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Additional submitted attachment is included below.

April 22, 2021
California Energy Commission
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Sacramento, CA 95814-5512

Comments of TeMix Inc. on the California Energy Commission Docket No. 19-OIR-01: CEC Staff Proposed Amendments to the Load Management Standards, April 12, 2021

TeMix strongly supports the following key CEC staff recommendations as critical to achieving California's 100 percent clean energy and building and transport electrification goals at the lowest cost to customers:

"The proposed load management standards amendments require utilities to develop locational hourly or sub-hourly rates that can be offered to all customers."

"The intent of the proposed amendments is to form the foundation for a statewide system of time and location dependent signals that can be used by automation enabled loads to provide real-time load flexibility on the electric grid."

To ensure the success of the proposed amended Load Management Standards, TeMix recommends the following additional amendments:

1. Require real-time pricing tariffs (RTP) for the Load Management Standards be implemented with binding forward retail prices and transactions as the necessary support for resource adequacy and stabilization of bills and energy load in response to hourly and sub-hourly real time pricing (RTP). Otherwise, extreme weather or the fast response of electric vehicle charging, battery charging and discharging, electric heating and cooling, electric pumps, and other highly flexible devices can cause extreme bill and load volatility and insufficient forward investment to maintain resource adequacy.
   The CEC has already funded and completed the necessary proof-of-concept pilot for such a forward and real-time price and transaction solution in the Retail Automated Transactive Energy System (RATES)[1] project. The CEC and CPUC should immediately support and enable the deployment of RATES by all IOUs, CCAs, and municipals.

2. Deployment of the RATES solution cannot wait for more unnecessary, pure RTP pilots as pure RTP will ultimately fail for the reasons described above and cause another California electricity crisis. Time-of-Use tariffs are not dynamic and cannot respond to the already present conditions of high renewables variability, extreme weather, and responsive assets thereby increasing the costs to customers.

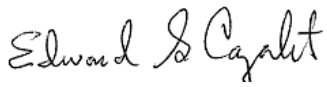
[1] Cazalet, Edward, Michel Kohanim, Orly Hasidim. 2020. A Complete and Low-Cost Retail Automated Transactive Energy System (RATES). California Energy Commission. Publication Number: CEC-500-2020-038.

The best way forward is for the CPUC and the CEC to facilitate the adoption of the Subscription Transactive Tariff (STT) supported by the RATES platform for price communication, device optimization and settlement that can be integrated with the CEC MIDAS platform and existing utility customer, billing, real-time operations, and scheduling systems. The STT can be deployed first for those customers with responsive assets such as EVs, batteries, electric heating and cooling, electric water heating and electric pumps including irrigation pumps followed by all interested customers including low-income customers who can be granted discounted subscriptions.

3. The proposed load management standards language should be further updated to account for the shift to near zero marginal and mostly fixed cost solar, wind, and storage resources and the limits on energy production from these resources. Capacity is impossible to define in a system with high renewables, storage, and dynamic pricing and therefore capacity cost cannot be separated from energy cost. Forward and real-time energy prices are needed that recover both fixed and variable costs and recover more fixed costs when the systems are more loaded and less fixed cost when the systems are lightly loaded.
   Dynamic prices are discovered and not set because customers and their automated devices will decide how much and when to use energy at prices that may range from around zero to one-hundred times average prices for given intervals and locations. Therefore, the report's definition of marginal cost in Chapter 7, needs further revision for the low carbon world of low variable and mostly fixed cost generation, storage, and automated price response of end devices to support dynamic tariffs that fully price energy when it is scarce because of weather and storage limits.

With these additional amendments, the Load Management Standard will play a vital role in achieving California clean energy and electrification goals at the lowest cost to customers.

Respectfully submitted,



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