

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



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Order Instituting Rulemaking to Assess Peak  
Electricity Usage Patterns and Consider  
Appropriate Time Periods for Future Time-of-  
Use Rates and Energy Resource Contract  
Payments

Rulemaking 15-12-012  
(Filed December 17, 2015)

**OPENING COMMENTS OF ENVIRONMENTAL DEFENSE FUND ON SCOPING  
MEMO AND RULING OF ASSIGNED COMMISSIONER AND ASSIGNED  
ADMINISTRATIVE LAW JUDGE**

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Dated: June 27, 2016

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**I. INTRODUCTION**

Pursuant to the Scoping Memo issued by Administrative Law Judge (ALJ) McKinney and Commissioner Picker on May 3, 2016,<sup>1</sup> Environmental Defense Fund (EDF) submits the following opening comments. In these comments, EDF limits its answers to questions 1 through 4 in “Group A” and questions 4 through 7 in “Group B.” However, EDF reserves the right to respond to other questions not addressed in these opening comments in their reply.

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<sup>1</sup> *Scoping Memo and Ruling of Assigned Commissioner and Assigned Administrative Law Judge*, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns and Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource Contract Payments, R. 15-12-012 (filed May 3, 2016).

## II. RESPONSE TO QUESTIONS

### A. Response to Questions in Group A – Methodology for Setting TOU Periods

1. *The OIR, and parties commenting on the OIR, suggested the following data to support the development of a methodology for identifying target TOU periods. Which data are relevant to setting TOU periods from a grid perspective? What existing studies and data sources provide data you recommend? If you recommend that load profile data should play a role in setting TOU periods, specify the type of load you propose using, referring to Table 1 above, and explain why that approach to measuring is preferable. If the data is not currently available, would you propose developing this data for setting future TOU periods? If so, what steps would you recommend taking to develop the data?*

EDF believes that all the data listed by Commissioner Picker and ALJ McKinney in regard to this question are important and relevant for setting time-of-use (TOU) periods.<sup>2</sup> In particular, we find “greenhouse gas emissions intensity associated with changing load shapes”<sup>3</sup> to be particularly important. As net demand (system load minus self-generation and utility-scale solar) gets lower in the middle of the day with increasing incidence of negative wholesale real-time and day-ahead prices,<sup>4</sup> system ramping needs will grow unless there is an intervention (known as the “duck curve”). This may lead to the need for building and using fossil fuel-powered ramping resources and potentially localized reliability concerns. Setting TOU periods that encourage demand to align with times when there is an abundance of renewable energy will be critical to alleviate this “duck curve” concern.

Relatedly, EDF believes that renewable curtailment information will be relevant for inspiring customers to adjust their demand. That is, pricing policy can be augmented by marketing

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<sup>2</sup> *Scoping Memo and Ruling of Assigned Commissioner and Assigned Administrative Law Judge, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns and Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource Contract Payments, R. 15-12-012 at 12-13 (filed May 3, 2016).*

<sup>3</sup> *Scoping Memo and Ruling of Assigned Commissioner and Assigned Administrative Law Judge, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns and Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource Contract Payments, R. 15-12-012 at 13 (filed May 3, 2016).*

<sup>4</sup> *Comments of Environmental Defense Fund on the Transportation Electrification Workshop and Electric Vehicle Straw Proposal, Order Instituting Rulemaking to Consider Alternative-Fueled Vehicle Programs, Tariffs, and Policies, R. 13-11-007 at 4-5 (filed May 18, 2016).*

strategy informed by the environmental attributes at the time of price change (e.g., from peak to off-peak).

Put another way, lack of data makes it virtually impossible to properly analyze the relationship between transmission, storage, and curtailment<sup>5</sup> – which will be critical to understand appropriate TOU periods. It is not currently possible for electricity users to know, in real time, when renewable resources are being curtailed or facing imminent curtailment. This information, if made available, would have the potential to increase the use of renewable generation resources that would be otherwise curtailed. Furthermore, real-time or imminent curtailment information can inform the design of TOU rates more directly than wholesale price information. Times when curtailments are likely to occur should, all else being equal, be relatively lower-priced times of the day than non-curtailment times.

2. *If you recommend using marginal generation capacity costs developed in IOU GRCs as an appropriate basis on which to set TOU periods, how should those costs be allocated to time periods? If by loads (e.g., Peak Cost Allocation Factors), which type of loads (see Table 1 above)? At what point should MGC data be considered stale (even if it was used in a prior GRC)?*

EDF recommends that marginal generation capacity costs be used to develop TOU periods.

In addition, TOU rates should reflect localized marginal transmission and distribution information, as described in our proposal for a “smart home rate.”<sup>6</sup> EDF believes that customers should have an option to enroll in a tariff that will reward load shifting and conservation in response to price signals, and that the price signal should be precise in time and place. Creating more price spread between peak, off-peak and super-off peak rates will enhance the economic

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<sup>5</sup> *Response of Environmental Defense Fund to Administrative Law Judge’s Ruling Instructing Utilities and Non-Utility Parties to Answer Data Requests*, Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Development of Distribution Resources Plans Pursuant to Public Utilities Code Section 769, R. 14-08-013, *et al.* at 5 (filed May 13, 2016).

<sup>6</sup> Phase 1 Opening Testimony, Including Errata Pages, of the Environmental Defense Fund, 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, R. 12-06-013 at 13-14 (filed Sep. 15, 2014).

incentive for load shifting and conservation, as well as self-generation and storage. Whereas the rewards will be greatest for active customers enrolled in a smart home-like rate, the same logic applies to a similarly-structured TOU rate that would serve as the default tariff for residential customers.

3. *Using the data sources discussed in response to question 1, what analytical methods should be used to determine appropriate TOU time periods? Please provide a detailed response.*
4. *What data, assumptions, and analytical methods should be used to determine the TOU time periods from the grid perspective during which it would be helpful for customers to modify their level of energy use? Ideally, what data should be obtained from CAISO to determine these periods? How often should this data be updated? What data is it feasible for CAISO to provide?*

EDF does not comment on the appropriateness of the analytical methods chosen (i.e., what data or what types of calculations are used), but believes it is important to develop algorithms that: 1) automatically update TOU periods and prices within periods; and 2) provide customers with information about the emissions intensity of the energy they're using, including instances of curtailing renewables (as discussed above).

In order to be most effective, algorithms that update automatically at specific time intervals must be tied to wholesale prices and distribution resource planning information developed in general rate cases (GRCs). The algorithms ought to solve iteratively; that is, changes in utility costs should be modelled as retail price changes, which in turn should be modelled as changes in load forecasts due to price response and associated marketing, education, and outreach. Finally, the revised load forecast should be used to update the TOU rate design since customer price responses can be planned to affect utility costs.

EDF believes that providing the necessary formula for TOU periods to automatically update will, among other attributes, be less administratively burdensome, provide much needed certainty

to the industry, and allow TOU periods to more accurately reflect the values of distributed energy resources (DERs).<sup>7</sup>

B. Response to Questions in Group B – Other Considerations for Designing TOU Rates

*4. Should a menu of TOU rate period options be available to any or all customers, or should there be a single set of TOU rate periods for all customers? If a menu of options should be available, what factors would support Commission adoption of TOU periods that differ from the results of the load and/or marginal cost analysis?*

EDF supports a menu of tariff options. As expressed in comments in the residential rate proceeding, this should include an option for TOU rates with wide price differences between peak and super-off peak periods,<sup>8</sup> and smart home rates tied dynamically to day ahead wholesale locational marginal prices for energy, capacity and ancillary services in order to fairly compensate DERs.<sup>9</sup>

*5. Should TOU rate periods be consistent across different utilities, or should they be utility specific? Should TOU rate periods ever differ by geographic areas within an IOU's service territory? Should TOU rate periods differ by customer class or segment?*

Rates should not be consistent across all utilities – each service territory will have a unique system-wide load profile, availability of renewable energy, and local reliability needs. TOU periods should reflect these different conditions, rather than conform to periods that may not accurately reflect grid conditions. Moreover, marketing, education, and outreach in service territories may be less effective if there is no clear environmental advantage to using energy at

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<sup>7</sup> *Comments of Environmental Defense Fund on Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns to Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource contract Payments*, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns to Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource contract Payments, R. 15-12-012 at 2-3 (filed Jan. 15, 2016).

<sup>8</sup> *Comments of Environmental Defense Fund to San Diego Gas & Electric's Letter 2835-E Describing Proposed Time-of-Use Pilot Plan*, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns to Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource contract Payments, R. 15-12-012 at 2 (served Feb. 11, 2016).

<sup>9</sup> *Prehearing Conference Statement of Environmental Defense Fund*, Order Instituting Rulemaking to Assess Peak Electricity Usage Patterns to Consider Appropriate Time Periods for Future Time-of-Use Rates and Energy Resource contract Payments, R. 15-12-012 at 2 (filed Jan. 15, 2016).

specific times (e.g., in areas with good air quality), so the messaging in customer outreach campaigns will also necessarily differ by service territory.

Additionally, TOU rate periods should differ by customer class and/or segment in order to reflect principles of cost causation and fairness. To that end, the Commission should consider distinguishing customers by load shape, capabilities, and location, but not by the specific technologies they use to manage their energy use. Instead of allowing utilities to isolate customers with solar photovoltaic energy, the Commission should require enhanced focus on more vulnerable customers. This will ensure that vulnerable customers have the proper education and capabilities to benefit from TOU rates and those customers who can provide grid services through the effective use of DERs are provided encouragement to harness that capability through a smart home rate.

*6. Other than pilots, how do you recommend testing TOU rates for levels of complexity (in terms of price ratio, number of periods, length of peak period) that will ensure the needed level of customer engagement to achieve the TOU goals?*

In order to ensure the needed level of customer engagement, the Commission should consider allowing third party DER providers to propose programs and price structures that allow the providers and utilities to remain at least revenue neutral. The utility should be compelled to host the DER resources provided by third parties if such a policy is adopted by the CPUC.

*7. Should TOU differentiation be applied only to variable energy costs or to composite energy costs that include all fixed and variable components?*

As reflected in the responses to the above questions, TOU differentiation should be applied to all costs, to the extent feasible. In addition, in order to make TOU rates more readily understandable and to provide a strong incentive to use energy at times most beneficial to the grid, the environment, and ultimately the customer, different TOU periods should have a robust price differential between peak and off-peak periods.

### III. CONCLUSION

EDF thanks the Commission for the opportunity to provide comments and looks forward to continued engagement in this proceeding.

Respectfully signed and submitted on June 27, 2016.

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