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Comments 2024 California Building Energy Action Plan - Enervee

Additional submitted attachment is included below.

2024 California Building Energy Action Plan
Enervee Comments
Docket: 23-DECARB-03
March 26, 2024

Enervee is a climate technology company headquartered in California, serving households across the country. Our online marketplaces eliminate barriers to energy-efficient one-off appliance purchases made at retail by both homeowners and renters, across all housing types. Enervee's partnerships tap into natural replacement cycles and relies primarily on Eco Financing to eliminate financial barriers, but our software platform also enables integration of available point-of-sale (POS) instant incentives, or financing incentives, such as interest rate buy-downs. As a result of effectively overcoming financial barriers, the program is demonstrating its ability to reach traditionally underserved customer segments to drive equitable outcomes[1].

Enervee's online marketplaces have been called out in prior California building action plans (Appendix A provides relevant excerpts for ease of reference):

- 2019 California Energy Efficiency Action Plan
- 2016 California Existing Buildings Energy Efficiency Action Plan

Since these prior recommendations, Enervee has added significant new functionality and expanded our marketplace, now allowing us to eliminate financial barriers faced by underserved consumer segments statewide. The most significant innovation is that shoppers can pay for their energy efficient purchases with affordable Eco Financing, a loan product enrolled in the GoGreen Home Energy Financing Program. Most of our comments therefore focus on the financing aspect, a focus topic for the 2024 report.

Before diving into the priority topics the CEC is seeking input on, however, we would like to take the opportunity to emphasize the importance of addressing appliances and other plug loads. According to the 2021 California Building Decarbonization Assessment, plug-in devices are the largest category of energy consumption in California's 9.2 million single-family homes, responsible for 44% of energy use, followed by space heating (27%) and water heating (25%)[2]. These end-uses, which are bought at retail by individuals on an ongoing basis, will make the greatest contribution to climate mitigation in the near term and will also contribute to equitable outcomes, offsetting electric load growth associated with fuel substitution and keeping rates and bills as affordable as possible. The 2021 Low-Income Potential & Goals

[1] A major report on the NY Marketplace with integrated Eco Financing will soon be published by the State of New York (pre-print version available here), and an independent evaluation of the GoGreen Home program, including GoGreen microloans offered under the Eco Financing name, is also forthcoming.
[2] In the 4.5 million multi-family units, plug loads are a close second (42% of energy use) to water heating (44%).

Study data show that 57% of cost-effective energy efficiency potential was tied to appliances and other plug loads, and according to the White House: "...the priority in this decade is to rapidly improve energy efficiency and increase the sales share of clean and efficient electric appliances—including heat pumps for space conditioning, heat pump water heaters, electric and induction stoves, and electric clothes dryers—while also improving the affordability of energy and the equitable access to efficient appliances"[3].

For these reasons, we urge the CEC to ensure that energy efficiency is treated as an integral and essential part of building decarbonization efforts, complementing electrification. With the extremely high electricity rates that customers already face, electric energy efficiency is an important tool to reduce the impact of increased electricity demand due to fuel substitution. This will be important for the design of Equitable Building Decarbonization statewide incentives. There are currently no effective incentive programs to empower consumers to buy efficient appliances on their own at retail, because utility rebates at levels that would be cost-effective are too small to overcome financial barriers. EBD can fill this gap, most cost-efficiently by supporting financing.

Secondly, we take issue with findings that suggest limited potential for residential energy efficiency and high marginal abatement costs for electrification of appliances, given the availability of federal funding and new, cost-efficient program designs, such as financing (addressed below). Financing is proving capable of eliminating financial barriers for underserved consumers that rebates have not and supports lasting market transformation. Furthermore, inclusive financing programs do not have to rely fully on grant funding, but can manage risk using other financing instruments like provision of low or zero-cost capital, which is paid back (with interest), making every grant dollar go further with a more targeted and thoughtful approach.

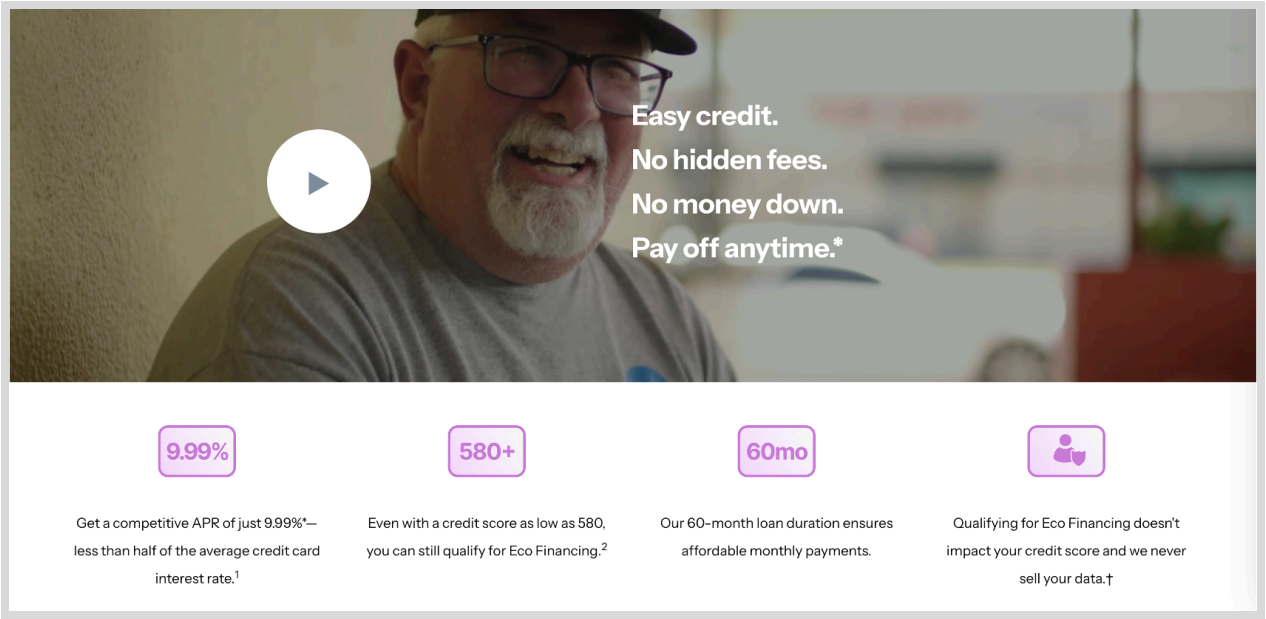
Here we offer some thoughts and information on a number of topics highlighted for the 2024 California Building Energy Action Plan:

Residential financing

Inclusive financing is a critical tool to ensure that disadvantaged communities don't get left behind in the clean energy transition. Enervee piloted GoGreen Home-backed Eco Financing with SoCalGas in 2021/22 and relaunched it with a new private capital provider in April 2023. Eco Financing is a term loan product offered as a payment method in the context of online retail purchases that overcomes financial barriers by breaking down lump sum appliance costs into affordable monthly payments (see terms on image on next page).

We now have about a year of Eco Financing data for the statewide CA Marketplace, the SoCalGas Marketplace and the statewide NY Marketplace.

[3] The Long-Term Strategy of the United States: Pathways to Net Zero Greenhouse Gas Emissions by 2050



The benefits of this innovative and scalable financing model have been called out in several recent reports, including:

- NY Marketplace Innovative Market Strategies Project – Final Report (2024)[4]. This 60-page report details a statewide Eco Financing program pilot supported by the State of New York and includes a wealth of data from purchase transactions and participant surveys to help the CEC answer questions about topics including: 1) participation by income, racial/ethnic heritage, DAC status, credit score; 2) the interplay between financing and rebates; and 3) the effectiveness of loan loss reserve program design. Some of the key equity outcomes included:
    - 51% of Enervee Eco Financing loans went to people in disadvantaged communities (against a State average of 35% DAC)
    - 84% of Enervee Eco Financing loans went to credit-challenged borrowers
    - 60% of Enervee Eco Financing borrowers are ethnic/racial minorities (against a State average of 31%)
    - Households earning <$50,000 paid for 69% of purchases with Enervee Eco Financing

  The report is public and we are happy to share Enervee's insights on financing instruments gained from this program.

- Toward More Equitable Energy Efficiency Programs for Underserved Households (2023). This report by ACEEE reviewed barriers that face underserved households and identified emerging program approaches that program administrators can use to help overcome them, including financing and point-of-purchase incentives. One of the report's recommendations was to provide innovative, affordable financing: "Micro-

[4] Report download here: https://www.enervee.com/resources/ny-marketplace-project

financing and other innovative financing tools support broader engagement in programs by enabling LMI customers and others with lower credit scores to pay for efficient products with affordable monthly payments. A promising example is the Eco Financing lending program delivered through e-commerce platforms in cooperation with NYSERDA, SoCalGas, and SCE; this program lets consumers pay low fixed monthly payments for efficient products."

- The Future of California Consumer Energy Finance: Strategies to Improve Program Performance and Accelerate Building Decarbonization (2023). This report by Berkeley Law and the Energy Institute at Hass began with the premise that: "There are simply not sufficient funds to provide grants and direct-install support for all Californians who need them". It went on to point out that: "While many lower- and moderate-income residents lack the financial and time resources to undertake comprehensive home retrofits, microloan marketplace programs offer a way to finance single appliance purchases that can increase household efficiency and electrification…By mirroring a traditional consumer/retail experience while integrating with state decarbonization initiatives, programs like Enervee's can increase lower- and moderate-income customers' access to improvements and to financing."

- Energy Efficiency Residential Pulse Check Study (2023). This study was conducted on behalf of San Diego Gas & Electric, Pacific Gas & Electric and Southern California Edison by Opinion Dynamics to fill gaps in existing knowledge about residential customers to assist program planners and third-party implementers to develop more effective residential offerings for customers. It called out that: "The incremental cost of efficient products and the lack of access to (affordable) capital are both common barriers among residential customers." The report recommended bundling multiple funding/incentive sources, incorporating the recent influx of federal and state funding for energy efficiency upgrades, as well as financing, to mitigate upfront cost barriers for customers. According to the study: "…the Enervee Marketplace taps into natural replacement cycles and eliminates barriers to energy-efficient one-off appliance purchases made at retail by both homeowners and renters. Enervee's program relies primarily on Eco Financing to eliminate financial barriers but integrates point-of-sale instant heat pump water heater incentives provided by the TECH/SGIP programs. As a result, the program is demonstrating its ability to reach underserved customer segments, as evidenced by GoGreen Home reporting."

In addition, Opinion Dynamics is just completing an evaluation of the GoGreen Home program, with a public draft expected next month. The evaluation will cover both standard home upgrade lending by credit unions and microloan lending via online marketplaces operated by Enervee. Enervee has extensive Eco Financing transaction data and participant survey results for California.

The CEC also asked for inputs on the effectiveness of various financing support instruments. One critical insight that we have gained is that they are to a certain extent fungible / complementary, depending on the funding source / cost of capital and the risk profile of the target audience. The same favorable loan terms for higher-risk borrowers can be offered if very low-cost capital is available, or if low-cost capital is blended with private capital and credit enhancements are made available or without access to low-cost capital, but with greater credit enhancements. It is important for the CEC to consider grants in the form of credit enhancements (interest rate buy-down, loan loss reserve, loan loss insurance) as one tool to complement access to low-cost capital that may be available from other sources (e.g., National Clean Investment Fund). We urge the CEC consider the following recommendations:

- Provide grant funds for credit enhancements for programs that are truly statewide, including loans to those without IOU service, so lenders can serve everyone in the state, rather than just IOU customers. The status quo causes fragmentation, complexity and leaves some Californians behind.
- Use grant funds to support financing strategically, with a view to achieving sustained equity and climate benefits with the available 1-time investments. This requires working with financing providers and facilitating non-grant contributions from state entities that can provide other relevant instruments, such as access to low-cost lending capital, to collectively overcome barriers that make it challenging to provide affordable financing for target borrowers at scale, taking into account lessons learned with existing programs. One example would be to make use of credit enhancement dollars to encourage people to enroll in autopay, with a view to facilitating on-time payment and positive impacts on credit scores.
- Provide marketing dollars and ensure effective utility marketing to raise awareness of GoGreen Home microloans. A large marketing budget was made available for the GoGreen Financing programs overall, but there have been no dedicated efforts to inform consumers about the availability of GoGreen microloans for 1-off retail purchases, despite the availability of a suitable landing page for such campaigns[5]. Also integrate this information into the CEC's Building & Clean Energy Resource Hub.
- Enable the retail sector to be a channel for IRA point-of-sale rebates, which makes it possible for the private sector to make both rebates and financing available in real-time at the point-of-sale, via any manufacturer or retailer, online or in-store. There is very little that the CEC would need to do to enable the retail point-of-sale HEAR rebate channel, other than authorize real-time verification of eligibility (based on procedures compliant with DOE workflows and guidance) and submission of rebate requests directly via the Department of Energy API.

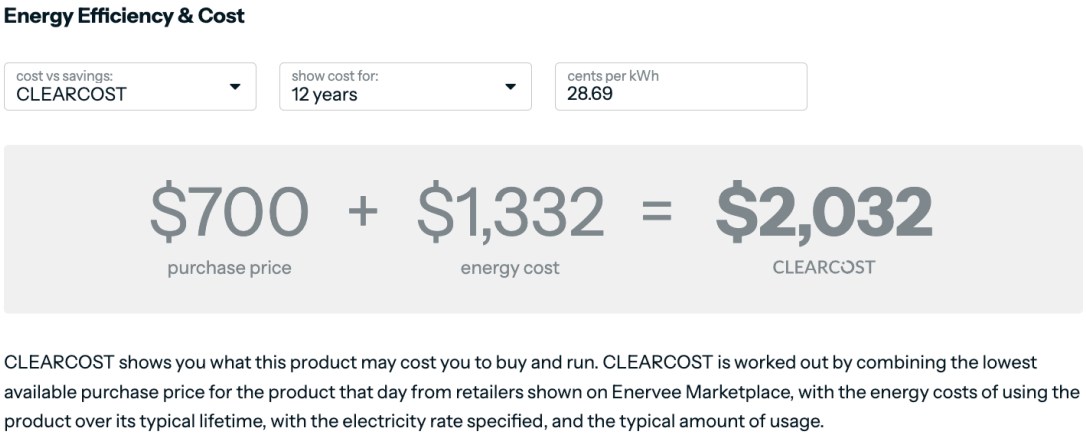
Further recommendations to benefit underserved consumer segments, beyond financing, are listed in the section on "Decarbonizing hard to reach communities" below.

[5] https://www.gogreenfinancing.com/energy-efficiency-home-loans-california/small-projects/

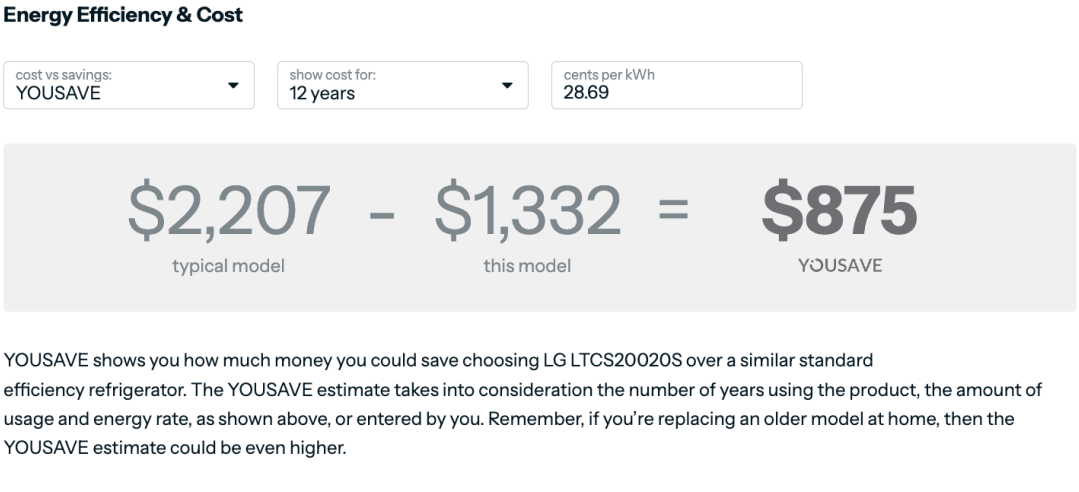
Bill impact estimation for consumers

Enervee's statewide marketplace provides consumers with the following customizable tools, so they can take into account the bill impacts of different product choices in real time, without having to do the math themselves:

- CLEARCOST. Personalized total cost of ownership estimates for every new product available for purchase and ability to sort products by this metric. Both the time period considered and the energy cost per kilowatt-hour can be further customized for the consumer's specific scenario.



- YOUSAVE. Personalized bill savings estimates for each new product available for purchase, relative to a baseline new product model. Note that this approach underestimates likely bill savings when an existing product is being replaced, because most people will be replacing older models that use more energy. We have considered building a means for consumers to share information about their existing appliances, but this is not currently prioritized in our product roadmap.



Our own published research has shown that this type of information is particularly salient and impactful for lower-income consumers, who need to pay greater attention to expenses[6].

Decarbonizing hard to reach communities

Above, we mentioned the importance of pairging energy efficiency with electrification to keep rates and electricity bills as low as possible, as electrification advances. We also called out that the greatest energy efficiency potential for low-income Californians lies with appliances and other plug load end-uses. It is important to note that most of these devices are purchased at retail by individual consumers on a 1-off basis, as existing appliances reach the end of their useful lives. While many believe this is not the case for renters, our program data paint a more nuanced picture[7].

Other than the GoGreen microloan program described above, not a single major clean energy program in California is designed to ensure that every appliance purchase made by underserved communities is as efficient as possible. Utility rebate programs do not overcome the financial barriers faced by lower-income and credit-challenged consumers and have essentially been phased out for electric end-uses in California; the ESA program is not designed to provide support during the retail shopping journey (which is increasingly digital and via smart phone) and has a focus on the largest energy consumers; and (tariffed) on-bill financing programs typically don't support plug load purchases, unless bundled with other building energy upgrades, and are not readily available when appliances need to be replaced in a hurry, nor integrated into the retail shopping journey.

This all underscores the exciting opportunity to advance Efficient Shopping for All with Eco Financing of retail purchases as a core strategy. There are several things the State can do to augment our existing Eco Financing program to better meet the needs of underserved communities, in addition to the items already mentioned above under the section on financing:

- The cap on IOU investment in Equity and Market Support energy efficiency programs should be removed or increased significantly. Currently, the Investor-Owned Utilities (IOUs) are allowed to spend up to 30% of their ratepayer-funded energy efficiency budgets on "equity" and "market support programs" (the rest on "resource" programs). However, most of them have already maxed out this cap, not the least because the costs of all statewide programs are funded under this 30% allocation. This is preventing companies like Enervee (and all of our market partners) from implementing programs designed to maximize benefits for HTR/DAC households. Alternatively, the cost-effectiveness framework for resource programs could be revamped to better reflect equity goals and refrain from penalizing programs that are successful at driving private investment into clean and efficient product purchases.

[6] Making efficiency visible – Insights on effective nudging across decision styles and choice models
[7] Renter (Mis)perceptions

- Provide grants to buy down interest rates and to cover the incremental cost of energy efficient appliances purchased on California marketplaces, so priority consumer segments don't end up spending more than they typically would for an entry-level model, even though Eco Financing may allow them to do so. This approach is much more cost-efficient and would be available to many more people in need than our existing free, direct-install program.
- Leverage the statewide California marketplace as a channel for the LMI point-of-sale appliance rebates funded by the federal Inflation Reduction Act. This would allow HTR consumers to take advantage of large rebates at the point-of-sale, while also having the option of paying for any remaining cost with an Eco Financing loan.
- Provide grant funds to cover haul-away/recycling costs for cooling appliances purchased by HTR consumers to avoid refrigerant and foam blowing agent emissions due to improper end-of-life appliance disposal (more on this below).
- Provide grant funds to fund heavily-discounted smart thermostats for HTR/DAC communities and encourage DR pre-enrollment at the point-of-sale (also see section below on load flexibility).
- Ensure that residential market transformation initiatives being administered by CalMTA benefit HTR communities, perhaps making additional grant funds available to this end, as needed.
- Ensure coordinated and effective cross-promotion of financing and low-income programs, recognizing that low-income programs do not meet all of the needs of income-qualified consumers and taking advantage of the fact that the statewide online marketplace engages large numbers of consumers and can increase awareness of ESA.

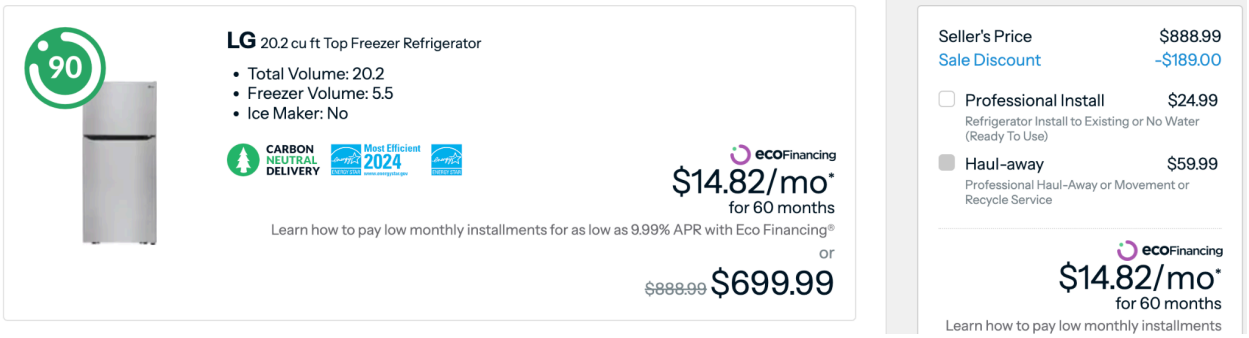
Grant funding should primarily be used to benefit HTR/DAC and, we would add, income-constrained households with poor credit who lack access to capital, augmenting sources of low-cost capital anticipated to be made available via the California green bank. We previously outlined our needs for California green bank support in response to an RFI issued by iBank and CAEATFA. It will be important for the State of California to ensure seamless support across agencies and support instruments to achieve the intended outcomes for HTR/DAC.

Advancing load flexibility

The best way to enroll smart thermostats and other residential flexible load devices is to incentivize enrollment at the point of purchase. Outside of California – working closely with our manufacturer, DERMS and utility partners – Enervee has achieved device pre-enrollment rates consistently over 95%, despite the programs being opt-in. We are hoping to launch a similar program with at least one California IOU in 2024, but we have faced barriers to building flexible load / VPP capacity in California and hope such issues can be overcome on a statewide basis.

Refrigerant use, recovery and recycling

In addition to work on standards to phase out high-GWP refrigerants and foam blowing agents, the State should subsidize the cost of haul-away and professional recycling during the online purchase process to replace old cooling appliances, at least for those in LMI census tracts and located in disadvantaged communities. This is something that Enervee piloted with the State of New York, and Enervee's California statewide marketplace already features the functionality to allow consumers to opt in to have their old refrigerators and freezers recycled.



Without any recycling incentives, 22% of customers who purchased refrigerators and freezers on the California Marketplace over the past year have voluntarily paid to have their cooling appliance hauled away and professionally recycled. At 29%, the opt-in recycling rate was higher for credit card purchases, but 91% of all fridge/freezer purchases were financed, so there is significant potential to incentivize recycling.

We do not currently have a recycling partner for portable and room air conditioners, so this is an area for future improvement when developing market transformation plans to increase the share of super-efficient portable and window heat pumps.

Thank you for the opportunity to share our thoughts on some of the important topics to be addressed in the 2024 California Building Energy Action Plan. Enervee looks forward to working with the State of California and our many and varied partners to rapidly advance an equitable clean energy transition.

Appendix A – Prior References to Online Marketplaces

2019 California Energy Efficiency Action Plan (12/20/2019)
https://efiling.energy.ca.gov/GetDocument.aspx?tn=231261&DocumentContentId=62916

Goal 1: Double Energy Efficiency Savings by 2030

Single Family Sector
Opportunities in the Single-Family Market (p. 24)

Plug Loads: Plug loads are appliances or measures that plug into a building. While no single plug load has major savings potential, the aggregated amount of energy consumed by plug loads is large. Ongoing research into miscellaneous electrical loads in homes is uncovering the scale of potential savings. Marketplaces that provide consumers with energy efficiency scores for appliances, most prominently those supported by the IOUs, have a track record of success. Continuous support and expansion of such programs will result in more achievable savings from the growing plug-load demand.

Multifamily Sector
Opportunities in the Multifamily Market (p. 29)

Plug Loads: As in single-family homes, plug loads are a major source of energy consumption in multifamily units. Since end uses like space and water heating may be maintained by owners rather than tenants, most in-unit energy savings that can be controlled by tenants are plug loads. Given the varied income levels of tenants, it is important that affordable and efficient products are available. Online marketplaces are an effective tool at making energy efficient products readily available and easily discounted.

Goal 2: Low-Income and Disadvantaged Community Energy Equity

Component 1: Low Income and Disadvantaged Community Barriers
Plug-Load Marketplaces (p. 73)

In 2017, the CPUC directed IOUs to create or expand online marketplaces for appliances and other plug loads, or do both, in response to Assembly Bill 793 (Quirk, Chapter 589, Statutes of 2015). The Barriers Study recommended that low-income households receive information and options for purchasing appliances or devices that draw electricity. Now, all IOUs offer marketplaces that collect incentives and educate customers on the most efficient plug loads. These marketplaces can continue to expand and be a resource for more than IOU program activities. Collaboration between utilities and government agencies could add more incentives and information for products that benefit low-income households. The marketplaces could provide a direct-to-consumer channel for incentives, which would enhance consumer choice and flexibility, improve program effectiveness and lower costs.

The CEC continuously approves new appliances for sale in the state, and these marketplaces are updated to reflect that.

2016 California Existing Buildings Energy Efficiency Action Plan (12/2016)
https://efiling.energy.ca.gov/getdocument.aspx?tn=214801

Strategy 1.6 Plug-Load Efficiency

Market Transformation Efforts

Energy-Smart Product Marketplaces (p. 25)

Some California utilities have created online appliance and consumer electronics marketplaces where their customers can review products, learn about potential energy savings, and apply for rebates (Figure 4). Partnering with Enervee, a software-as-a-service energy efficiency information provider, these utilities are providing company-branded marketplaces with multiple potential benefits. (See sidebar.) There is also the potential for policy makers to access the consumer product market data behind these online stores, to better track the diversity of products and the associated efficiency improvements over time.

Utility-Branded Marketplaces

- Eliminate barriers to energy-smart shopping
- Simplify shopping experiences
- Establish ongoing customer relationships

Key Features

- Full market coverage
- State-of-the-art comparison shopping
- Energy score making efficiency visible
- Personalized energy bill savings
- Ongoing digital engagement
- Integrated incentives

[image of category page]

Figure 4. Utility-Branded Marketplace