

# Comments of Google LLC and OhmConnect, Inc. on the Advanced DER & Demand Flexibility Management Workshop June 11, 2021

## Introduction

In response to the California Public Utilities Commission (“CPUC” or “Commission”) Energy Division (“ED”) Staff May 25, 2021 Workshop on Advanced DER & Demand Flexibility Management (“Workshop”), and pursuant to Energy Division’s invitation to submit informal written comments, Google LLC (“Google Nest”) and OhmConnect, Inc. (“OhmConnect”) offer these joint comments on the proposal to explore advanced DER and flexible load management, retail rate reform, and load modifying demand response. Google LLC, an Alphabet Inc. company, is the maker of Nest devices, including Nest thermostats, sold under the Google Nest brand. OhmConnect is a third-party demand response provider (DRP) serving primarily residential electric customers in California.

In the wake of the August 2020 rolling power outages and widespread concerns about future grid reliability, the need for demand flexibility has never been more clear. These power outages showed the fragility of the grid when extreme temperatures significantly increased demand and constrained generation supply. The Final Root Cause Analysis, released on January 13, 2021, rightfully included developing dynamic rate designs reflective of real-time market conditions to enable automated demand flexibility as a recommendation to reduce the likelihood of future grid emergencies.<sup>1</sup> As Commissioner Houck indicated in her opening remarks at the Workshop, “we cannot simply build our way out of the problem...reshaping demand and flex to match supply is going to be as or more important than strong buildout to achieve SB 100 goals while maintaining service reliability.”<sup>2</sup> Commissioner Houck also noted that “just as our need for more flexible demand becomes acute we are now gaining widespread access to the tools and technology needed to reshape demand and make it more responsive.”<sup>3</sup>

As providers serving hundreds of thousands of distributed residential customers through a combination of devices and behavioral engagements, we agree with Commissioner Houck’s statements. There has been a proliferation of connected devices on the grid and these should be enabled as grid assets and monetized as such. The tools are there, the need is urgent, and the time is right to develop advanced methods to incentivize the flexibility that these customers are equipped to provide.

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<sup>1</sup> See California ISO, Final Root Cause Report, January 13th 2021, at p. 74:

<http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>

<sup>2</sup> Opening remarks,

<https://cpuc.webex.com/recordingservice/sites/cpuc/recording/3870707e9fa11039af7f005056812a0a/playback>

<sup>3</sup> Ibid.

# Recommendations

Google Nest and OhmConnect support the proposal by the Energy Division. We believe the proposal is a good jumping-off point for developing mechanisms by which residential customers can respond to fluctuating grid conditions and be properly incentivized to (and thereby derive the most value from) shifting their usage patterns based on grid need.<sup>4</sup> We are intrigued by the goal of developing the “UNIDE” signal and, in particular, view the first four steps of the six-step roadmap as being critical elements of the Energy Division vision.<sup>5</sup> Although we recognize that the material presented at the Workshop is a straw proposal that will undergo iterations, the proposed roadmap appears to put California on a trajectory towards the overarching goal of increasing demand-side flexibility on the grid. Going forward, we recommend that the Commission:

- 1. Ensure that the proposal continues to recognize the important role of third parties in the UNIDE framework and encourages participation by residential customers with enabling devices.**
- 2. Open a new proceeding immediately to build a centralized and cohesive record around these issues.**

# Discussion

**1. The Commission should ensure that the proposal continues to recognize the important role of third parties in the UNIDE framework and encourages participation by residential customers with enabling devices.**

Residential customers should be a critical part of any demand flexibility solution. According to the American Housing Survey, there are over 7.5 million homes with central A/C in California.<sup>6</sup> The pool of households in IOU service territories is even greater at over 10 million households, with residential electricity usage accounting for over 17% of the total electricity consumption,

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<sup>4</sup> See, “Proposed Roadmap for DER & Flexible Management”, May 25, 2021: <https://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=6442469346>.

<sup>5</sup> 6 Steps of the UNIDE proposal as outlined in the May 25, 2021 Workshop on Advanced DER & Demand Flexibility Management:

Step 1: Develop standardized, universal access to current electricity price

Step 2: Introduce dynamic prices based on real-time, wholesale energy cost (opt-in)

Step 3: Modify prices per real-time, localized grid conditions (opt-in)

Step 4: Transition to bi-directional prices (buy & sell)

Step 5: Offer subscription option (average load shape & energy quantity)

Step 6: Introduce transactive features (ability to lock in price in advance)

<sup>6</sup> See, US Census Bureau, American Housing Survey, 2017: [https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s\\_areas=00006&s\\_year=2017&s\\_tablename=TABLE3&s\\_bygroup1=3&s\\_bygroup2=1&s\\_filtergroup1=1&s\\_filtergroup2=1](https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00006&s_year=2017&s_tablename=TABLE3&s_bygroup1=3&s_bygroup2=1&s_filtergroup1=1&s_filtergroup2=1)

and likely an even greater share during peak hours of 4pm to 9pm.<sup>7</sup> Furthermore, residential households have been shown to effectively contribute to grid flexibility in emergency situations. For example, last summer during system emergencies between August 13th and August 20th, OhmConnect customers reduced close to 1 GWh of electricity demand over multiple peak hours through a combination of enabling devices like smart thermostats and smart plugs and additional behavioral actions.

Furthermore, residential customers are well-positioned to provide grid flexibility due to the proliferation of affordable enabling devices which, when aggregated at scale, provide large quantities of controllable load. Affordable enabling devices include communicating thermostats (Google Nest's newest affordably-priced thermostat retails at \$129) and smart plugs (OhmConnect provides these in its online store for as little as \$10, and often free with promotions). These devices, in part due to their affordability, are becoming more and more popular: for example, based on third-party estimates and available market data, over one million of the 7.5 million California homes equipped with central A/C have smart thermostats already installed.<sup>8</sup> An ever-growing share of OhmConnect's customers are also connecting enabling devices, in part due to the higher earning potential. The use of an enabling device dramatically increases the controllable load potential of the customer, with OhmConnect reporting that "impacts among device owners being about 4.5x larger than non-device owners."<sup>9</sup>

These numbers represent just the tip of the iceberg of potential, given that not every home with a smart thermostat participates in demand response events, and not every customer enrolled in a DR program has yet installed an enabling device. As the Commission continues to develop incentives for residential customers to participate in demand flexibility, the need for these devices will grow exponentially.

The success of companies like Google Nest, OhmConnect, and others demonstrates the critical need to incorporate third parties in any demand flexibility solution. Third parties have shown tremendous ability to scale across millions of residential households. The 2018 Evaluation of the Demand Response Auction Mechanism ("DRAM Evaluation") reported that between 74% and 95% of customers participating with a third-party via the DRAM had *never participated in an IOU DR program before*.<sup>10</sup> These figures are now likely higher.

Third parties have further demonstrated their ability to equitably deploy devices and programs by focusing on disadvantaged communities. The same DRAM Evaluation reported that over 30% of DRAM customers were enrolled in CARE. Enrolling in these third-party programs

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<sup>7</sup> See "Annual Electric Power Industry Report, Form EIA-861 detailed data files", 2019: <https://www.eia.gov/electricity/data/eia861/>.

<sup>8</sup> Based on Park Associates estimates of 13% smart meter penetration in January 2018: <http://www.parksassociates.com/blog/article/pr-06142017#:~:text=New%20Parks%20Associates%20research%20shows,by%20the%20end%20of%202017>

<sup>9</sup> See Load Impact Evaluation for OhmConnect's DR Resource Final Report.

<sup>10</sup> See "2018 Evaluation of the Demand Response Auction Mechanism", available at <https://www.cpuc.ca.gov/General.aspx?id=7032>

provides opportunities for California ratepayers to earn meaningful compensation in exchange for providing demand flexibility. For example, OhmConnect reported that during the August 2020 heat wave it paid out over \$1 million to its customers.<sup>11</sup> And OhmConnect, along with other third parties, continues to enroll customers with enabling devices at scale, through initiatives such as OhmConnect’s “End California Blackouts” campaign, which seeks to give away one million free thermostats throughout the summer.

Given the scale of the untapped potential, we support the Energy Division’s desire to create much-needed demand flexibility through greater automation and innovative rate design. However, it is critical that any solution explicitly envisions a role for third parties and fosters the supporting infrastructure and regulatory environment in which third parties can operate. Specifically, the solution must incorporate enabling devices such as smart thermostats and be structured such that residential customers can easily and effectively participate through third-party providers.

## **2. The Commission should open a new proceeding immediately to build a centralized and cohesive record around these issues.**

We urge the Commission to explore the Energy Division proposal immediately in a new proceeding. There is an acute need to create actionable solutions that will prevent further grid emergency events, and as Commissioner Houck implied, the solution cannot be predicated solely on capacity buildout without any regard for demand flexibility. As detailed above, there are hundreds of thousands of California customers that are equipped *today* with the capability to provide demand flexibility, with the potential for millions more to be available in the coming months and years. Furthermore, the groundwork for the Energy Division proposal has already been laid at the California Energy Commission (CEC) and at the Commission itself.

As presented by Karen Herter during the Workshop, the CEC has been engaged in a proceeding to modify the Title 20 Load Management Standards in a way that would encourage customer load shift in response to a real-time price signal. Several of the proposals presented by the Energy Division are also reflected in CEC Staff recommendations and will likely be considered in a formal rulemaking this year. Google Nest and OhmConnect see benefit to the two proceedings developing in parallel in order to maximize attention to the issues and optimize stakeholder time.

Moreover, real-time pricing (RTP) tariffs are already being considered by the CPUC as part of Phase II of SDG&E and PG&E’s General Rate Case. In fact, the Proposed Decision issued just a few days ago in SDG&E’s rate case proposes the development of an RTP pilot for all customer classes.<sup>12</sup> Importantly, the PD agrees that third parties are well-equipped to help customers on RTP rates manage their energy use—in part because “third party development

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<sup>11</sup> See <https://www.ohmconnect.com/thought-leadership/ohmconnects-response-to-california-energy-grid-challenges-august-2020>.

<sup>12</sup> See June 9, 2021 Proposed Decision (PD) in A.19-03-002, at pp. 48-66.

costs for these services would not be passed through to rate payers”<sup>13</sup>—and instructs SDG&E to create a Working Group to, among other implementation details, “examine existing options for sharing information with third parties and recommend an approach for the pilot.”<sup>14</sup>

Although no decision has yet been issued in PG&E’s rate case—its timeline is several months behind that of SDG&E—an RTP option is explicitly within the scope of the proceeding and OhmConnect, together with the California Solar and Storage Association and Enel X, has submitted an RTP proposal for consideration.

Google Nest and OhmConnect appreciate that some of the topics put forward in Energy Division’s proposal are already being discussed in open proceedings; however, these conversations remain fragmented. To that end, we see great value in centralizing at least some of the conversations around innovative rate design options and supporting load automation. Moreover, while we understand and are supportive of the coordination efforts that must take place between the Commission and the CEC, we are also concerned at the length of time that has passed since the concept was first raised to the Commission. This delay, coupled with the 2020 grid reliability events, underscores the need for expedient action. The Commission should open a new rulemaking immediately with the goal of developing a mechanism, such as a dynamic rate, to “achieve widespread demand flexibility” that includes *all* California customers.

## Conclusion

Google Nest and OhmConnect are encouraged by the Energy Division proposal and are broadly supportive of creating additional pathways for California customers to provide demand flexibility through new programs and rate designs, and have those customers realize the value they are providing. We urge the Commission to act expediently on the proposal by opening a new proceeding immediately that will develop the UNIDE proposal more thoroughly, and for the Commission to direct that any final proposal must incorporate residential customers, particularly those with enabling devices, and an opportunity for third parties to serve as providers and implementers of the solution.

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<sup>13</sup> PD, at p. 59.

<sup>14</sup> PD, at p. 60.