

**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)

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

Larissa Koehler
Attorney
Environmental Defense Fund
123 Mission Street, 28th Floor
San Francisco, CA 94105
Phone: (415) 293-6093
Email: lkoehler@edf.org

James Fine, Ph.D.
Senior Economist
Environmental Defense Fund
123 Mission Street, 28th Floor
San Francisco, CA 94105
Phone: 415-293-6060
Email: jfine@edf.org

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I. INTRODUCTION

Pursuant to the Scoping Memo issued by Administrative Law Judge (ALJ) McKinney and Commissioner Picker on May 3, 2016,¹ Environmental Defense Fund (EDF) respectfully submits the following reply comments. In these comments, EDF will address the following five issues:

- The need for time-of-use (TOU) periods that are structured in a way that best serves customers and the grid;
- The importance of having TOU periods and rate differentials that vary across and within utility service territories;
- The ability of customers to respond positively to sophisticated rate period design;
- The need to consider the impact of the potential California Independent System Operator (CAISO) expansion on TOU pricing and periods; and
- A renewed call for a comprehensive analysis of greenhouse gas (GHG) reduction potential possible with increased use of TOU rates.

¹ *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. DISCUSSION

A. *TOU periods should be grounded in marginal generation costs and should be diverse in order to best serve customers and the grid.*

EDF agrees with several parties that support using marginal generation costs (MGC) as the foundation for setting TOU periods.² For example, the Solar Energy Industries Association (SEIA) states “all elements of a utility’s marginal cost of service that vary with customers’ usage and demand for electricity – generation, transmission and distribution – should be considered in setting TOU periods.”³ To the extent that the generation mix in California is dominated by fossil-fueled generation, marginal generation costs will follow marginal energy prices. As more renewables with zero-marginal energy costs are put into service, peak wholesale energy prices will be increasingly influenced by the rate of solar insolation and by wind availability.

EDF agrees that MGC peak hours closely resemble the CAISO’s proposed peak hours after 2020.⁴ This is important for maximizing the use of renewable energy. That is, when there is an abundance of solar (and/or wind) in the generation mix, wholesale energy prices are much lower than when those resources are scarce, so TOU rate structures should reflect that pattern. Demand will respond to these price differentials, thereby facilitating the use of greater amounts of

² See, e.g., *Comments of the Office of Ratepayer Advocates on May 3, 2016 Assigned Commissioner and Administrative Law Judge’s Scoping Memo and Ruling, 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 10 (filed Jun. 27, 2016); *Opening Comments of San Diego Gas & Electric Company (U 902-E) Responding Questions Posed in Scoping Memo Ruling Dated May 3, 2016, 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 10 (filed Jun. 27, 2016).

³ *Opening Comments of the Solar Energy Industries Association Responding to Scoping Questions, 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 6 (filed Jun. 27, 2016)

⁴ *Opening Comments of San Diego Gas & Electric Company (U 902-E) Responding Questions Posed in Scoping Memo Ruling Dated May 3, 2016, 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 3 (filed Jun. 27, 2016); California Independent System Operator, *CAISO’s proposed TOU periods to address grid needs with high numbers of renewables*, slides 5-7 (Feb. 26, 2016).

renewable energy without curtailment and helping to support the achievement of state environmental goals.

Marginal cost data are important for setting appropriate rates as well. As stated in EDF’s opening comments, “rates should reflect localized marginal transmission and distribution information”⁵ in a way “that will reward shifting and conservation in response to price signals”⁶ that are precise in time and place.

Like other interested parties,⁷ EDF supports providing customers with a menu of TOU rate period options. Giving customers rate period choices will allow utilities to adapt service and engage in directed marketing, education, and outreach campaigns for groups of ratepayers in their service territory in a way that allows for locational variation in TOU rates. It will also allow utilities to have price signals with greater differentials so that those customers best-equipped to respond can do so accordingly, and customers without enabling technology have a stronger incentive to take actions to reduce their bills and avoid any bill surprises when transitioned from tiered to TOU rates. Enhancing the difference between prices (within the limits of cost causation and the art of balancing the many principles of rate design) and ensuring successful marketing, education, and outreach in order to encourage increased recognition and utilization of TOU rates will be integral to successful utility strategies. As EDF stated in opening comments, “[c]reating more price spread between peak, off-peak and super-off peak

⁵ *Opening Comments of Environmental Defense Fund on 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 4 (filed Jun. 27, 2016).

⁶ *Id.*

⁷ *See, e.g., Comments of the Office of Ratepayer Advocates on May 3, 2016 Assigned Commissioner and Administrative Law Judge’s Scoping Memo and Ruling*, 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 20 (filed Jun. 27, 2016); *Comments of the California Solar Energy Industries Association Responding to Scoping Questions*, 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 8 (filed Jun. 27, 2016) (“[h]aving a menu of options available enables utilities to give stronger price signals to a subset of customers that are able to respond effectively to those price signals”).

rates will enhance the economic incentive for load shifting and conservation, as well as self-generation and storage.”⁸ This will be essential for achieving the primary goal of TOU pricing, which is to “assist in reaching state energy goals by minimizing costs, reducing greenhouse gas emissions, encouraging conservation, and increasing the supply of electricity at times that best serve the needs of the grid.”⁹ Therefore, customers should be provided the opportunity to choose rate period options with significant differentiation between pricing periods to most effectively achieve the goals of TOU pricing. Along with this, it is the responsibility of the utility to clearly lay out all options for the customer and help guide them to the option that will most benefit them. In doing so, utilities and customers must be mindful of the fact that effective load management is of paramount importance – the effectiveness of TOU rates lies in how well customers respond to price signals, rather than what enabling technology that customer uses in order to manage their load.

B. TOU periods and rate differentials should vary across and within utility service territories.

Customer acceptance, as rightfully pointed out by the California Public Utilities Commission (CPUC or Commission) is “essential in TOU rate design.”¹⁰ As such, marketing, education, and outreach needs to be robust and well-tailored to ensure the interests of different segments of a utility customer base are being fairly represented. In other words, “[t]he appropriate treatment of different customer classes, [is] necessary, in light of the fact that customer needs and

⁸ *Opening Comments of Environmental Defense Fund on 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 4-5 (filed Jun. 27, 2016).

⁹ *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 2 (filed May 3, 2016).

¹⁰ *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 7 (Filed May 3, 2016).

sophistication may vary by customer class.”¹¹ EDF therefore agrees with the California Farm Bureau Federation that “in reviewing the characteristics of the State’s utilities, it would be difficult to argue for strict parameters that, for example, assume the same framework for PG&E and SDG&E’s territory, unless the data presumptively confirms it to... because the TOU periods are likely to be at least similar, customers are not apt to be misled by distinctions across utility service territories,”¹² as well as the Green Power Institute that “from a grid perspective, TOU periods should be set IOU-wide, and ideally should be based on the time-differentiated marginal cost of supply in each IOU’s service territory.”¹³ As EDF mentions above, TOU periods and rate differentials could be even more precise, perhaps down to a sub-IOU service territory level – for example, while PG&E serves both the Central Valley and the Bay Area, those two regions have very different load profiles and service cost characteristics, which should be adequately reflected.

Relatedly, MGC and transmission costs are likely to differ considerably between and within service areas. EDF is therefore in agreement with SEIA, who states that “given the fact that marginal generation costs may vary between IOU service territories and the pattern and level of distribution costs may vary between IOUs, SEIA does not believe that TOU rate periods need to be consistent among the IOUs.”¹⁴ EDF maintains that accounting for the inherent differences between service areas in TOU rate period design is essential to promoting the long-term goal of increased consumer acceptance.

¹¹ *Id.* at 8.

¹² *Comments of California Farm Bureau Federation Addressing Questions Related to Issues Presented in the 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 11-12 (filed Jun. 27, 2016).

¹³ *Comments of the Green Power Institute on the Scoping Memo and Ruling*, 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 3 (filed Jun. 27, 2016).

¹⁴ *Opening Comments of the Solar Industries Association Responding to Scoping Questions*, 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 34 (filed Jun. 27, 2016).

C. *Customers are more adaptable than some parties in this proceeding believe them to be.*

Some existing rate period proposals hinge on the presumption that customers are generally unable, or unwilling to change.¹⁵ For example, the California Solar Energy Industries Association (CalSEIA) states “at the same time that we take large steps toward greater sophistication in TOU rates, it is also essential to maintain a less complex TOU option as the default TOU rate for wide scale customer acceptance,”¹⁶ while SEIA “believes that, for widespread customer acceptance, the structure of most TOU rates will need to be much simpler than the TOU periods that the CAISO proposes, particularly if TOU rates are to become the default applicable to most small customers.”¹⁷

This presupposition encourages the use of simplistic frameworks that lack the capacity to capitalize on some of TOU rate-setting’s most impactful benefits. While EDF understands the concern that complexity can deter customer participation, such an outcome stems from a need for more comprehensive marketing, education, and outreach rather than an inability on the part of customers to understand more complex periods. As well, there are myriad examples of third party service providers developing very simple customer offerings built upon very complex underlying costs, including mobile phone service and, in electricity, the ongoing success of the very complex Net Energy Metering rules marketed successfully by rooftop solar companies – both of which are examples of how third party providers can aid in the “translation” of rates to customers. Accordingly, if TOU rate structure is to have the greatest positive impact, the

¹⁵ See, e.g., *Opening Comments of The Utility Reform Network in Response to Scoping Questions Regarding Data and Methods for Setting Time-of-Use Periods*, 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 5 (filed Jun. 27, 2016).

¹⁶ Comments of the *California Solar Energy Industries Association Responding to Scoping Questions*, 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 3 (filed Jun. 27, 2016).

¹⁷ *Opening Comments of the Solar Industries Association Responding to Scoping Questions*, 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 34 (filed Jun. 27, 2016).

Commission should endeavor to give consumers who choose to do so the opportunity to adopt and learn how to respond to more complex rate period options. These options may include the use of more than two seasons, a greater differentiation between peak and off-peak pricing, and a dynamic energy price that begins to resemble the “smart home rate” that rewards the use of enabling technology and the ability to respond rapidly to sudden price changes.¹⁸

D. Potential CAISO expansion will make the formulation of appropriate TOU time periods even more important.

As Senate Bill 350 contemplates a move to a regionalized CAISO market,¹⁹ it will become even more important to balance resources and set time periods in a way that integrates renewable energy effectively. While EDF agrees with SEIA that “an expanded CAISO market will help to meet difficult operating conditions, such as steep evening ramps” and “provide new and more diverse markets for excess renewable generation,”²⁰ this does not obviate the need for the Commission to consider how to set appropriate time periods. For example, while such an expansion might aid in assuaging concerns about solar overgeneration, wind energy from other states might affect determination of the most beneficial hours to use power. In other words, a surplus of wind energy might reveal additional hours where prices should be low in order to encourage electricity use. Given the uncertainty inherent in the development of the CAISO expansion, EDF reiterates its suggestion in prior comments that the Commission consider “development of processes that result in regularly, automatically updating TOU time periods and

¹⁸ 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).

¹⁹ California Public Utilities Code Section 359(a) (2015).

²⁰ *Opening Comments of the Solar Industries Association Responding to Scoping Questions*, 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 16 (filed Jun. 27, 2016).

price ratios between periods”²¹ as part of an adaptive management strategy. Such a process will reduce administrative burden and still allow efficient adaptation to changing conditions.

E. *More research on the correlation between greenhouse gas emission reductions and TOU rates need to be conducted.*

In opening comments, The Utility Reform Network (TURN) states “data regarding ‘[g]reenhouse gas emissions intensity associated with changing load shapes’ will...be difficult to gather or estimate and may require additional modeling work in other proceedings (such as those relating to the development of Integrated Resource Plans).”²² While EDF does not agree with comments previously made by TURN on this issue,²³ EDF agrees that additional modeling is important, as previously recognized by the Commission, who highlighted a need to “conduct more detailed analysis and modeling to clarify the impacts that load shifting will have on overall GHG emissions.”²⁴

III. CONCLUSION

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

²¹ *Comments of Environmental Defense Fund on 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*, 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 2 (filed Jan. 15, 2016).

²² Opening Comments of *The Utility Reform Network in Response to Scoping Questions Regarding Data and Methods for Setting Time-of-Use Periods*, 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 3-4 (filed Jun. 27, 2016).

²³ *Comments of The Utility Reform Network Informing Time of Use Periods Analysis Workshop*, 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 6 (filed Feb. 12, 2016).

²⁴ *Decision on Residential Rate Reform for Pacific Gas and Electric Company, Southern California Edison Company, and Sand Diego Gas and Electric Company and Transition to Time-of-Use Rates*, 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, D. 15-07-001 at 81 (filed Jul. 3, 2015).

Respectfully signed and submitted on July 19, 2016.

/s/ Larissa Koehler

Larissa Koehler

Attorney

Environmental Defense Fund
123 Mission Street, 28th Floor

San Francisco, CA 94105

Phone: 415-293-6093

Email: lkoehler@edf.org

/s/ James Fine

James Fine

Senior Economist

Environmental Defense Fund
123 Mission Street, 28th Floor

San Francisco, CA 94105

Phone: 415-293-6060

Email: jfine@edf.org