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**Assuring IRA Home Efficiency Rebates Support Market Transformation and Catalyze Achievement of Carbon Neutrality in California**

Comments submitted as a document attachment.

*Additional submitted attachment is included below.*



**JANUARY 26, 2024**

**RE: REQUEST FOR INFORMATION INFLATION REDUCTION ACT HOME EFFICIENCY REBATE PROGRAM  
(HOMES) DOCKET NO. 23-DECARB-01**

California Energy Commission (CEC) Docket Unit  
MS-4  
Docket No. 23-DECARB-01  
715 P Street  
Sacramento, CA 95814

**SUBJECT: ASSURING IRA HOME EFFICIENCY REBATES SUPPORT MARKET TRANSFORMATION AND  
CATALYZE ACHIEVEMENT OF CARBON NEUTRALITY IN CALIFORNIA**

Dear Miriam Joffe-Block, CEC Commissioners, and staff,

Earth Advantage applauds the approach California has begun for deploying the Inflation Reduction Act Home Efficiency Rebates (HOMES), including release of this Request for Information (RFI). Earth Advantage endorses CEC's intent to combine the IRA Home Efficiency Rebate funds with the Equitable Building Decarbonization Direct Install Program (EBD). This deployment mechanism will support economies of scale, minimize market confusion for both workers and households, and enable California to deploy projects of higher value to individual households.

As a non-profit organization focused on advancing a more informed and humane residential real estate market, Earth Advantage focuses these comments on how nearly \$292 million in federal home energy rebate funds may be best used as a catalyst for wider market change that carries benefits for all California residents. Earth Advantage's staff of around 50 home energy efficiency and decarbonization professionals bring a wealth of expertise across building science, workforce, market, and climate justice topics.

To maximize program impact, Earth Advantage recommends CEC use Home Efficiency Rebate funds to contribute to the fund stack available on a per-unit basis to households served through EBD. The EBD program guidelines have set impressive requirements for including heat pump conversion, establishing prevailing wage, and protecting low-income households from paying high costs, all of which Earth Advantage applauds as mechanisms to support a clean energy economy with protected consumers and workers. Earth Advantage endorses the comments made

by the Bay Area Residential Decarbonization High Road<sup>SM</sup> Partnership in support of workforce standards and ease of customer use.

We express concern that the cost caps for EBD funds of \$6k per single-family or multi-family unit and \$7.2k per manufactured housing unit may prove to be a barrier for impactful projects to materialize. Many homes, particularly low-income homes in need of fuel conversion, will need decarbonization work completed that carries a market-rate cost closer to \$30-\$50k per household ([LBNL 2023](#)). Home Efficiency Rebate funds can be a puzzle piece that completes the fund stack for households where \$6,000 is simply too little funding to cover costs associated with home electrification, energy efficiency, and remediation. Because of restrictions on use of federal funds, Earth Advantage recommends using Home Efficiency Rebates to cover 100% of costs in low-income households related to envelope efficiency measures, and then using EBD funds for electrification and health and safety upgrades.

Rather than attempting to spread money too thinly, Earth Advantage recommends CEC focus on defining a strong sense of *the value* the program should deliver, and then demonstrating this value effectively. While the IRA Home Energy Rebates and EBD funds are significant, if all these funds were spread evenly across California's 13.3 million households ([US Census](#)), there would be just under \$96 available per household. If all these funds were provided evenly to the 13% of Californians in poverty (assuming the same rate of households in poverty), then there would be about \$737 per household. There is no way for these funds alone to meet even close to all the need for home energy upgrades in California.

Rather, to meet California's energy and climate goals, these government funds should be used to pay for meaningful levels of improvement for served housing and catalyze continued funding. This is possible by systematically showing the value of home energy upgrades to homeowners, financiers, and regulators so they will continue to pay for the installation of these technologies and employment of these workers even after funds have been depleted. By using these funds to deliver substantive value to recipients – homes that transform the at-home living experience, reduce energy bills and healthcare costs, and put people to work in good jobs – and showcasing that value, California can spur market demand for home energy upgrades as a merchandisable, tangible product. In contrast, projects that are too small to make a noticeable difference in the living experience of recipient households will be insufficiently desirable to pull in continued market investment.

In alignment with achieving this end, Earth Advantage recommends the following:

1. Complete the DOE required Market Transformation Plan alongside the Home Efficiency Rebates application to assure market transformation efforts are embedded into the rebates program design.
2. For every home served with Home Efficiency Rebates and EBD funds (whether together or separate), deliver a CEC-approved home energy label that serves the needs of both CEC and CPUC's ongoing home energy labeling efforts.
3. Even if full programmatic integration is not possible between the Home Efficiency Rebates and EBD, wherever possible align wage standards, workforce credentialing, quality assurance systems, and technical standards requirements between programs to ease implementation and create consistency for contractors and other actors.
4. Dedicate programmatic funds (if possible, beyond administrative funds) to pay existing community-based organizations for engagement, recruitment, and support with recipient households.

To accomplish these ends, Earth Advantage strongly recommends CEC leverage recommendations resources published by US DOE – including but not limited to the recommendations webpages on supporting the clean energy economy and the workforce, as well as the published sample application. Across these existing documents and resources, DOE recommends use of Home Energy Score as a component of any home energy label issued with these programs, which Earth Advantage also endorses given its applicability to national market transformation efforts and current use in the CPUC's funded Home Energy Score program. Home energy labels built off DOE's Home Energy Score can meet the Home Efficiency Rebates requirement for a third-party verification and provide particular benefit to low-income households that may otherwise struggle to retain or build value for their home at a future time of sale.

Transforming the market does not necessitate delivering valuable and finite government funds to higher income households. In fact, a key element of market transformation is supporting market growth, which is not achieved if these funds are merely subsidizing the price of installations that higher income households are already supporting. Instead, Earth Advantage recommends that as much as possible of these funds – well over the 50% requirement – are dedicated toward substantially helping the homes that need funds most and providing substantial support on a per-household basis. Earth Advantage recommends that CEC prioritize households with high energy burdens, using oil, propane, or electric resistance for heat, and with

residents that experience at-home respiratory distress that is potentially exacerbated by poor home energy performance.

Alongside these efforts, CEC should dedicate resources to making sure the benefits of these programs are known among households across the state, such that households with access to resources choose to invest in energy upgrades with the help of tax credits and low-interest financing. These efforts should include establishing a financing roundtable and providing access to aggregated home energy data to mortgage underwriters, who are interested in expanding green lending into single-family home upgrade markets.

CEC should consider how these funds can also catalyze policy actions, particularly if the funds can act as policy “carrots” that ease opposition to policy “sticks”. The following policy actions could roll out alongside funding expenditures and help each other be more successful:

- **Home energy labeling requirement in all home sale listings.** Currently, most homeowners, buyers, and renters have insufficient information about how their home uses energy and what factors contribute to poor energy performance, high energy costs, and high carbon emissions. A home energy labeling requirement would help educate consumers about these issues, help them protect themselves from high energy bills, and send more homeowners on a pathway toward decarbonization. Home energy labels can act as a roadmap for consumers that may not otherwise consider home energy upgrades and can serve as a mechanism to reduce customer acquisition costs for businesses and programs seeking to deploy these upgrades and government funds. A study from Lawrence Berkeley National Laboratory ([LBNL 2022](#)) found that for each one-point increase in a home's Home Energy Score was associated with a 0.5% increase in sales price and 5.5% reduction in odds of 30-day mortgage delinquency. Home energy labels also foster availability of financing for home energy upgrades, particularly through mortgage financing products where borrowers can complete upgrades based on a home's as-completed predicted value. Earth Advantage recommends CEC use the home energy label currently used in BayREN's Home Energy Score Rebate program, which CPUC has put on a track for a pilot statewide Home Energy Score California program.
- **Home Energy labeling requirement for all rental home listings.** An energy disclosure rating system on all rental units would empower renters to understand the cost of utilities when deciding where to live. This would incentivize landlords to take advantage of energy efficiency and

electrification programs and rebates to appear more attractive to prospective tenants, thus mitigating some influence of the split-incentive between landlords and renters on energy upgrade investments. In cases where tenants are income-qualified for EBD, these labels can serve as an impetus for landlords to pursue government funding to support rental property upgrades.

- **Expand California's rule for Active Solar Energy System Exclusion to include other home decarbonization features.** Effective since 2014, the California Board of Equalization allows for exclusion of active solar energy systems from calculated home values for property tax assessments. This allows homes to install active solar energy systems without risking resultant increases in property assessment taxes, which would act as a disincentive toward solar installation. Similarly, low-income homeowners should be protected from potential property assessment tax increases attributable to government-funded home energy upgrades, so Earth Advantage recommends CEC work with the Board of Equalization to establish similar exclusions for other decarbonization technologies.

To assure these funds deliver products of value such that they effectively pull more funding into this space, sufficient funding must be dedicated to program administration, communications and outreach, quality assurance, and valuation. Oftentimes, there is significant pressure on administrators to reduce the cost of doing business to such an extent that the quality of the work and value being delivered is hampered. This creates a negative vicious cycle of people not seeing the value to sufficiently continue large-scale investment. Earth Advantage recommends the following strategies as ways to assure real help is offered through these programs and real value is achieved for the homes that are served:

- **Fund community organizations to participate in this work as subcontracted partners to build credibility and gain efficiencies of existing systems.** This funding can make the difference for whether low-resourced organizations, businesses, and households can overcome barriers to participation at all. These groups can more flexibly offer various hand-holding services to households in need including direct outreach, language translation, and trusted guidance.
- **Set up programs to be as flexible as possible for recipient households on the front end, such as by accepting various forms of documentation for income verification.** Rather than slowing the process on the front end, require the program implementer engaging with the resident (e.g., the CBO)

to document their process clearly. Lists stating the array of forms or IDs someone may use to attest their income qualification should be exemplary rather than exhaustive. Explain clearly to recipients the risks of misrepresenting their income information (e.g., if attestation is found to be falsified, they must pay back the funding) and then perform quality review of the program's income verification as part of the overall program quality assurance.

- **Do not underestimate the costs that must be budgeted to convey program value.** Efforts for quality assurance, quality control, data collection and analysis, communications and outreach, and program evaluation all play a role in demonstrating that the work happening in the field is worthwhile. Strong quality assurance and quality control is necessary to assure recipients become advocates for the benefits of energy upgrades. These are also important efforts to allow the program to adjust or pivot mid-deployment if collected data provides unexpected or undesirable results. Mechanisms for automated data collection – including but not limited to API-linked home energy assessment tools and centralization of income verification information – can reduce burden on these processes for implementers.
- **Attract high-quality contractors by offering bridge loans to help contractors wait for the payment of rebate funds.** Without publicly supported bridge loans, attracting enough contractors that can wait for repayment may prove to be a challenge for scalable program deployment.

Thank you for your time and attention reviewing these comments and the others submitted in response to this RFI. Background information informing these comments and recommendations are included on the following pages.

Sincerely,

Madeline Salzman, Head of Strategic Partnerships

Earth Advantage



## BACKGROUND INFORMATION

**Home Energy Score.** Home Energy Score™ Programs are characterized by implementation of the [U.S. Department of Energy \(DOE\)'s Home Energy Score™](#) through DOE-approved partnerships. Designed as a “miles-per-gallon”-style rating system applicable to US housing, the Home Energy Scoring Tool can be utilized as a building block within standardized home energy assessments for various programs operated by state and local governments, nonprofit organizations, and private companies. Nationally, more than 100 businesses actively work to deliver Home Energy Scores through over 30 public and private partner organizations. As of the end of 2023, over 230,000 Home Energy Scores have been delivered nationwide.

The Home Energy Scoring Tool itself began development in 2010 and has undergone more than a decade of software updates and enhancements since its initial release in 2013. Based on approximately fifty data inputs regarding a home's features, as well as various input datasets and modeling assumptions, the Scoring Tool produces an output report with overall Score, modeled energy use metrics, and recommended home energy upgrades. Home Energy Score outputs include an 8760 hourly load calculation based on DOE's flagship building energy modeling software, EnergyPlus™. More information about how Home Energy Score works is available on [DOE's website](#).

Home Energy Score can help build value for home energy efficiency among homeowners, home buyers and renters, financiers, and regulators. For the homeowner, Home Energy Score provides home-specific data, including actionable recommendations for energy-saving improvements that can save money, improve thermal comfort, and increase resale value. For prospective home buyers and renters, Home Energy Score disclosure can help residents understand the potential energy costs of a property, which directly affects its affordability. As an asset rating, Home Energy Score provides information on what energy costs are expected of a home in a particular climate and with particular energy and construction features, independent from occupancy size or behavior. This provides energy cost estimates that control for occupant behaviors and allows for a more accurate comparison between homes.

For the lender, Home Energy Score can translate into real home value, which can extend equity for homeowners to borrow against to complete home energy

upgrades. Home Energy Score documentation of higher home performance can also be a [trusted source for underwriters](#) to sell mortgages on the secondary market for a green premium. The market for green mortgage backed securities (MBS) in the multifamily market is already [well established](#), and through Home Energy Score can be expanded to include existing single-family mortgages as well. Finally for the regulator, Home Energy Score can be used to understand the nature of energy burdens across the state, prioritize communities based on need, and quantify the needs in housing today to minimize energy burden, electrify, or decarbonize. For many households, regulator-enabled funding and financing resources is necessary to make home energy upgrades accessible, and identifying these households and their needs will help assure no one is left behind in decarbonization efforts.

***Home Energy Score in California.*** StopWaste, an Alameda County Government Agency, became a Home Energy Score partner to support the City of Berkeley's [Building Emissions Savings Ordinance \(BESO\)](#), which required Home Energy Scores be included in real estate transactions. For decades, Berkeley required prescriptive energy upgrades to buildings at time of sale and in 2015, the policy (formerly known as the Residential Energy Conservation Ordinance or RECO) was updated to focus on disclosure. In 2020, the BESO ordinance was updated to require Home Energy Scores in property sale listings to help increase the visibility of Home Energy Score data for prospective buyers before they have committed to a transaction. In 2021, the [City of Piedmont](#) passed a similar ordinance to the City of Berkeley requiring an energy audit at time of listing a home for sale, of which Home Energy Score is one compliance pathway.

Shortly after Berkeley passed the BESO, BayREN began offering [rebates](#) to homeowners seeking Home Energy Scores throughout the Bay Area to subsidize the cost as part of their Single Family program. In 2018, Home Energy Score, along with a suite of energy efficiency trainings for real estate professionals, was launched as its own offering, known as the BayREN Green Labeling program, with StopWaste as regional program lead. Home Energy Score rebates are still offered in the nine Bay Area counties. As of 2023, the rebate for a Home Energy Score is \$200. Rebates are not available in the city of Berkeley, where a Home Energy Score typically costs households about \$300.

Since its inception, the BayREN program has delivered over 21,000 Home Energy Scores, 7.8% of which have been delivered in Berkeley and Piedmont—cities which represent 1.9% of the Bay Area housing stock. To better align with BayREN program priorities, BayREN developed a voluntary electrification checklist for Assessors to use when gauging whether a home may be a good candidate for electrification

upgrades. As of 2023, Assessors who fill out the electrification checklist addendum are eligible for an additional \$50 rebate. The electrification checklist data and the DOE Home Energy Score data are both integrated into a resultant BayREN home energy label that includes the home's Home Energy Score, summary statistics including estimated energy costs and emissions, and recommendations for improvements that align with rebates available through BayREN's Single Family program.

On June 23, 2023, the California Public Utilities Commission (CPUC) [approved \\$4.3 billion](#) in utility energy efficiency portfolio spending for 2024 through 2027. Included in the [investment commitment](#) is \$9.9 million in funding for the Bay Area Regional Energy Network (BayREN) to launch a statewide Home Energy Score program ([Home Energy Score California](#)) in 2026. Given the CEC's recent action to begin a [rulemaking on a statewide home energy label](#), coordination between EBD, the Home Energy Rebates, and overall home energy labeling efforts is paramount.

**Market Transformation.** Market transformation is a long and continuous process with changes that can be observed through market indicators. Unlike other programmatic metrics that might be directly caused by program implementers, indicators of market transformation culminate from various market actors making slight changes to their workflows that support proliferation of decisions and investments that enable energy efficiency at scale. Market transformation efforts must recognize there is no one "market decider" that has direct control over the array of decisions that result in expanded market share of clean energy services. Instead, the culminating outcome of market transformation activities must appeal to the interests and needs of market actors - including homeowners, buyers, renters, lenders, and regulators - to justify their investment of time, money, and political capital.