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Earthjustice Comments on RFI

Additional submitted attachment is included below.

EARTHJUSTICE

February 23, 2024

California Energy Commission
Docket No. 23-HERS-02
715 P Street
Sacramento, CA 95814
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Re: Docket 23-HERS-02: Comments on the Whole-House Home Energy Rating and Labeling Pre-Rulemaking

Earthjustice appreciates the opportunity to submit these comments in response to the December 20, 2023 Request for Information ("RFI") regarding updates to the California Home Energy Rating System ("HERS") Program regulations.[1] Since the Whole House Home Energy Rating Program ("HERS Whole-House Program") was last updated in 2009, state policy has now recognized the climate and public health benefits of building electrification. In addition, electric appliances like heat pump space and water heating, which are three to five times more efficient than gas alternatives, are now readily available, with California setting a goal to deploy six million heat pumps by 2030. Accordingly, in its update to the HERS Whole-House Program, the California Energy Commission ("CEC" or "Commission") should ensure that the climate, efficiency and public health benefits of building electrification are properly valued and communicated. Regardless of whether a homeowner, rental property owner, renter, or seller pursues a home energy rating, the informational booklet on the program should enable an understanding of the climate, air quality, and public health impacts of gas appliances as compared to electric alternatives.[2] The HERS Whole-House Program booklet should also provide notice of prospective zero-nitrogen oxides ("NO_x") appliance regulations so potential future costs of compliance are understood. To achieve these critical objectives, the CEC should include the following changes in the HERS Whole-House Program update:

- Require Home Energy Reports to include efficient electric alternatives for any gas appliances or gas-burning features of the home;
- Update the Reference Home to track the baseline requirements of Title 24, with updates corresponding to every update of Title 24;

[1] CEC, Request for Information on Home Energy Rating and Labeling (Dec. 20, 2023), https://efiling.energy.ca.gov/GetDocument.aspx?tn=253699&DocumentContentId=88952.
[2] Pub. Util. Code § 25402.9(a) ("[T]he commission shall develop, adopt, and publish an informational booklet to educate and inform homeowners, rental property owners, renters, sellers, brokers, and the general public about the statewide home energy rating program.").

- Provide a notice in the HERS Whole-House Program booklet[3] regarding the California Air Resources Board's ("CARB") zero-emission space and water heating standard so consumers can understand the benefits of potential electrification;[4]
- Expand the greenhouse gas emissions estimates in Home Energy Reports to include not only carbon dioxide emissions, but also methane and refrigerant leakage associated with the home's current appliances. The greenhouse gas analysis in Home Energy Reports should take into account emissions over the lifetime of an appliance and, for electric end use equipment, should recognize the greenhouse gas intensity of grid electricity diminishing over time;
- Include a notice on Home Energy Reports beside each identified piece of gas-burning equipment and a general notice in the program booklet that explains to the reader that health-harming emissions from gas equipment can be reduced or eliminated by switching to electric equipment;
- Include a notice on Home Energy Reports and the program booklet identifying any incentives, financial assistance programs, or utility pilot programs that can assist low-income homeowners in financing recommended energy efficiency measures; and
- Ensure that the program booklet is available at no cost to low-income homeowners and renters and, ideally, require the distribution of this resource in home sales and leases so that residents are educated not only about the HERS Whole-House Program but generally about energy efficiency improvements, policy changes regarding gas appliances, and health impacts of gas appliances even if they do not pursue a comprehensive assessment through the program.

I. Since the HERS Whole-House Program was last Updated in 2009, State Policy has Recognized the Critical Importance of Building Electrification in Meeting California's Climate, Air Quality and Public Health Objectives.

California's climate, public health, and energy efficiency policies have recognized the crucial role of building electrification in addressing building sector emissions of both greenhouse gasses and localized air pollution. As CARB determined in its 2022 Scoping Plan, fossil gas "supplies about half of the energy consumed by end uses" in California's building sector, and "[a]chieving carbon neutrality must include transitioning away from fossil gas in residential and commercial buildings, and will rely primarily on advancing energy efficiency while replacing gas appliances with non-combustion alternatives."[5]

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[3] *See* Cal. Pub. Res. Code § 25402.9.
[4] CARB, 2022 State Strategy for the State Implementation Plan, at 101–103 (Sept. 22, 2022), https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf.
[5] CARB, 2022 Scoping Plan for Achieving Carbon Neutrality, at 211–212 (Dec. 2022) ("CARB 2022 Scoping Plan"), https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf.

Energy efficiency programs and education measures like the HERS Whole-House Program will play a critical role in supporting the decarbonization of California's existing building stock. State agencies have already recognized the need to prioritize electric equipment in energy efficiency programs. In the 2021 Integrated Energy Policy Report ("IEPR"), the CEC noted with regard to gas energy efficiency measures that "gas equipment efficiency investments have a growing likelihood over time of becoming stranded assets, becoming a liability for carbon offsets, or causing the state to miss its goals."[6] Similarly, the California Public Utilities Commission ("CPUC") recently initiated a stakeholder and staff process to develop a phase-out timeline for incentives for gas-burning energy efficiency measures in existing buildings. It also eliminated incentives for non-cost-effective gas-burning efficiency measures in new construction beginning in 2024, stating that "a more immediate phase-out of gas efficiency incentives, in new construction, is consistent with the state and Commission's building decarbonization policy to avoid 'locking in' long-lived gas assets."[7] In addition to avoiding emissions associated with gas-burning equipment, electric technologies such as heat pumps for space and water heating are far more energy efficient than their gas counterparts.[8] The HERS Whole-House Program update should ensure that the program design aligns with these energy efficiency policies in service of the state's climate goals.

Building electrification is also a component of California's public health policy. CARB has recognized that gas-burning equipment in buildings produces harmful air pollution.[9] Indeed, for years, peer-reviewed studies have repeatedly found that combustion of gas in household appliances produces carbon monoxide, nitric oxide and nitrogen dioxide ("NO_2"), formaldehyde, acetaldehyde, and ultrafine particles—often in excess of the levels set out by the California

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[6] CEC, Final 2021 Integrated Energy Policy Report Volume I: Building Decarbonization, at 22 (Feb. 22, 2022), https://efiling.energy.ca.gov/GetDocument.aspx?tn=241599.

[7] CPUC, D.23-04-035, *Decision Addressing Codes and Standards Subprograms and Budgets and Staff Proposal on Reducing Ratepayer-Funded Incentives for Gas Energy Efficiency Measures*, at 20 (Apr. 14, 2023) ("D.23-04-035"), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M505/K808/505808197.PDF (eliminating ratepayer-funded incentives for non-cost-effective gas-burning energy efficiency measures in new construction projects and initiating staff and stakeholder process for determining a phase-out of such measures in existing buildings).

[8] For example, at the time of this writing, the "super high efficiency" condensing tankless gas-fueled water heaters available from Rheem have UEF ratings of at .93 to .96, while heat pump water heaters range from 3.5 to 4.07 UEF. Rheem, *Super High Efficiency Tankless Water Heaters*, https://www.rheem.com/products/residential/water-heating/tankless/tankless-condensing/ (last accessed Feb. 13, 2024); Rheem, *Heat Pump Water Heaters*, https://www.rheem.com/products/residential/water-heating/heat-pump-water-heaters/ (last accessed Feb. 13, 2024).

[9] CARB 2022 Scoping Plan at 211; CARB, Carbon Monoxide & Health, https://ww2.arb.ca.gov/resources/carbon-monoxide-and-health (last accessed Feb. 13, 2024) (including gas stoves and malfunctioning or improperly vented gas water heaters, furnaces, or clothes dryers as sources of carbon monoxide indoors).

Ambient Air Quality Standards and the National Ambient Air Quality Standards.[10] These pollutants are harmful to human health. For example, a 2020 meta-analysis examining the association between gas stoves and childhood asthma found that "children in homes with gas stoves have a 42 percent increased risk of experiencing asthma symptoms (current asthma)" and "a 24 percent increased risk of ever being diagnosed with asthma by a doctor (lifetime asthma)."[11] In 2020, CARB adopted Resolution 20-32, recognizing "the conclusion of recent studies that a 100 percent electrification of natural gas appliances in California would result in significant health benefits and reduction of greenhouse gas (GHG) emissions from natural gas combustion in residential buildings."[12]

In addition to directly impacting indoor air quality, emissions from gas equipment in buildings also deteriorate ambient air quality outdoors. Because NO_x is a precursor to smog,[13] NO_x emissions from gas-fueled appliances in buildings can significantly contribute to localized outdoor air pollution. UCLA researchers found that if all residential gas appliances in California were replaced with clean-fueled electric alternatives, the reduction in outdoor air pollution would avoid 350 deaths, 600 cases of acute bronchitis, and 300 cases of chronic bronchitis each year—equal to about $3.5 billion in annual monetized health benefits.[14] Another study prepared for the CPUC found that electrifying all gas combustion in California's buildings would avoid 818

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[10] *See, e.g.*, Jennifer M. Logue et al., Pollutant Exposures from Natural Gas Cooking Burners: A Simulation-Based Assessment for Southern California, 122 Env't Health Perspectives 43, 43–50 (2014), http://dx.doi.org/10.1289/ehp.1306673 (modeling exposure rates for gas stove pollutants and finding that "62%, 9%, and 53% of occupants are routinely exposed to NO_2, CO, and HCHO levels that exceed acute health-based standards and guidelines" and that "reducing pollutant exposures from [gas stoves] should be a public health priority."); John Manuel, A Healthy Home Environment?, 107 Env't Health Perspectives 352, 352–57 (1999), https://doi.org/10.1289/ehp.99107a352 (finding that gas furnaces and other gas appliances can be sources of unsafe indoor carbon monoxide concentrations); Nasim A. Mullen, Jina Li, & Brett C. Singer, *Impact of Natural Gas Appliances on Pollutant Levels in California Homes*, Lawrence Berkeley Nat'l Lab'y (Dec. 2012), https://eta-publications.lbl.gov/sites/default/files/impact_of_natural_gas_appliances.pdf (finding that concentrations of NO_2, NO_x, and carbon monoxide were associated with use of gas appliances); Dr. Yifang Zhu et al., *Effects of Residential Gas Appliances on Indoor and Outdoor Air Quality and Public Health in California*, UCLA Fielding School of Pub. Health, (Apr. 2020) ("UCLA Air Quality Study"), https://ucla.app.box.com/s/xyzt8jc1ixnetiv0269qe704wu0ihif7 (finding that gas combustion appliances are associated with higher concentrations of NO_2, NO_x, CO, fine particulate matter, and formaldehyde in indoor air, and discussing the health impacts of acute and chronic exposure to each pollutant).

[11] Brady Seals & Andee Krasner, *Gas Stoves: Health and Air Quality Impacts and Solutions*, Rocky Mountain Institute, Physicians for Social Responsibility, and Sierra Club, at 13 (2020), https://rmi.org/insight/gas-stoves-pollution-health/.

[12] CARB, Res. 20-32, at 2 (Nov. 19, 2020), https://ww2.arb.ca.gov/sites/default/files/barcu/board/res/2020/res20-32.pdf.

[13] *See* U.S. Environmental Protection Agency, *Nitrogen Oxides (NO_x) Control Regulations*, https://www3.epa.gov/region1/airquality/nox.html (last accessed Feb. 20, 2024) ("Nitrogen Oxides are a family of poisonous, high reactive gases. These gases form when fuel is burned at high temperatures . . . [NO_x] is a strong oxidizing agent and plays a major role in the atmospheric reactions with volatile organic compounds (VOC) that produce ozone (smog) on hot summer days.").

[14] UCLA Air Quality Study at 39.

premature deaths as well as other health harms, producing over $7.3 billion (2020$) in monetized health benefits.[15] In its 2022 State SIP Strategy, CARB explained that California buildings produce "about 66 [tons per day] NO_x statewide due to natural gas combustion," and that "[n]early 90 percent of building NO_x emissions are due to space and water heating and the remaining 10 percent are due to cooking, clothes drying, and other miscellaneous end uses."[16] To address these substantial NO_x emissions, CARB proposed a zero-emission standard for all space and water heaters sold in California beginning in 2030.[17] The Bay Area Air Quality Management District ("BAAQMD") also adopted zero-NO_x emissions standards for water heaters, furnaces, and large commercial water heaters sold or installed in the Bay Area beginning in 2027, 2029, and 2031, respectively, to "support improvements to regional air quality and public health."[18]

II. Recommended Updates to the HERS Whole-House Program

A. Home Energy Reports Should Recognize the Superior Efficiency of Electric Appliances and Should Assess Home Electric Readiness in Step with the Title 24 Building Energy Efficiency Standards.

In light of the policies and goals described above, the CEC should ensure that the updated HERS Whole-House Program expressly communicates the benefits of residential electrification, including the significantly superior efficiency of electric heat pump technologies compared to their gas counterparts and upcoming foreseeable changes to the appliance market that correspond with policy shifts. For example, Home Energy Reports generated through the program are statutorily required to provide "reliable recommendations on cost-effective measures to improve energy efficiency."[19] For any gas space or water heating end use equipment in a home, Home Energy Reports should be required to recommend an electric heat pump alternative due to their overwhelmingly superior efficiency performance compared to gas technologies.[20]

To keep up with evolving policies, the "Reference Home" against which homes are compared for the purposes of calculating a Home Energy Rating Score should also continuously

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[15] Gabe Mantegna et al., *Quantifying the Air Quality Impacts of Decarbonization and Distributed Energy Programs in California*, at 7, 33–34, Energy and Environmental Economics (2021), https://www.ethree.com/wp-content/uploads/2022/01/CPUC-Air-Quality-Report-FINAL.pdf.
[16] CARB, 2022 State Strategy for the State Implementation Plan, at 30 (Sept. 22, 2022), https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf.
[17] *Id*. at 102.
[18] *See* BAAQMD, Air District Appliance Rules – Furnaces and Water Heaters, https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-9-rule-4-nitrogen-oxides-from-fan-type-residential-central-furnaces/2021-amendments/documents/20230127_factsheet_rg09040906-pdf.pdf (last accessed Feb. 22, 2024) (summarizing amendments to Regulation 9, Rules 4 and 6, which were adopted March 15, 2023).
[19] Cal. Pub. Res. Code § 25942(a)(2); *see also* 20 C.C.R. § 1672(i).
[20] In addition to space and water heating equipment, electric induction stoves are also more efficient than gas stoves while avoiding the health risks associated with burning gas in homes.

track with the most updated baseline requirements of the Title 24 Building Energy Efficiency Standards. This includes updating the technical manual for the HERS Whole-House Program to include new parameters as they become part of Title 24's baseline requirements. For example, because Title 24 currently requires electric-ready design for single-family and multi-family residential buildings,[21] Home Energy Reports should assess the electric capacity, wiring, and other electric-readiness features (i.e., space for equipment, etc.) of a home's design. Including electric-readiness as part of a Home Energy Report is also critical to understanding the extent upgrades may be needed to transition to electric appliances.

B. Program Materials Must Provide Information About Zero-NO_x Appliance Standards in California so that Buyers and Sellers are Made Aware of Potential Costs and Benefits of Electrifying Their Homes.

Zero-NO_x emissions standards proposed for implementation in the next ten years are critical information for California residents seeking to understand the energy usage of their homes or homes they are considering buying or selling. Because home appliances can last over a decade, it is important that consumers are aware of these rules as they may impact appliance purchasing decisions they make now. For example, if someone is looking to buy a home, but they see that the home contains numerous gas appliances that are likely to burn out in the next several years, they should be able to make an informed decision that takes into account potential infrastructure upgrades that will be needed to accommodate compliant appliances after the zero-NO_x rules go into effect. Similarly, if a homeowner receives a Home Energy Audit or reads the HERS Whole-House Program booklet and identifies an aging piece of gas equipment they would like to replace, they should know that replacing that equipment with gas will push potential wiring or panel upgrade costs to an informed buyer if they sell their home, and that buyer may try to negotiate a lower price based on those costs. Awareness regarding these policy shifts will help homeowners make educated choices and plans when they anticipate replacing aging equipment, and including this information in program materials is consistent with the statutory requirement for the CEC to develop "labeling procedures that will meet the needs of home buyers, homeowners, renters, the real estate industry, and mortgage lenders with an interest in home energy ratings."[22] Accordingly, the HERS Whole-House Program booklet should include information on upcoming zero-NO_x standards, and Home Energy Reports should flag this information as well for all homes that contain gas appliances.

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[21] *See* CEC, 2022 Building Energy Efficiency Standards: What's New For Single-Family Residential, at 1 (July 15, 2022), https://www.energy.ca.gov/sites/default/files/2022-08/2022_Single-family_Whats_New_Summary_ADA.pdf; CEC, 2022 Building Energy Efficiency Standards: What's New for Multifamily, at 1 (Aug. 4, 2022), https://www.energy.ca.gov/sites/default/files/2022-08/2022_Multifamily_Whats_new_Summary_ADA.pdf .

[22] Cal. Pub. Res. Code § 25942(a)(5).

C. The Greenhouse Gas Emissions Portion of Home Energy Reports Should Include Methane and Refrigerant Analysis Over the Life of the Appliance.

The current program regulations require Home Energy Ratings and Audits to assess greenhouse gas emissions by "includ[ing] an estimate of the carbon dioxide emissions attributable to the projected energy use of a home."[23] This requirement should be updated to look more comprehensively at greenhouse gas emissions beyond just CO_2. Specifically, the greenhouse gas emissions analysis should be updated to include methane leakage associated with gas appliances as well as global warming potential ("GWP") of refrigerants. Educating consumers about the climate impacts of methane-burning equipment and the need for proper disposal of high-GWP refrigerants will not only help consumers make informed purchasing decisions, but will also help to prevent equipment containing high-GWP refrigerants from being improperly disposed of on burnout due to homeowners' lack of awareness regarding the resulting climate impacts.

Methane, the primary component of natural gas, is a greenhouse gas "with a warming potential 84 times greater than carbon dioxide (CO_2) over a 20-year period and 30 times greater over a 100-year period."[24] A 2022 study demonstrated that gas appliances, such as stoves, can leak methane even when they are turned off, resulting in significant emissions rates.[25] In addition to leakage directly from end-use equipment, methane leakage from the gas system is estimated to result in emissions of up to 2.6 million tons per year.[26] To the extent that a home includes gas-burning end use equipment, methane emissions estimates over the lifetime of the equipment should be included in the assessment's greenhouse gas emissions section.[27] This section of the report should also include a comparison explaining that those emissions can be changed to zero, in furtherance of California's climate goals, if the appliance is replaced with an electric alternative.

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[23] 20 C.C.R. § 1672(j).

[24] Environmental Defense Fund, *Methane Emissions from U.S. Gas Pipeline Leaks*, at 4 (Aug. 2023) ("EDF Methane Leakage Report"), https://www.edf.org/sites/default/files/documents/Pipeline%20Methane%20Leaks%20Report.pdf.

[25] Eric Lebel et al., Methane and NO_x Emissions from Natural Gas Stoves, Cooktops, and Ovens in Residential Homes, Environ. Sci. & Technol. 2022, 56, 2529–2539, https://pubs.acs.org/doi/10.1021/acs.est.1c04707?ref=pdf (Jan. 27, 2022) (finding that "[m]ore than three-quarters of methane emissions we measured originated during steady-state-off" and that "[u]sing a 20-year timeframe for methane, annual methane emissions from all gas stoves in U.S. homes have a climate impact comparable to the annual carbon dioxide emissions of 500,000 cars.").

[26] EDF Methane Leakage Report at 5.

[27] *See* CPUC Energy Division Staff, R.19-01-011 Phase III Staff Proposal, at 24 (Nov. 16, 2021), https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M423/K516/423516230.PDF (explaining that newly-installed gas appliances "perpetuate reliance on gas service and lock in all associated GHG emissions for the life of the appliance – which averages 10 to 20 years for a gas water heater and 18 years for a gas furnace – unless the appliance is retired early and replaced with an electric alternative." (citation omitted)).

With regard to refrigerants, proper disposal is essential given their high GWP. As CARB has noted, the "most common refrigerant today, R-22, has a 100-year GWP of 1,810, almost 2,000 times the potency of carbon dioxide, so just one pound of R-22 is nearly as potent as a ton of carbon dioxide."[28] While "[n]ew low-GWP technologies and solutions are advancing rapidly and are available today," it is important for residents who are considering replacing equipment that contains refrigerants to understand the proper disposal procedures.[29] HERS Whole-House Program materials should include resources for homeowners to understand what steps they need to take to ensure proper disposal through a certified reclaimer pursuant to state and federal regulations.[30]

D. Home Energy Reports Should Explain the Health Risks from Gas-Burning End Use Equipment.

Indoor air quality is inherently linked to energy efficiency standards. For example, a 2020 report commissioned by the CEC regarding air quality and ventilation noted that building envelope and duct air sealing energy efficiency measures "increase the risk of negative health impacts as indoor air pollutant concentrations and exposures may increase."[31] For this reason, the 2022 Building Code establishes ventilation requirements that differentiate between homes with electric and gas cooking equipment and require higher capture efficiency or airflow rates for ventilation over gas ranges.[32] The CEC should similarly incorporate air quality concerns into the educational materials it provides to consumers through the HERS Whole-House Program, particularly since the program may recommend air sealing measures to improve energy efficiency of homes.

HERS Whole-House Program materials should educate consumers about the dangers of gas combustion in their homes and the opportunity to reduce emissions of harmful air pollutants like NO_x to zero by switching to electric equipment. Specifically, Home Energy Reports should flag any gas-burning equipment with a clear notice regarding the health risks associated with the equipment, as well as an explanation that switching to electric can reduce or eliminate those emissions.[33] These health warnings should also appear generally in the program booklets, so that

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[28] CARB, High-GWP Refrigerants, https://ww2.arb.ca.gov/resources/documents/high-gwp-refrigerants (last accessed Feb. 21, 2024).
[29] *Id.*
[30] *See* 17 C.C.R. §§ 95382(a)(7), 95390(a)(5); 40 C.F.R. §§ 82.161, 82.164.
[31] CEC, *Ventilation and Air Quality in New California Homes with Gas Appliances and Mechanical Ventilation*, at 7 (Mar. 2020), https://www.energy.ca.gov/sites/default/files/2021-05/CEC-500-2020-023.pdf.
[32] CEC, 2022 Building Energy Efficiency Standards for Residential and Nonresidential Buildings, at 330, Table 150.0-G (2022), https://www.energy.ca.gov/sites/default/files/2022-12/CEC-400-2022-010_CMF.pdf.
[33] Some emissions, such as particulate matter from cooking, can be reduced but not completely eliminated by switching to an electric stove, because they result both from the combustion of gas and from the changes to the food itself as it cooks. However, emissions resulting solely from gas combustion, such as NO_x, can be completely eliminated by switching to electric equipment.

homeowners and residents can be educated about the dangers of gas appliances even if they do not get a Home Energy Audit or Rating.

E. The HERS Whole-House Program Should Emphasize Education and Accessibility.

The CEC has the opportunity with the HERS Whole-House Program update to provide extremely valuable educational tools to all housed Californians regarding energy efficiency and building decarbonization. Indeed, CARB's 2022 Scoping Plan identifies "expand[ing] consumer education efforts to raise awareness and stimulate the adoption of decarbonized buildings and appliances, especially in vulnerable communities," as one of its strategies for achieving success.[34] As such, the program redesign should prioritize accessibility and equity.

As an initial matter, the CEC should ensure that the educational benefits of the HERS Whole-House Program are not limited to homeowners who can afford to participate directly in a Home Energy Audit or Rating process, but are also available to low-income homeowners and renters. To do so, the CEC should implement a low- or no-cost program for low-income homeowners and renters to have Home Energy Audits performed on their residences. At a minimum, the CEC should ensure access to general energy efficiency and decarbonization education to all California residents through the program's associated booklet program. Specifically, the booklet program should be updated to include at least the following information, in addition to information regarding the availability of HERS Whole-House Program Energy Audits and Ratings:

- High-level information regarding energy efficiency and the superior efficiency of electric equipment such as heat pumps for space and water heating;
- Information regarding the health and climate impacts of gas-burning equipment in homes;
- Information regarding proper refrigerant disposal;
- Identification of rebates, low-income programs, and any other energy efficiency or building decarbonization incentive programs available to California consumers, including federal subsidies, state programs, and utility programs, and where residents can find more information on those benefits; and
- Self-help steps residents can take to improve the energy efficiency of their homes.

To ensure that the booklets are accessible to everyone, the CEC should make a PDF available for download on the CEC's website, and should ensure that a copy of the booklet is included in all home sale disclosures and leases.

Thank you for your consideration of these comments. Earthjustice looks forward to

[34] CARB 2022 Scoping Plan at 215.

participating in subsequent workshops and phases of this proceeding to ensure that the HERS Whole-House Program is revitalized in alignment with California's decarbonization and public health objectives.

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