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Additional submitted attachment is included below.

**STATE OF CALIFORNIA
BEFORE THE CALIFORNIA ENERGY COMMISSION**

In the matter of:)	Docket No. 19-OIR-01
)	
Load Management Rulemaking)	SMUD Comments Re:
)	Load Management Rulemaking
)	
)	March 16, 2020
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**Comments of SACRAMENTO MUNICIPAL UTILITIES DISTRICT on
Load Management Rulemaking**

The Sacramento Municipal Utility District (SMUD) respectfully submits these comments to the California Energy Commission (CEC) regarding the *Draft Load Management Rulemaking Scoping Memo* (“Load Management Scoping Memo”) setting forth the proposed scope and schedule for the CEC’s 2020 Load Management Rulemaking (Docket 19-OIR-01).

The Load Management Rulemaking fulfills the requirements of SB 49 (Skinner, Chapter 697, Statutes of 2019), directing the CEC to investigate and pursue opportunities for reducing greenhouse gas (GHG) emissions through demand flexibility in buildings, appliances, and water pumping. The CEC is to adopt standards for a program of electrical load management for each utility service area (Pub. Res. Code § 25403.5).

SMUD strongly supports the state’s decarbonizing efforts to reduce GHG emissions by promoting transportation and building electrification and increasing the development of renewable resources. We take a holistic approach to climate change, and we do everything we can to cost-effectively reduce GHG emissions in the region.

As we do so, maintaining competitive rates is one of SMUD’s core values. Our rates are designed to balance the following goals:

- Reflect the cost of energy at the time it is used
- Reduce peak usage
- Encourage efficiency and conservation
- Minimize transition “shock”
- Be easy to understand
- Meet the needs of less flexible customers
- Be allocated equitably

SMUD began implementing Time-of-Use (TOU) rates for commercial and industrial customers in 1993. By 2012, all commercial customers were transitioned from tiered rates to TOU rates.

Throughout 2012-2013, SMUD implemented a Smart Pricing Options Pilot Program which provided the basis for California's transition to time-of-use rates as the default for utility customers. SMUD began implementing Time-of-Day (TOD) rates for residential customers in 2018 and completed the transition in 2019. After the first full summer, 98% of our customers had remained on the TOD rate, with only 2% opting out for a flat rate.

SMUD is strongly committed to continue exploring advanced time-varying rates and incentive structures coupled with appropriate load flexibility and automation that could benefit our customers. While SMUD agrees that load management is an important objective, SMUD urges the CEC to consider:

- role of the CEC in setting utility tariffs and rate signals;
- costs and complexity associated with the implementation of new rates;
- utility resource constraints given current priorities and workload;
- use of pilot programs to enhance customer value;
- utility experience with implementing new rates;
- impacts on reliability;
- other dynamic rates and real-time pricing efforts underway;
- statewide central price database may be a cybersecurity concern;
- alignment with state environmental goals; and
- standardization of price communication versus mandating specific rate structures.

SMUD appreciates the thoughtful approach CEC staff has taken on the proposed scope and general schedule for the 2020 Load Management Rulemaking. SMUD supports the CEC's overall goal of promoting automating end-use choices which can shift electricity consumption away from system load peaks and ramps, toward times of excess capacity. However, it is important that the CEC's regulations recognize the limits of the CEC's authority to mandate certain rates or rate structures. As the California Municipal Utility Association explained in the CEC's 2008 rulemaking, Docket No. 08-DR-01, the CEC has authority and legislative directive to make recommendations on rates and rate structures, the CEC does *not* have the authority to mandate or require CEC approval of any specific rates or rate structures.

With this distinction in mind, SMUD offers the following comments and recommendations in response to the CEC's proposed amendment to the Load Management Tariff Standard.

Utility information systems are complex, and resources are constrained

In adopting any statewide standard, the CEC should contemplate an implementation schedule that considers the extent of necessary upgrades to utility information systems. Utility billing processes, procedure functions, and associated information systems are core enterprise platforms. These platforms are not easily reconfigured to manage new tariff structures. Any

implementation of a new standard for price communications must be scaled and must consider the time and resources required to develop and implement system upgrades to accurately manage sustainable, real-time price operations. Sufficient time must be allotted in any implementation of a new tariff structure or standard to thoroughly vet these upgrade costs and requirements. SMUD has committed significant resources to implement recent Board approved rate increases, test new commercial rates, continue to test results of the TOD rollout and work on a Net Energy Metering (NEM) successor tariff. Any recommendation from the CEC should allow for utilities to pursue pilot programs based upon their own needs, strategic plans and rate roadmaps.

Pilots and programs are a compelling alternative to mandating a definitive tariff

Pilot programs are better alternatives to test concepts versus mandating the implementation of a definitive tariff. SMUD's success in implementing new rates such as TOD, for example, was possible because SMUD took the time to research, plan, study, test, educate staff and customers, set up systems and conduct an educational campaign. The entire process took nearly seven years from the concept until the actual rates were rolled out. A similar multi-year effort was done by the California Investor Owned Utilities (IOUs) when they embarked on the Statewide Pricing Pilot which eventually led to the IOUs adopting mandatory TOU rates for their residential customers.

Additionally, carefully designed programs could deliver load flexibility benefits without resulting in complex tariffs. SMUD is actively piloting program designs that decouple the economic load management signals from the customer incentive structure. Simple incentive programs may capture most of the benefit of a marginal cost signal while increasing customer value and adoption. The automation technology can respond to a dynamic signal, while the customer savings are provided through simple, understandable messages and fixed compensation mechanisms like subscription or bundled credits.

The CEC should leverage utility experience

Successful design and implementation of a Load Management Standard will require that the CEC partner with electric utilities. SMUD strongly encourages staff's continued engagement with utility experts and other stakeholders as the CEC develops future Load Management Standards. This ongoing coordination is particularly important to ensure that real-time demand flexibility on the grid is judiciously implemented to support the state's broader environmental goals.

Customer education, utility experience, tools, automation, billing, and program design are critical features of any price communication standard. There remains much to learn as "opt-in" pilots and programs scale up. Dynamic rates are not yet a viable option for broad-scale customer deployment. SMUD has adopted a rate roadmap, and in October 2018 began transitioning our customers to TOD rates. This effort is successfully encouraging reductions in energy use during peak hours (e.g., between 5-8 p.m.).

Our consumers are still adjusting to this shift to TOD rates. Through the TOD vetting process, we learned that our customers tend to prefer more simple rate structures that allow customers to budget their energy costs. The complexities of a real-time pricing structure (e.g., varying rates at different hours of every day) presents added uncertainty and risk - especially for low-income consumers who are already struggling to make ends meet. Utilities need more time to conduct internal pilots, demonstrations, and educate customers before broadly deploying dynamic pricing.

Dynamic pricing may impact reliability

Utility reliability depends upon accurate forecasts of required capacity. Current utility planning and resource procurement practices are dictated by peak forecasted usage. SMUD agrees that load flexibility plays an important role in meeting capacity, however, load flexibility should not be an option or opt-out product if it is to be counted on in capacity planning and operations. Aggregate load responses need to be better understood in order to be depended upon to displace traditional utility investments. Additionally, to be counted as “capacity,” programs with reliable and consistent responses will need to be developed.

Forecasts are also critical to reliability. Building more reliable forecasts is a constant work-in-progress. Models and assumptions regarding transportation and building electrification and energy efficiency are significant factors in a utility’s cost decisions. The financial consequences of unforeseen events are substantial, and our forecasts are only as good as historical data. In a world where climate conditions are rapidly changing, accurate forecasting is a perpetual challenge. Utilities need to build more reliable forecasts to respond to the rapidly evolving grid demands. Developing confidence in price-response of various customer types and technologies will be important to ensuring that forecasting can be done accurately with dynamic pricing programs.

Other dynamic rates and real-time pricing efforts are underway

In making recommendations for new load management standards, the CEC should leverage existing programs and investigations. In addition to the activities already discussed above, the CPUC is exploring various dynamic rates and real-time pricing. This is being done under Application (A.)19-03-002 (San Diego Gas & Electric GRC Phase 2 Proceeding). The CEC should coordinate its efforts with the CPUC to leverage the work that is already going on, so that way it sends a common message to all California utilities.

Statewide central price database may be a cybersecurity concern

In recommending a structure for ensuring visibility to individual utility dynamic rates, the CEC must ensure that the data remains secure and accessible only to legitimate users. Centralizing access to such data from a single database hosted by the CEC or another entity raises substantial cybersecurity concerns that must be addressed. As currently indicated in the draft regulation language, prior to the fifth business day of each month retail electricity providers would be required to submit to the CEC, for aggregation and publication, a current database of

prices and calculations for all approved rates. If a customer is exposed to a different (inaccurate) price through cyber malice then the customer may be exposed to conditions where, for example, a battery can be discharged or charged at the wrong time causing issues with the interconnected distribution grid.

Electricity rates must be aligned with state environmental goals

SMUD urges the CEC to thoroughly investigate all the implications of real-time pricing during this rulemaking proceeding. Introducing a standard that dictates a real-time pricing structure must be carefully balanced with the state's accelerated renewable goals (e.g., SB 100, etc.), electrification priorities, and energy rates. It is imperative that Load Management Standards do not jeopardize or endanger California's broader environmental goals.

Premature expansion of real-time pricing could result in unanticipated rate impacts that may disincentivize the accelerated electrification of other sectors like transportation. Transportation emissions are far greater than a utility's carbon footprint. To encourage consumers to choose cleaner vehicles, electric water heaters, heat pumps, etc., electricity rates must remain affordable, and predictable.

Standardize price communication versus mandating specific rate structures

The CEC should focus this rulemaking on standardizing price communications rather than on mandating specific rate structures or pricing communication tools. Innovation is vital to ensure the lowest levelized cost to consumers. SMUD encourages the CEC to consider the adoption of a standard for price communications that could form the foundation for a statewide system that automates the creation of hourly costs or signals. Such hourly costs or signals should be designed to allow end-use automation technologies to provide added flexibility to the grid. A statewide standard will encourage the market to innovate durable communications technology solutions for rate optimization, with the greatest economic benefits. A standard that incorporates simpler price communications protocols may prove to be the most suitable and cost-effective solution. In addition, an individual utility protocol adopted by the utility's governing body should be an acceptable alternative to any statewide standard.

To drive innovation, prevent future monopolistic practices, and safeguard the cost benefit for consumers, the CEC should not mandate any specific communications software, application, or apparatus in the Load Management Standards. For example, CTA-2045 modular communications port standard--as an interface for major appliances like electric water heaters and HVAC equipment--could be an option for energy management appliances. However, CTA-2045 ports, or similar products that support OpenADR over Wi-Fi or mobile networks, should not be a mandatory requirement.

Price communication standards considered, however, cannot direct any specific load management tariff design. SMUD's preliminary analyses show that real-time pricing benefits attributed to supply cost recovery would be nominal. As the marginal cost of energy on the grid has steadily decreased due to renewables, this has resulted in less hours in a day where energy prices exceed SMUD's average retail rate. Given this decreasing marginal cost, the

customer benefit of a real-time pricing structure - even for commercial and industrial customers who may likely avoid only a fraction of their total usage - may be minimal.

Conclusion

As California moves toward a zero-carbon future, coordination between utilities and regulators becomes ever more important, and innovation will be vital to ensuring we reach the state's goals at the lowest levelized cost to consumers. Load Management is a complex issue and will necessitate a delicate balance between the CEC's recommendations on rate design and recognition of the autonomy of publicly-owned utilities to administer independent rate-structuring decisions within their service territories. Pilots are critical to successful rollout of new rates. Likewise, real-time pricing structures must be carefully vetted and sensibly implemented to avoid impacts to reliability and to support the state's broader environmental goals.

SMUD appreciates the opportunity to provide comments on this Load Management Rulemaking.

/s/

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cc: Corporate Files (LEG 2020-0040)