New Zealand during the winter (peak) months.[11]

No experimental evidence has been presented that there is a significant net reduction in usage from IBP. The Wisconsin paper cited by NRDC,[12] the only

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[10] SMUD 2012 Summer Solutions Study, at pages 37 and 47.

[11] "Consumer responses to time varying prices for electricity" Energy Policy 49 (552-561), Thorsnes et al

[12] "Residential Demand for Electricity under Inverted Block Rates: Evidence from a Controlled

empirical evidence presented, concludes there is an own-price elasticity of -.02 to -.04; this was found not statistically significant.[13] Most assertions of conservation from IBP cite A. Faruqui's "Inclining Toward Efficiency".[14] This paper references elasticity data from the EPRI report.[15] However, none of the studies reviewed by EPRI (which Faruqui cites as a source of own-price elasticity data) involved IBP. They only involved TOU and CPP rates. Since there is evidence that customers on IBP rates respond to average, rather than actual, prices, the use of these data as support for IBP is even more questionable.[16]

5. Rates should encourage reduction of both coincident and non-coincident peak demand;

Absent demand charges, which are too complex for residential customers, TOU rates are the best means to encourage reduction of peak demand. Only TOU and dynamic rates provide information to customers as to the times of highest demand and reward them for avoiding usage during these periods. IBP rates do not. Their prices have nothing to do with the time of peak demand, as they only increase with kWh consumption, regardless of when it takes place.

IBP rates do not encourage reduction of either coincident or non-coincident peak demand. Usage in the first two tiers is priced below cost and sends no price signal to shift usage away from system peak (coincident peak) periods or localized (noncoincident) peak periods. Indeed, its low price encourages usage regardless of

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Experiment" Herriges et al

[13] A very small (-.04) but significant impact was found by the Statewide Pricing Pilot. This is far below the claims made by parties to this proceeding.

[14] Public Utilities Fortnightly, August 2008

[15] "Price Elasticity of Demand for Electricity: A Primer and Synthesis", Electric Power Research Institute, January 2008.

[16] "Do Consumers Respond to Marginal or Average Price? Evidence from Nonlinear Electricity Pricing," Koichiro Ito, Haas WP 210R, October 2012.

when it takes place (assuming customers are aware of their tiered rates). Usage in the upper tiers is priced above cost regardless of when it takes place.

6. Rates should be stable and understandable and provide customer choice;

Customers are familiar with TOU pricing from telephone rates and peak transportation-related pricing. They are also familiar with Flex Alerts, asking them to avoid usage during hot summer afternoons. The RROIR Survey showed that many customers try to avoid usage during peak periods even though their rates do not encourage this behavior.

Rate stability should not be an excuse to continue inefficient rates. A four-five year transition period with good customer education and a clear understanding of the ultimate rate design should suffice to inform customers. We recommend a default TOU rate structure after such a transition period, with shadow billing prior to the default period to show customers what they would pay on TOU rates and opt-in TOU pricing during the transition for those who benefit.

Opt-in TOU rate designs have been very successful in attracting customer participation.[17] Furthermore, SMUD's recent studies show high levels of retention on default TOU rates.[18] Thus, a transition starting with opt-in TOU rates and converting to default TOU rates over a 4-5 year time period is supported by real-world evidence.

Customer choice would be provided by creating an option to opt-out into an

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[17] See CLECA Opening Comments, May 29, 2013,, at p.17 (describing APS and SRP opt-in TOU rates)

[18] "Smart Pricing Options: Interim Evaluation Results" S. George, Freeman, Sullivan, & Co., June 5, 2013, showing that default treatment groups displayed extremely high enrollment rates, ranging from almost 93% to 98% and once enrolled, less that 2% of opt-in customers and 4% of default customers chose to drop out.

alternative flat rate with some dynamic pricing signals so that customers know when to avoid usage to save system costs that they will ultimately have to pay and when to increase usage to benefit the system (e.g. during overgeneration). We thus recommend a dynamic pricing overlay to future flat rates. The current IBP rate design would have to be phased into a flat rate over a transition period, and again, medical needs and third-party notification customers would not be defaulted to TOU rates, but should have an opt-in option.

Why do we recommend flat rates as an alternative to TOU rates rather than IBP? Flat rates do not underprice some usage and overprice other usage like IBP. What flat rates lack is a price signal based on time of consumption. This signal can be partially achieved by requiring a dynamic pricing overlay for customers on flat rates. They would be notified in advance of periods of very high (or low) usage and/or cost and provided with suggestions of how to reduce (increase) their usage during such periods. A two-tier alternative to flat rates may also be considered, but this option would raise concerns about the amount of usage priced below cost. In contrast to flat rates, IBP rates with a baseline require geographically varying rates to reflect the level of average usage by geographical region. These baselines then have to be updated, as currently required by law. If the goal is to have the same average rate for all geographical areas, flat rates would accomplish this much more simply and understandably.

Proposals to combine TOU and IBP pricing will be very confusing for customers and will not provide clear price signals for adjusting loads on the basis of system costs and load shape.

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

Current rates involve large cross-subsidies. Lower-usage customers are subsidized by higher-usage customers for reasons having nothing to do with cost or public policy. There is no economic or societal reason for this outcome. This subsidy occurs regardless of income or need for the subsidy.

Low-income customers are subsidized by all electricity customers (with the exception of themselves and street lighting customers). Their subsidy may be the result of a societal decision to provide these customers with affordable power, but there is no reason for them not to see the true cost of that power. Any subsidy they receive should not interfere with a correct price signal. Ideally the subsidy would come outside of the electricity system, but this appears to be politically unacceptable so the subsidy should be provided through a bill credit separate from the rate design.

Subsidies should be transparent and not buried in rate design. The current IBP rate design masks present subsidies. Providing a credit at the bottom of the bill rather than embedding the subsidy in the rate design will make the subsidy more explicit.

Whether there are cross-subsidies from the current rate design and net energy metering is not a topic for this proceeding.

8. Incentives should be explicit and transparent;

Cost-based TOU pricing will provide explicit incentives for customers to reduce usage in high-cost periods and, if needed, shift usage that cannot be avoided into low-cost periods. These are not “incentives” provided by subsidies or other transfers from other customers but instead are cost-based incentives to change

usage patterns with the corresponding benefit of subsequent reduced bills. Overall more efficient usage of the electrical system resulting from TOU rates would actually lower the cost of service. A dynamic pricing overlay (i.e., critical peak pricing or CPP) will provide explicit incentives to avoid periods where there are system challenges due to reliability issues or high market prices. It can also provide incentives to increase usage during periods of overgeneration.

The argument has been made that IBP with high third and fourth tier rates provides incentives for investment in energy efficiency and solar. However, these incentives are neither cost-based nor explicit, nor are they even transparent if customers are not aware of the IBP rate design.

9. Rates should encourage economically efficient decision-making;

Setting rates based on costs and allowing rates to reflect time-based cost differences will lead to economically efficient decision-making. Setting rates below cost or above cost, as in IBP, does the opposite. It is not clear whether there is sufficient customer understanding for IBP rates to send any price signals. Furthermore, IBP sends no price signals as to when it is most appropriate to use electricity or to reduce usage; IBP sends no price signals based on the time periods where usage imposes additional costs on the system or when it might be useful due to minimum load conditions or low prices.

10. 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.

Customer outreach and education are critical elements of a successful rate design. SMUD's recent Smart Pricing Pilot and Summer Solutions Study show that

properly designed rates with excellent education can result in both significant changes in residential customer behavior and happy customers with lower bills. It is not clear if the IOUs are the best entities to provide this education and outreach. The Commission should study SMUD's experience to learn more about how this can be done well and who should provide the education and outreach.

CONCLUSION

Residential energy usage represents roughly 33% of all kilowatt hours (kWh) sold by Southern California Edison Company (SCE) and 37% of all kWh sold by Pacific Gas and Electric Company (PG&E). It represents 39% of coincident peak load for SCE and 42% for PG&E.[19] These data make it clear that residential load represents a very large fraction of the usage on the system at any given time and greatly influences the load shape. The load shape directly affects the need for resources, which determines costs.

California utilities now have low load factors and large summer peaks. This results in spreading fixed costs over relatively less load, raising rates. Shifting customer usage away from the peak allows for reduced need for new units and better utilization of existing units, both of which lower costs for the system. It also reduces ramping requirements. Price signals from residential rate design (i.e. TOU rates and dynamic rates) have been shown to influence the diurnal patterns of usage, shifting load away from peak periods and increasing usage in low-cost periods. There is some evidence that they can also reduce overall residential usage. Both types of changes in usage lower costs to serve both residential

[19] Coincident peak load based on 12-CP. We do not have these data for SDG&E, but its share of residential load should be higher.

customers and the entire system.

Non-residential customers all have or will soon have mandatory TOU rates and default dynamic rates. Only the residential class has been exempt. Given the potential benefits of rates that send better price signals to residential customers, changes in residential rate design should be a high priority for the Commission in its efforts to mitigate overall increases in the cost of service. Some of these changes will require modifications to statute. We encourage the Commission to use the record in this proceeding to implement changes in residential rates where it has the statutory authority to do so and to advocate changes in statute that inhibit its ability to make beneficial changes.

Respectfully submitted,

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