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SkyCentricsâ€™ Comments on the January 14, 2020 Load Management Rulemaking Proceeding

Additional submitted attachment is included below.

January 24, 2020

California EnergyCommission
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1516 Ninth Street
Sacramento, CA 95814-5512

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

Dear Commissioners and Staff:

SkyCentrics, Inc. (SkyCentrics) appreciates the opportunity to submit comments on the scope of the Load Management Rulemaking. We have worked with other stakeholders on a white paper entitled "Why We Need National Universal Open Standards for Connected Residential and Small Commercial Appliances", which we are submitting along with some of the authors, because we feel that the Commission will benefit from understanding how universal open standards will help California achieve its goals to lower carbon emissions more quickly and cost effectively. We look forward to working with the Commission to overcome the challenges ahead to create a decarbonized grid and lowering GHG emissions.

Impact of Residential Loads on the Duck Curve & the benefits of a universal open standard port

During the workshop, the Commission and stakeholders recognized the importance of encouraging intelligent, flexible, connected, and dynamic loads to build a decarbonized grid. The value of connected, intelligent, flexible and responsive loads was made clear when SDG&E showed in their presentation that the timing of peaks on some of their circuits did not align with system peaks. While appliances that can be scheduled have been shown as a valuable intermediate step towards fully connected, intelligent and responsive loads, the SDG&E presentation showed that a fixed schedule in an appliance, responding to a fixed ToU rate would actually worsen the load profile on that circuit.

Appliances are unique in that they have typically not had communications or even scheduling capabilities. Instead, they come on cyclically and/or during random times of the day. As soon as Time of Use rates are in place, appliances will need to be scheduled to avoid expensive times. While some OEMs will be able to add interfaces or mobile/cloud/voice apps to enable this functionality, others will be constrained from doing so by the cost of adding this functionality. For those OEMs, having an open standard port, like a USB port for computers, that allows a third party module, or even a module from the OEM (like the Siemens EVSE), will allow the communications and scheduling to be added as an option when necessary, so that the inexpensive non-schedulable, non-connected device can be sold in areas where those features are not necessary because ToU has not yet been implemented, and then added as an option when necessary for ToU or dynamic pricing.

The most important feature of a universal standard port is the ability to future proof the

appliance during its entire 10-20 year life. There is no other way to guarantee the ability of an appliance to always be connectible throughout its lifetime. Even the largest of Internet of Things companies have ended their support of their connected products. A standard port means that a new module can be sent through the mail to a customer for easy installation, bringing that appliance back online to support the grid and the customer's ability to take advantage of electrical rates that support Time of Use or dynamic real-time pricing.

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 of the duck curve which is an increasing concern for the California grid. Historically, load management standards have tended to focus on commercial and industrial load due to the size of load per meter; however, the Load Management Rulemaking Scoping Memo discussed the major technological advances (i.e. smart meters) that 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.

SkyCentrics 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. SkyCentrics also encourages the Commission to consider joining the State of Washington and mandating a universal open standard port that is CTA-2045 or equivalent to be in water heaters and then eventually in other appliances over time. Washington State passed that law, SB1444, last year, and it requires new water heaters sold in Washington state after January 1, 2021, to have a CTA-2045 port.

CTA-2045 products are already in the market, including AO Smith water heaters, Siemens EV chargers, and Mitsubishi mini-splits, with many others that have been piloted over the last 5 years by utilities such as Pentair IntelliConnect pool pump controllers, Emerson thermostats, and IslandAire PTACs.

Real Time Pricing

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 requirements for each of the five years of its existence. The lack of continuity discourages companies from participating. SkyCentrics believes it is important to create a consistent standard for measurement and verification (M&V). Regardless of what M&V method is created, SkyCentrics recommends that the Commission establish a timeline for the method to operate and be changed.

Incentivization. A variety of incentives occur to encourage individual users to adopt new clean energy technologies, including solar, storage, and electric vehicles. In a

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[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

similar fashion, SkyCentrics 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 are Time of Use, certainly, but in the same way that CA has incentivized non-incandescent light bulbs, based on their intrinsic value to the grid as an energy efficiency value (a one time drop in kWh), the commission should consider incentivizing smart, connected or future connectible devices that can provide ongoing flexibility well into the future and every single day. We should no longer incentivize any load that is 'forever dumb' at the same incentive value as connected or connectible loads (connectible by a homeowner installable method that can be sent through the mail, not through an installation that requires a truck roll to the home). For example, there are many Heat Pump water heater programs throughout the country that incentivize forever dumb water heaters at the same incentive rate as connected or connectible water heaters that generally cost a little more and deserve a higher incentive, especially given their future long term value to the grid.

About SkyCentrics

SkyCentrics is a third-party Demand Response provider providing last mile connectivity to appliances and building loads using the open standards OpenADR, CTA-2045, and Volttron, founded in 2013 and headquartered in San Francisco, California. The company provides Demand Response (DR) services to utilities throughout the United States, as well as enabling other Demand Response providers and aggregators to connect to the OEMs that provide CTA-2045 enabled appliances and large electric loads through our OpenADR cloud and our cloud REST API. Homeowners and building owners get web, mobile and voice controlled apps to monitor and schedule their homes and loads, and utilities and aggregators are enabled to orchestrate millions of loads to support the grid.