June 30, 2023

VIA ELECTRONIC DELIVERY

California Energy Commission
Docket Unit, MS-4
Docket No. 22-DECARB-03
715 P Street
Sacramento, California 95814

Re: Docket No. 22-DECARB-03 – Equitable Building Decarbonization Program

Sense appreciates the opportunity to provide these comments on the *Equitable Building Decarbonization Program: Draft Guidelines*, pursuant to the *Notice of Staff Workshop on Draft Equitable Building Decarbonization Direct Install Program Guidelines* issued on May 3, 2023 in the above-referenced case. We hope that our comments, rooted in our experience creating and implementing advanced customer solutions, will support California's efforts to engage its most vulnerable customers in energy reduction and building electrification, and ultimately to achieve the State's goal of a just and equitable transition to carbon neutrality by 2045.

Sincerely,

Brandon Dyer

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Introduction & Perspective

Sense's mission is to reduce global carbon emissions by making homes smart and efficient. We make it easier for people to take care of their homes and to actively participate in a cleaner, more resilient future. Founded in 2013, Sense uses innovative machine learning to analyze energy usage in the home, provide real-time insights on device behavior and enable a wide range of customer applications and potential grid services. With manufacturer partnerships, Sense offers software and consumer applications that can be embedded in the next generation of advanced metering deployments and/or smart electrical panels. Sense also offers a hardware retrofit solution that can be embedded into existing electrical panels. Across all solutions, Sense focuses on delivering enhanced customer value and engagement in the clean energy future.

General Comments

Real-time home intelligence software is critical to customer empowerment, especially in supporting whole-home electrification, and should be prioritized for income-eligible, disadvantaged, and tribal communities.

Next-generation smart meters and smart electrical panels play an important role in energy efficiency and demand flexibility programs by serving as a platform for real-time energy intelligence at the grid edge. Grid-edge software, like Sense, provides critical computational capabilities running on the metering or panel platform that can help utilities deliver a truly real-time experience that engages customers and empowers them to make changes that impact how and when they consume energy. Not only does this help consumers to lower their bills, it's also an important part of reducing climate impacts and achieving the objectives of the Equitable Building Decarbonization Program.

Edge intelligence allows for a significantly high-resolution view of the composition of loads, load profiles, usage habits and preferences within a customer's home. Most notably, these capabilities support a real-time view of a customer's energy bill when paired with utility tariff information — and can support a bill projection based on usage trends, helping customers budget ahead of receiving their utility bill. This is especially important for middle- and lower-income communities, whose energy costs represent a much higher percentage of their overall spending compared to a higher income community. Technology like the Sense mobile app, which allows consumers to monitor their energy use through grid-edge platforms and make informed energy decisions, is critical for individuals who

have to make every dollar count. Energy equity requires that members of all communities have equal access to their own energy data.[1]

Such capabilities can also be leveraged by utilities to design offerings and create messaging for specific populations, including geo-targeting disadvantaged communities. Real-time access for customers to their data is also essential to support delivering special rate designs, especially those which require dynamic management of behind-the-meter resources or time-of-day usage considerations, which might benefit disadvantaged communities the most.

Response to Chapter 2, Section I, Eligible Measures (pages 12-15)

The Equitable Building Decarbonization Direct Install Program should provide funding for smart electrical panel installation in homes without the latest generation of smart meters.

Real-time energy intelligence is already being used by residential customers across the country via the Sense monitor, a hardware retrofit solution for homes. And while modern metering solutions are enabling utilities to scale this intelligence through software only, not all homes are individually metered or customers might not live in utility jurisdictions that offer the latest generation of smart meters. Smart panel integrations are enabling real-time energy intelligence capabilities across the economic spectrum and serve as an alternative grid-edge platform for those who stand to benefit the most, and can enhance other regulated programs promoting energy equity. As noted by San Diego Gas & Electric Company,[2] smart panels facilitate the integration of new electric appliances while also enabling device control to allow customers to participate in grid flexibility programs. Therefore, the Equitable Building Decarbonization Program should include incentives for smart electrical panels and should consider incentives for home energy monitors, such as Sense's hardware solution, for homes where a panel upgrade is not necessary.

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[1] Read more about how consumer data can make the energy transition equitable for all on the Sense Utilities Blog:

https://utilities.sense.com/how-consumer-data-can-make-the-energy-transition-equitable-for-all/

[2] See page A-7 of *SDG&E Response to Request for Information on the Equitable Building Decarbonization Program (Docket No. 22-DECARB-03)*, filed January 20, 2023.

Tenants of multifamily buildings should be individually metered in order to provide personalized usage information and individual load control.

Data and software at the grid edge are foundational to shifting how households use energy and enabling a flexible, electrified grid. A real-time experience is critical to enable customers to take meaningful actions to shift and reduce their energy use, like using Google Maps to avoid traffic. These capabilities rely on the home having one of either the latest generation of smart meter, the latest generation of smart electrical panel, or a retrofit home monitor to provide the data sampling rate necessary for real-time insights and analysis. Customers in master-metered buildings, therefore, would not have access to their individual energy consumption data unless they have a smart electrical panel or retrofit monitor in their unit.

Investment in the latest generation of smart meters, meaning those with grid-edge software embedded in the meter, should be maximized and leveraged by energy equity and building electrification programs. Having grid-edge software already on the meter requires no additional hardware or cost to customers, and the Sense app, for example, allows every individually-metered residential customer to have free home energy monitoring available to view on their mobile phone. In some jurisdictions, the electric utility may already have a plan to upgrade its metering infrastructure to the latest generation of smart meters (sometimes referred to as AMI 2.0). In such cases, the Equitable Building Decarbonization Program should provide incentives to sub-meter individual residential units in multifamily buildings. This does not mean that tenants should be responsible for individual utility bills where they are not already billed individually, but instead that the meter can serve as a means of delivering home intelligence that enables individual tenants to view personalized data. The ability to provide real-time feedback to individual tenants about their energy usage, especially those who qualify as low- or moderate-income, is critical to increased engagement in the clean energy future.

<u>Response to Chapter 4, Section B, Metrics and Data Collection (pages 18-21)</u>

Data collection through grid-edge software can simplify the tracking of metrics needed for reporting on this program.

Grid-edge platforms collect the data necessary to easily track and report against many of the metrics suggested for the Equitable Building Decarbonization Program.[3]

As noted above, Sense's real-time app experience tracks total and device-level usage and connects to utility rate information to calculate a customer's total bill. Data is therefore collected and can be used to report on total bill impacts of weatherization on reducing total consumption or from the installation of new electric equipment, for example. It can also give insights into what specific equipment might be a priority to replace based on its relative consumption. The Sense app also applies a peer-normative approach similar to home energy reports by showing customers a comparison of their energy usage against similar homes, and goes further by allowing customers to see their current total energy and device-level usage, usage by time and rate period, and carbon intensity. They can set alerts for energy goals, get device notifications, and connect to smart devices - supporting integration with other behind-the-meter devices. As utilities emphasize electrification and holistic solutions to saving customers energy, a metric tied to customer engagement in energy savings programs and/or a reduction in energy burden should also be developed and tracked.

Supporting grid reliability, geo-targeted energy efficiency and grid flexibility programs can address more isolated system needs, which can be factored into peak reduction metrics. High-resolution, waveform data at the grid edge also enables geolocation of power quality issues and voltage anomalies in real-time. This can be especially important as homes electrify in giving utilities information on the distribution system's ability to support increased electric loads. It can also support safety in ensuring that any power quality issues are communicated to the utility early to avoid serious damage to the home, including mitigating the risk of fires.

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[3] See *Equitable Building Decarbonization Direct Install Program: Draft Guidelines*, *Table 6: Primary Goals and Metrics*, and *Table 7: Secondary Goals and Metrics.*