

**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 SOLAR ENERGY INDUSTRIES ASSOCIATION  
AND THE VOTE SOLAR INITIATIVE ON  
RESIDENTIAL RATE DESIGN PROPOSALS**

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**I. INTRODUCTION**

In general, the parties that submitted residential rate design proposals agree that the current increasing block rate design is not sustainable.<sup>1</sup> The proposed solutions run the gamut from simplistic to complex, but at a high level, the following conclusions can be drawn:

1. The parties believe that the adoption of time-of-use (TOU) rates is a reasonable and cost-effective method to reduce peak period usage, although some parties would not make TOU rates the default rate design;
2. A large majority of parties oppose the use of fixed charges in residential rates;
3. A vast majority of the parties support retention of a baseline quantity in some format to help ensure the rate design objective of "access to an essential service at an affordable rate."
4. Only one party expressly promoted the use of a residential demand charge.
5. All parties agree that, whatever rate design is adopted, educating customers and providing sufficient time for customers to understand and accept the adopted rate design is a priority; and
6. All parties agree that "vulnerable" customers, including CARE and

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<sup>1</sup> With the possible exception of San Diego Consumer Action Network (SDCAN).

medical disability customers, must be protected. However, new and innovative ways of subsidizing the energy needs of these customer groups should be explored.

After reviewing the various parties' proposals, the Solar Energy Industries Association (SEIA)<sup>2</sup> and the Vote Solar Initiative (Vote Solar) (collectively, the Joint Solar Parties) submit that the record supports Commission adoption of a deliberate and smooth transition to a simple, volumetric, TOU rate design as the default rate structure for residential customers with an opt-out to an increasing block rate. This rate design should not include fixed charges, and it should continue to offer all customers the protection of a lower rate for a baseline amount of energy to meet basic needs.

## **II. PREFERRED ELEMENTS OF DEFAULT RESIDENTIAL RATE**

### **A. Time-of-Use Rates are the Rate Design of Choice**

#### **1. The TOU Rate Should Become the Default Rate.**

The majority of the parties support a default TOU rate design<sup>3</sup> as the optimal rate design for the long-run.<sup>4</sup> Even Southern California Edison Company (SCE) and Pacific Gas & Electric Company (PG&E), who support a modified increasing block rate as the default rate design (with a TOU rate as an option), recognize the benefits of moving to a TOU model. Thus SCE acknowledges that:

The current default, tiered residential tariff is not time variant and therefore does not provide direct pricing signals to encourage reduction of demand during peak

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<sup>2</sup> 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.

<sup>3</sup> The structure of the TOU Rate (i.e. number of rate periods) and the differences between the rates would be determined in the respective investor owned utilities' (IOUs') General Rate Cases (GRC).

<sup>4</sup> Only PG&E, SCE, TURN, SDCAN and CforAT/Greenling clearly favor continuance of default inverted block rates. In contrast, the following parties support a TOU rate as the default rate: SEIA, Vote Solar, DRA, Sierra Club, NRDC, EDF, CLECA and DECA.

periods. SCE believes that customer adoption of time-variant rate structures such as TOU or dynamic pricing will be needed to encourage reduction of coincident peak demand.<sup>5</sup>

In a similar vein, PG&E noted as follows:

For several years, PG&E has repeatedly emphasized that the current tiered residential electric rate structure is the primary obstacle to successful implementation of “customer-friendly” TOU residential electric rates for PG&E’s customers that directly incent load shifting from higher cost to lower cost periods.<sup>6</sup>

When questioned at the June 25, 2013 Workshop on Residential Rate Design Proposals (June 25 Workshop) as to why, given these findings, the two utilities did not support TOU rates as the ultimate default rate, the utilities’ response was to express concerns with customer acceptance of default TOU rates. While the concern is valid, it can be ameliorated through an appropriately structured transition period, such as one advanced by the Joint Solar Parties, during which the default rate structure would remain a simplified increasing block rate, with the provision for opting into a simplified TOU rate. It would only be subsequent to an intense and lengthy education period<sup>7</sup> that customers would be defaulted onto a TOU rate, and this final change would only occur if the Commission were satisfied that customers were ready to accept it. Arizona Public Service has shown that, with strong and persistent customer education, high penetration of TOU rates – in excess of 50% of residential customers and 70% of residential loads – can be achieved even on an opt-in basis.<sup>8</sup> Further, as reported at the June 25 workshop, the Sacramento Municipal Utility District (SMUD) has demonstrated, in a pilot program, that customers can be moved onto TOU rates with strong customer approval and relatively low

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<sup>5</sup> SCE, p.55. SDG&E does not proposal a specific optimal rate design, but provides three possibilities, none of which are based on inverted block rates. SDG&E, pp.17-19.

<sup>6</sup> PG&E, p. 54.

<sup>7</sup> The Joint Solar Parties have recommended six years (or two GRC cycles for each IOU).

<sup>8</sup> Joint Solar Parties, at p. 12.

percentages of customers who “opt out.”<sup>9</sup> SMUD’s experience directly counters PG&E’s argument that there is “no compelling evidence from other electric utility jurisdictions that defaulting customers to a TOU rate plan is a successful approach to engaging customers in the behaviors a TOU rate is designed to encourage.”<sup>10</sup>

## **2. Returning to the Rate Design of the 1990s Does Not Incent Innovative Energy Management Technologies.**

Both SCE and PG&E have proposed a default residential rate design based on a two-tier increasing block structure. As explained by SCE:

SCE’s rate design proposal would, over time, return SCE’s residential rate structure to a design *more like the default two-tiered residential rate structure that was in place prior to February 2001.*<sup>11</sup>

SCE further explains that:

It would require statutory reform to implement nearly all of the key rate components of SCE’s proposal — although all such structures were once part of SCE’s rate structure that was adopted by the Commission in 1996 — in order to remove the restrictions on the Commission’s authority to revise rates that have been in effect under AB 1X, from February 2001 through December 2009, and under SB 695 from January 2010 through the present. *The 2001 energy crisis that provided the initiative for the AB 1X rate restrictions has long since ended, yet there has been no return to a default rate structure similar to or an improvement upon the rate structure that existed prior to 2001.*<sup>12</sup>

Neither SCE nor PG&E explains, however, why California should return to the rate design of the 1990s given the new demand-side technologies, new meters, and new information sources available to customers to allow them to better manage their energy use. Indeed, as San Diego Gas & Electric Company (SDG&E) describes:

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<sup>9</sup> SMUD is currently conducting a pilot program pursuant to which a randomly selected group of residential customers were defaulted onto a TOU/CPP rate tariff. At present only 3% of those customers have opted out of the tariff.

<sup>10</sup> PG&E, p. 15.

<sup>11</sup> SCE, p.11.

<sup>12</sup> *Id.*, p. 12.

The [current] tiered rate structure is a bundled rate design that fails to distinguish between reliability or standby services and electric commodity services. As a result, while it may have worked in a bundled energy world without meaningful penetration of distributed energy resources and without public policy support for emission reducing actions by customers through the use of behind the meter technologies, this rate design is antiquated today and results in unintended consequences that will not support the state’s public policy objectives in the long term.<sup>13</sup>

Only through a sustained commitment in California to implementing dynamic, time-related rates and to providing clearer price signals to consumers will innovative energy management technologies emerge and be sustainable. As SDG&E further noted:

Under existing rate design, an unintended consequence occurs—customers lack incentives to pay for various kinds of new distributed energy resource technologies, such as energy storage and demand automation technologies that could flatten a customer’s load profile. This stifles potential innovation in these technologies and unintentionally eliminates incentives that could otherwise exist for customers to flatten their demand profiles; these kinds of incentives, were they to exist, would reduce the need to construct new distribution and transmission facilities that would otherwise exist.<sup>14</sup>

Returning to the two-tiered block rates of the nineties would further exacerbate the situation described by SDG&E, as it would further dampen price signals and thus diminish consumer incentives to invest in distributed generation and energy management technologies which are critical to reducing usage and shifting load. Indeed, even SCE recognizes that it is only through its proposed optional TOU rate that “customers would receive time-variant price signals and would likely begin to adopt technology to help them take advantage of the signals as well as consider new behaviors based on economic decision making.”<sup>15</sup>

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<sup>13</sup> SDG&E, p.6; *see also* Division of Ratepayer Advocates (DRA), p.6 (“Compared to current rates, TOU rates better achieve the Commission’s rate design goals of preserving customer access to affordable energy services and of reflect marginal cost, cost causation, and economic efficiency principles”).

<sup>14</sup> SDG&E, p. 43.

<sup>15</sup> SCE, p. 65.

### **3. TURN's Critique of TOU Rates Is Incomplete.**

The Joint Solar Parties wish to address TURN's position that there are relatively few benefits from TOU rates or other forms of time-varying pricing.<sup>16</sup> At the June 25 Workshop, Professor Borenstein observed that the academic research strongly supports the benefits of time-varying pricing, and DRA presented the results of a Brattle meta-analysis of dynamic pricing studies which shows significant peak period reductions from TOU rates.<sup>17</sup> The California Large Electric Consumers Association's (CLECA) proposal also includes important examples of the effectiveness of time-varying and dynamic pricing.<sup>18</sup>

There appears to be significantly more support among the parties for the effectiveness of TOU pricing (with an overlay of optional dynamic rates) than for the efficacy of increasing block rates, as shown by the vigorous debate at the June 25 Workshop over whether increasing block rates incent conservation. TURN contends that there will be few reliability benefits from TOU rates "unless the Commission quantifies peak load reductions and, notwithstanding expected opposition from the CAISO, uses these assumptions to reduce both system and local Resource Adequacy requirements."<sup>19</sup> The Joint Solar Parties observe that peak load reductions from time-varying and dynamic pricing will be reflected in actual, historical peak demands. So long as the peak demand forecasts used to set resource adequacy (RA) needs are reasonably based on recent historical data, load reductions from TOU rates will have a direct impact in reducing future RA needs. The Joint Solar Parties do not believe that the CAISO will contest demand forecasts that are reasonably based on historical experience with the impacts of time-varying pricing.

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<sup>16</sup> TURN, pp. 41-45.

<sup>17</sup> DRA June 25 Workshop presentation, at slides 6-9.

<sup>18</sup> CLECA, pp. 17-19 and pp. 24-34.

<sup>19</sup> TURN, pp. 43.

Reductions in peak demand from time-varying pricing will, over time, translate directly into reduced needs for generating capacity and transmission lines. These reductions in peak-related generation and transmission capacity costs are the primary benefits of TOU pricing.

**B. There is No Justification for Fixed Charges**

All parties, with the exceptions of the IOUs and CLECA,<sup>20</sup> oppose the introduction or continuation of fixed charges for residential rate design. As a result, the proposals offered document a myriad of reasons why fixed charges should be excluded.

First, as the Joint Solar Parties discussed, in the long-run, all utility costs are variable, so there is no economic justification for fixed charges.<sup>21</sup> Second, as several parties note, “recovering any significant share of revenue through a fixed charge will adversely affect energy efficiency progress”<sup>22</sup> and “fixed charges also result in a significant and inequitable subsidization of rates from lower income customers that consume less electricity to more affluent high energy consumers.”<sup>23</sup> Third, optimal utility operations do not require the imposition or collection of fixed charges:

[A] well-designed regulated monopoly utility should accurately emulate both the risk and reward of a commodity or service being offered in a highly competitive market. Essentially every commodity and service on offer in competitive markets includes a fixed cost component, which is recovered over time in sales of that commodity or service. There is no compelling reason why a public service utility should be permitted to extort a fixed fee for access to that commodity or service. Oil companies do not charge customers a monthly refinery access fee to be able to buy gasoline. Hotels do not generally charge guests a fixed monthly building access fee if they ever want to reserve a room. In the case of a critical commodity

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<sup>20</sup> At the June 25 Workshop, CLECA noted that a fixed charge was not critical one way or the other.

<sup>21</sup> Joint Solar Parties, p. 9; Natural Resources Defense Council (NRDC) , p. 29.

<sup>22</sup> NRDC, p. 5; Sierra Club, p. 2, DRA, p. 32.

<sup>23</sup> Sierra Club, p.2; TURN, pp.77-78.



such as electricity, universal access is a right, which should not be compromised by fixed monthly charges.<sup>24</sup>

Lastly, as DRA notes:

A fixed monthly charge is not sustainable in a competitive environment because customers do not like unavoidable charges. Indeed, the results of the RROIR Customer Survey show that the existence of a monthly service fee “*had more influence on rate choices than any other attribute.*” The survey results also indicate that customers are strongly averse to a monthly service fee.<sup>25</sup>

As noted by the Joint Solar Parties, this result deserves attention, given the critical importance of customer acceptance of any new rate design.<sup>26</sup>

Finally, at the June 25 Workshop, Dr. Borenstein provided yet another reason not to adopt fixed charges. He noted that the primary economic justification for a fixed charge is to recover the difference between (1) long-run incremental costs, including the costs associated with externalities, and (2) average costs. The Joint Solar Parties agree with the NRDC expert’s comments at the June 25 Workshop that, given California’s rising electric rates, the state’s ambitious climate and renewable energy goals, and the significant externalities associated with energy production, it is highly likely that long-run incremental costs now exceed average costs. This further undermines the case for a fixed charge.<sup>27</sup>

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<sup>24</sup> Sierra Club, p.10; *see also*, DRA, pp.A-4 - A-5; and SDG&E, p.11: “California’s long-term goals include a wide array of customer-empowering and emission reducing technologies, ranging from increased deployment of renewable powered distributed generation and electric vehicles, to fully realizing the promise of smart meters through after meter demand automation, increased penetration of both commercial and residential energy efficiency equipment and creating a market for Zero Net Energy homes and buildings.”

<sup>25</sup> DRA, p.A-5, *citing* Hiner & Partners, Inc., Residential Rate Design OIR Customer Survey Key Findings, Final Draft, April 16, 2013, Slide 19. The Joint Solar Parties note that PG&E’s June 25 Workshop slides attempt to re-cast this survey finding in a more favorable light, by stating that the survey shows that customers dislike an “[i]nability to save money by changing behavior.” PG&E June 25 Workshop presentation, at slide 4.

<sup>26</sup> Joint Solar Parties, p. 13.

<sup>27</sup> Indeed, if long-run incremental costs exceed average costs, Dr. Borenstein agreed that all customers should receive a fixed credit. This provides another rationale for baseline rates, which

**C. Baseline Rates Should be Retained to Increase Affordability.**

With the exception of CLECA and Distributed Energy Consumer Advocates (DECA), all parties submitting proposals retained the concept of a baseline quantity to help ensure the rate design objective of “access to an essential service at an affordable rate.”<sup>28</sup> The concept of a baseline quantity can be included in TOU rates in a number of ways. For example, the Joint Solar Parties have proposed that 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.<sup>29</sup> Similarly, the Natural Resources Defense Council (NRDC) has proposed that, in lieu of a baseline credit, a surcharge be built into the TOU design for usage above baseline quantities. As stated by NRDC :

This has the effect of retaining a “the more you use, the more you pay” effect within a time variant rate design without being too complex for consumers to understand. We considered whether to present this as a surcharge above lower rates, or a discount from higher rates, and we concluded that avoiding a surcharge by avoiding high usage was a better psychological message.<sup>30</sup>

The Joint Solar Parties agree with NRDC that, mathematically, there is no difference between a baseline credit for an essential block of usage and a surcharge on high usage above a certain threshold. The Joint Solar Parties can accept either approach, and recognize that NRDC’s method may be a more effective means to communicate a conservation message.

**D. Volumetric Rates Maximize Customers’ Opportunity to Make Long Term Choices.**

The adopted rate should be volumetric. As noted by the Joint Solar Parties, the use of

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essentially give all customers a fixed credit in the form of a discounted rate for a basic amount of electricity.

<sup>28</sup> DRA, p. 30.

<sup>29</sup> Joint Solar Parties, p. 16.

<sup>30</sup> NRDC, p. 13.

volumetric rates recognizes that, in the long-run, all utility costs are variable, 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.<sup>31</sup>

One utility, SDG&E, proposed a third type of rate element, a residential demand charge.<sup>32</sup> Such a charge would be based on a residential customer's non-coincident maximum demand in a billing period. The Joint Solar Parties oppose SDG&E's proposed demand charge for several reasons. First, the non-coincident demand of individual residential customers does not appear to be a significant driver of the residential cost of service. TURN's proposal presents data showing that residential loads have significant diversity even at the distribution level and that the costs dedicated to serving individual residential customers are very limited.<sup>33</sup> The Joint Solar Parties also submit that a non-coincident demand charge based on an individual customer's highest demand in any 15- or 60-minute interval in a month is far too blunt an instrument, and could dramatically overcharge customers whose peak demand happens to occur in a time period different than when the system or distribution system peaks.

Perhaps even more important, a residential demand charge would be a new, and unfamiliar, rate design element. There is a high potential for customer confusion and backlash with a new rate design element with which residential customers have little experience. Most customers do not understand precisely what accounts for their overall energy use or what is the daily profile of their energy usage, much less what is their 15-minute or 60-minute demand on the grid. There is reason to believe that with sufficient education, customers will take actions to reduce their overall energy use, or to reduce it on critical days, but it would seem to be a

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<sup>31</sup> Joint Solar Parties, pp. 9 and 13.

<sup>32</sup> SDG&E, p.17 and pp. 25-26.

<sup>33</sup> TURN, p. 73-77.

herculean challenge to educate residential customers to reduce their maximum monthly demand on the grid. All parties agree that customer understanding and acceptance of a new rate design is crucial; introducing a complex new rate design element such as a demand charge would present significant risks of customer confusion and opposition.

**E. Simplicity in Rate Design is Necessary to Achieve Customer Acceptance.**

There was broad agreement that the adopted residential rate design must be stable over the long run, understandable by residential customers, and sufficiently simple that residential customers can easily respond to the provided price signals and incentives to reduce their energy use, make economically efficient decisions, and increase investments in energy efficiency, demand side management, and distributed generation.. A TOU rate, properly structured, will meet these goals. As noted by DRA:

PG&E’s residential customer survey indicated that many customers have a general sense of the time of peak energy use and understand that shifting usage could potentially save on their energy bill. Therefore, the proposed TOU rates should be easily understood by customers. . . . For example, older customers will remember TOU long-distance phone bills; those that cross the Bay Bridge have been exposed to TOU bridge tolls. Customers who fly regularly know that fares at peak travel times tend to be expensive.<sup>34</sup>

Similarly, PG&E commented, using data obtained from its customer survey, that “based on rate structure alone” “customers will be attracted to simpler structures, primarily flat rate, two-tier and two-period TOU rate[s].”<sup>35</sup> In this regard, proposals such as those of the Joint Solar Parties, DRA, and NRDC, which rely on baseline credits or high-usage adders (which are mathematically the same) to simplify a tiered TOU structure will be more acceptable to customers than TOU rate designs with multiple levels and multiple time of use periods.

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<sup>34</sup> DRA, p.28.

<sup>35</sup> PG&E, p. 63.

## **F. Retention of Assistance for Vulnerable Customer Groups**

Parties supported maintaining California's longstanding commitment to low-income ratepayer assistance. There does, however, seem to be a growing acknowledgement that the growth in the CARE program combined with the current tiered structure of residential electric rates has caused the actual level of the CARE rate discount to significantly exceed the intended 20 percent discount, and thus refinements to the program are warranted. In this regard, parties were in agreement that changes should be done in a manner which incents lower usage. For example, the Joint Solar Parties proposed that the Commission explore means to 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.<sup>36</sup> Similarly, NRDC asserts that:

The Commission should consider targeting existing energy management programs to areas with the highest demand (e.g., the Central Valley), requiring that enabling devices be bundled with TOU rates for CARE customers (e.g., TOU adoption triggers eligibility for advanced thermostats), and experimenting with third-party programs that seek to guarantee lower bills through effective energy efficiency and management interventions.<sup>37</sup>

The Commission should take the opportunity afforded it through this rate design rulemaking to better harmonize the CARE program with other state energy policy priorities.

## **III. TRANSITION FROM INCREASING BLOCK TO TOU RATES**

As noted above, a critical aspect of implementing a default residential TOU rate is the transition to such a rate structure from the increasing block rate structure. In addition to the building blocks of customer outreach and education, a number of parties recognized the benefits

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<sup>36</sup> Joint Solar Parties, p. 24.

<sup>37</sup> NRDC, p. 26

of gradually raising the increasing block rate to better reflect the cost to serve the customers that remain on this rate and thereby encourage a “virtuous cycle” of migration to TOU. As presented by CLECA:

There should be a transition from the current increasing block rate structure to default TOU rates with dynamic pricing options for all residential customers. Such a transition should take place over 4-5 years, but the clear direction from the beginning should be that the final rate design would be TOU with optional dynamic pricing. In the interim, optional TOU and dynamic pricing rates should be available for all residential customers, with the rates set initially on a revenue neutral basis. However, if customers on these rate schedules demonstrate a lower cost of service, the revenue requirement recovered from the rate schedules should reflect these lower costs. Any shortfall should be recovered from customers on the default rate schedules.<sup>38</sup>

Similarly, SCE states:

As SCE’s higher-usage customers migrate from the above-cost, higher tiered rate levels to an optional cost-based TOU rate, a deficiency in revenues collected from SCE’s residential rate group will develop. Any revenue deficiency resulting from this migration to TOU rates should be recovered from residential customers served on below-cost rates.<sup>39</sup>

In short, by ensuring that the Commission’s goal of cost based rates is met (*i.e.*, by shifting the costs from the cheaper-to-serve TOU customers to the more expensive customers remaining on the increasing block rate), continued customer migration to TOU rates will be encouraged.

#### **IV. ADAPTING RATE DESIGN TO CHANGING CIRCUMSTANCES**

For the purpose of purportedly demonstrating that there will be a shift in the peak period, the CLECA proposal includes the CAISO’s infamous “duck graph.” This graph allegedly shows that the addition of significant wind and solar generation will result in the CAISO having to respond to increasingly steep evening ramps in low-demand shoulder months such as March,

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<sup>38</sup> CLECA, pp. 5-6.

<sup>39</sup> SCE, p. 47; *see also* DRA, p. 29 (ultimate optional two-tiered increasing block rate would be designed to cover the costs of those customers who opt out of the default TOU rate onto this rate).

beginning in 2015.<sup>40</sup> However, the record in the Commission’s Resource Adequacy (RA) proceeding (R. 11-10-023) has revealed significant errors in this graphic; for example, it assumed that all solar added in California would be single-axis tracking systems, whose output declines particularly steeply at sunset. In fact, about 20% of the new solar is expected to use tracking; the rest will be fixed-axis systems.<sup>41</sup>

The “duck graph” also shows CAISO loads net of both wholesale and behind-the-meter solar and wind. Rates should be designed based on demand at the end-use customer’s meter, not based on loads which exclude certain wholesale resources. The issue which the “duck graph” raises is an operational issue of having enough flexible generation on the system. The issue is being addressed in the RA docket, where the Commission recently established a new program of flexible RA capacity.<sup>42</sup> Solving this issue will require supply- or demand-side resources whose output can be directly increased or curtailed by the CAISO or the utilities; it is not an issue that residential rate design can or should address.

The Joint Solar Parties recognize that TOU periods and TOU rate design will need to be reviewed in future GRCs. However, any changes to the present TOU periods and rate design must be based on actual data on load profile changes, not speculative forecasts. Parties such as CLECA believe that the peak will shift to later in the day as a result of large solar additions;<sup>43</sup> however, there are also countervailing trends that could increase the current afternoon peaks,

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<sup>40</sup> CLECA, pp. 20-21.

<sup>41</sup> Recognizing this error, the CAISO on March 22, 2013 corrected its prior presentations on the need for upward ramping flexibility in future years. Compare Slide15 from the CAISO’s original March 20, 2013 workshop presentation in R. 11-10-023 to Slide15 from its corrected March 20 presentation, released March 22. The most recent corrected CAISO presentation can be found at [http://www.caiso.com/Documents/R.11-10-023%20\(Order%20instituting%20rulemaking%20to%20oversee%20RA%20program\)](http://www.caiso.com/Documents/R.11-10-023%20(Order%20instituting%20rulemaking%20to%20oversee%20RA%20program)).

<sup>42</sup> See D. 13-06-024.

<sup>43</sup> CLECA, pp. 21-22.

such as hotter temperatures as a result of climate change and continued customer migration to inland regions of the state. To date, even though the state has added over 1,600 MW of demand-side solar,<sup>44</sup> there has been no significant shift in the peak hour, which continues to fall in the hours ending from 3 p.m. to 5 p.m., as can be seen from the following CAISO data on the time of its instantaneous peak demand:

**Table 1:** *California ISO Peak Load History*<sup>45</sup>

Year	Megawatts at Peak	Date	Time
1998	44,659	August 12	14:30
1999	45,884	July 12	16:52
2000	43,784	August 16	15:17
2001	41,419	August 7	16:17
2002	42,441	July 10	15:01
2003	42,689	July 17	15:22
2004	45,597	September 8	16:00
2005	45,431	July 20	15:22
2006	50,270	July 24	14:44
2007	48,615	August 31	15:27
2008	46,897	June 20	16:21
2009	46,042	September 3	16:17
2010	47,350	August 25	16:20
2011	45,545	September 7	16:30
2012	46,846	August 13	15:53

To date in 2013, instantaneous demand on the CAISO grid peaked at 45,080 MW on June 28, 2013, in the hour ending 5 p.m.

Even if the widespread use of demand-side solar ultimately does result in a shift in peak demand to later in the day, the new peak will be significantly lower than the peak without those

<sup>44</sup> See <http://www.californiasolarstatistics.ca.gov/>.

<sup>45</sup> The source of this data is the CAISO website: <http://www.caiso.com/Documents/CaliforniaISOPeakLoadHistory.pdf>. There is a typo in the CAISO data for 2012 – the peak occurred on August 13, not August 31.



solar resources, producing benefits for all customers in lower generation and transmission capacity costs. The existing solar customers who caused this positive shift, and who produced the resulting benefits, should not have their long-term investments in renewable generation devalued because the new, lower peak is later in the day. Accordingly, the Joint Solar Parties strongly oppose CLECA's suggestion that "it is not appropriate to grandfather [into current TOU periods] customers with PV if the peak shifts to evening, because this could stimulate more use at the wrong time."<sup>46</sup> Fortunately, these difficult issues do not need to be addressed now, and can be addressed in future GRC Phase 2 proceedings, if there is evidence that there has been a sign.

## V. CONCLUSION

The rate design proposals and supporting documentation presented on the record to date support the Commission approving the transition to a simple, default, volumetric TOU residential rate design with an opt-out to an increasing block rate, with no fixed charges and which retains the protection of baseline rates. Such a rate design will 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 demands and which are fully consistent with the state's energy goals. The Joint Solar Parties' proposal satisfies these requirements.

As recognized by all parties, this transition must be deliberate and accompanied by an intensive customer outreach and education program over a sufficient period of time to secure customer acceptance and understanding. It is important, however, to set a time goal for the ultimate objective of a default TOU rate, in order to focus the state's efforts to reach this

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<sup>46</sup> CLECA, p. 22.

important goal. The Joint Solar Parties' proposed six year transition period and focus on customer education accomplishes these goals as well.

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