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OhmConnect's Comments on the Scoping for the Load Management Standards Rulemaking

OhmConnect's comments focus on:
* Residential importance. OhmConnect encourages the Commission to pay particular attention to the opportunities for and barriers to residential load management;
* Real time pricing. OhmConnect supports the adoption of dynamic or real-time pricing, and stresses the importance of viewing the residential sector as an important target for these initiatives;
* Market based approach. OhmConnect recommends that the Commission limit its scope of issues to areas in which regulatory and policy bodies can make evidence-based and optimal decisions.

Additional submitted attachment is included below.

January 21, 2020

California Energy Commission
Dockets Office, MS-4
Docket No. 19-OIR-01
1516 Ninth Street
Sacramento, CA 95814-5512

OhmConnect's Comments on the
January 14, 2020 Load Management Rulemaking Proceeding

Dear Commissioners and Staff:

OhmConnect, Inc. (OhmConnect) appreciates the opportunity to submit comments on the scope of the Load Management Rulemaking. We are excited to be working with other stakeholders and the Commission to solve one of the biggest challenges that we have in creating a decarbonized grid.

Impact of Residential

During the workshop, the Commission and stakeholders recognized the importance of creating flexible and dynamic loads to build a decarbonized grid. While this is an issue of importance for all customer classes, OhmConnect encourages the Commission to pay particular attention to the opportunities for and barriers to residential load management.

Residential load has recently surpassed commercial load in total electricity consumption[1]. More importantly, residential load is responsible for the majority of the new electricity demand during the evening ramp, which is highlighted by the red circle in Figure 1 ("the neck of the duck"). To date, this electricity demand in the evening ramp is primarily met by less efficient and dirtier natural gas peaker plants.

Historically, load management standards have tended to focus on commercial and industrial load due to the size of load per meter; however, as alluded to in the Load Management Rulemaking Scoping Memo, major technological advances (i.e. smart meters) have enabled many residential homes to participate for the first time. As Severin Borenstein mentioned in the workshop, having all customers increasing their thermostat setpoint by a few degrees would be transformative for the grid.

[1] US Energy Information Administration. Monthly Energy Review. Section 7.6 - Electricity End Use. https://www.eia.gov/totalenergy/data/monthly/pdf/sec7_19.pdf

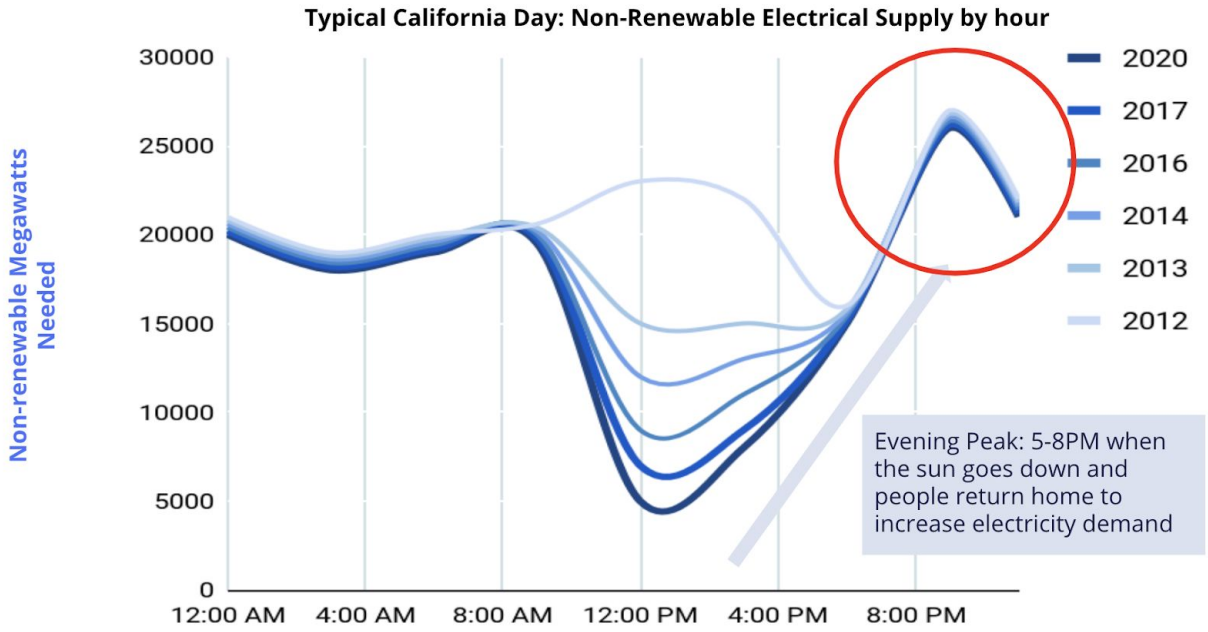

Figure 1: California non-renewable generation needed over the course of a typical day, from 2012 to projections into 2020.

OhmConnect supports the adoption of dynamic or real-time pricing, and stresses the importance of viewing the residential sector as an important target for these initiatives. Specifically, we recommend addressing the following issues specific to the residential sector:

1. **Standardization**. Few programs have existed to date to encourage residential load management. Often, those programs have been met with a shifting target. An example is the Demand Response Auction Mechanism (DRAM), which has had different contractual requirements for each of the five auctions in its existence. The lack of continuity discourages companies from participating. OhmConnect believes it is important to create a consistent standard for measurement and verification (M&V). Regardless of what M&V method is created, OhmConnect recommends that the Commission establish a timeline for the method to operate and be changed.

2. **Incentivization**. A variety of incentives occur to encourage individual users to adopt new clean energy technologies, including solar, storage, and electric vehicles. In a similar fashion, OhmConnect recommends that the Commission consider a small, but meaningful incentive for residential households to participate in shifting load based on grid needs. This incentive would show customers that the state of California supports users changing their electricity load to provide value to the grid and it would help overcome the activation barrier that consumers have with a novel offering. Possibilities for this incentive include automated technologies (e.g. smart

thermostats, smart plugs, smart hot water heaters) and could be diverted from existing programs that still incentivize non-grid connected devices that have energy efficiency value. For example, the incentives that encourage non-incandescent light bulbs and heat pump hot water heaters could now be redirected into devices more suited for grid flexibility. OhmConnect recommends that incentives be focused primarily on low to medium income customers and disadvantaged communities, based on CalEnviroScreen.

3. **Awareness**. The California Energy Commission is in a unique position to provide broad support for new initiatives that support dynamic control of household energy consumption. Keep in mind that most households are not aware of the true cost of electricity and the manner in which grid needs change throughout the day and year. The extent of most households' awareness of electricity usage is limited to their bill. The CEC could help spread broad awareness, either through in-bill inserts, email campaigns, or real estate on CEC's website. OhmConnect recommends dedicating a portion of any marketing, education, and outreach budget to the residential sector.

Real-Time Pricing

All customer classes, but residential customers in particular, lack a proper price signal to adjust their load in response to prevailing grid needs. While the ongoing implementation of TOU rates is a step in the right direction, TOU rates do not capture the full economic and environmental benefits of dynamic pricing.

Implementing voluntary real time price (RTP) tariffs for all customer classes, including residential customers, would create the proper price signals for households to change the manner in which they use energy. As we state above, the residential sector is responsible for a large portion of the evening ramp and instituting tariffs that relay the true cost of electricity throughout the day could go a long way toward flattening demand on the grid. Once such tariffs are in place, third-party businesses could help customers manage their electricity usage, in part through direct load control. Consumer companies have proven across a variety of sectors that complex tasks can be simplified for households, including finances (e.g. Wealthfront), transportation (e.g. Lyft), personal fitness (e.g. Strava), and personal logistics (e.g. Google). There is evidence from existing programs, including demand response, that free enterprise can do the same for energy management.

Regulators have operated under the assumption that electricity bill volatility is scary for consumers, creating a significant barrier to entry. In fact, consumers are exposed to volatility in their everyday lives, from traffic patterns to stock prices. Uber, one of the largest consumer companies in the world, does not fear showing surge pricing to customers, and it helps provide the behavioral response that Uber seeks. OhmConnect implores the Commission to expose the true price of electricity -- the Societal Marginal Cost

(SMC) that Severin Borenstein spoke about to interested consumers instead of **requiring** all consumers to enroll in rates that include costs for "insurance" they may not want or need.

Recent developments in the Texas market should also be considered as the RTP conversation moves forward. Several new companies, including Evolve Energy, Bulb, and Griddy Energy, have exposed wholesale energy market pricing to consumers, to strong support. These companies have been among the fastest growing retail energy providers in Texas, despite having price surges of $9000/MWh several times in the summer of 2019 (California ISO's price cap is $1000/MWh). During those price surges, awareness of high prices increased across the Texas population due to media coverage[2]. While some people raised concerns about the high prices, others vehemently defended the model of the wholesale energy market passthrough. Regardless of which side one took, people were talking about electricity prices far more than Californians ever do.

Laissez faire approach

OhmConnect recommends that the Commission limit its scope of issues to areas in which regulatory and policy bodies can make evidence-based and optimal decisions. For example, the electric vehicle presentation (by Noel Crisostomo) highlighted that unmanaged charging cycles for EVs would prove to have less curtailment than the TOU rate currently being implemented. Especially when it comes to consumer-facing policy impacts, the unintended consequences of well-intentioned policies can create adverse impacts and slow down innovation. Two areas (products and demographics) in particular are prone to have unintended consequences if policies overspecify requirements for each.

1. **Products**. The state of consumer products moves much faster than regulators can anticipate and assess. OhmConnect recommends that the Commission take a broad based approach to what technologies may be successful in the future. Specifically, as the Commission reviews residential price responsive automated technologies, it should consider the near future set of consumer products (e.g. products that exist at CES -- the Consumer Electronics Show) as well as the long term goals of major consumer corporations (e.g. Google and Amazon's push towards a connected home).

2. **Demographics**. During the workshop, participants discussed the demographic user segments that would be able to respond to real time events. In some cases, the conversation veered toward stereotypes (e.g., "grandma would not be interested in

[2] Reuters. https://www.reuters.com/article/texas-power-demand/texas-power-prices-briefly-top-9000-mwh-for-second-time-in-a-week-idUSL2N25B1VV
Houston Chronicle. https://www.houstonchronicle.com/business/energy/article/Power-demand-prices-soar-with-temperatures-14302372.php

this") that may not reflect the true capabilities of potential users. OhmConnect objects to these characterizations and cautions the Commission to not dismiss or artificially limit the potential for specific demographics to provide value to the grid. Recent societal trends show that prevailing hypotheses on the demographics that will adopt certain technologies is misguided. For example, the 65+, Female demographic was characterized to have a low likelihood to participate in social gaming driven by mobile phones. However, popular games such as *Candy Crush* and *Words with Friends* have proven that this demographic can be effectively engaged in social gaming. Similarly, using the proper messaging and engagement strategies, most demographics can successfully begin to manage their energy use in response to real-time price signals.

About OhmConnect

OhmConnect is a third-party Demand Response Provider (DRP) founded in 2013 and headquartered in San Francisco, California. The company provides Demand Response (DR) services to residential retail electric customers in California pursuant to Electric Rules 24 (Pacific Gas and Electric Company (PG&E) and Southern California Edison Company (SCE)) and 32 (San Diego Gas & Electric Company (SDG&E)). Specifically, OhmConnect's free software service notifies households of impending DR events and pays them for their energy reductions, without requiring purchase or installation of additional hardware. OhmConnect is registered to participate as a DRP in the wholesale electricity market operated by the California Independent System Operator Corporation (CAISO).