



Environment & Climate Commission

AGENDA

REGULAR MEETING OF THE ENVIRONMENT AND CLIMATE COMMISSION

[Click here for the entire Agenda Packet](#)

Please click the link below to join the webinar:

<https://us06web.zoom.us/j/87698907626>

Or Telephone:

US: +1 669 444 9171 or +1 669 900 6833

Webinar ID: 876 9890 7626

PUBLIC ADVISORY: This meeting will be conducted exclusively through videoconference and teleconference.

Pursuant to Government Code Section 54953(e) and the state declared emergency, this meeting of the Environment and Climate Commission will be conducted exclusively through teleconference and Zoom videoconference. The COVID-19 state of emergency continues to directly impact the ability of the members to meet safely in person and presents imminent risks to the health of attendees. Therefore, no physical meeting location will be available.

To access the meeting remotely: Join from a PC, Mac, iPad, iPhone, or Android device: Please use this URL <https://us06web.zoom.us/j/87698907626>. If you do not wish for your name to appear on the screen, then use the drop-down menu and click on "rename" to rename yourself to be anonymous. To request to speak, use the "raise hand" icon by rolling over the bottom of the screen. To join by phone: Dial [+1 669 444 9171](tel:+16694449171) and enter Meeting ID [876 9890 7626](tel:+16699006833). If you wish to comment during the public comment portion of the agenda, Press *9 and wait to be recognized by the Chair.

Please be mindful that the teleconference will be recorded as any official meeting is recorded, and all other rules of procedure and decorum will apply for official meetings conducted by teleconference or videoconference.

Wednesday, February 22, 2023, 6:00 PM

LAND ACKNOWLEDGEMENT

The City of Berkeley recognizes that the community we live in was built on the territory of xučyun (Huchiun (Hooch-yoon)), the ancestral and unceded land of the Chochoy (Cho-chen-yo)-speaking Ohlone (Oh-low-nee) people, the ancestors and descendants of the sovereign Verona Band of Alameda County. This land was and continues to be of great importance to all of the Ohlone Tribes and descendants of the Verona Band. As we begin our meeting tonight, we acknowledge and honor the original inhabitants of Berkeley, the documented 5,000-year history of a vibrant community at the West Berkeley Shellmound, and the Ohlone people who continue to reside in the East Bay. We recognize that Berkeley's residents have and continue to benefit from the use and occupation of this unceded stolen land since the City of Berkeley's incorporation in 1878. As stewards of the laws regulating the City of Berkeley, it is not only vital that we recognize the history of this land, but also recognize that the Ohlone people are present members of Berkeley and other East Bay communities today. The City of Berkeley will continue to build relationships with the Lisjan Tribe and to create meaningful actions that uphold the intention of this land acknowledgement.

PRELIMINARY MATTERS**1. Call to Order and Roll Call:**

Tregub, Igor	Mayor	Mayor
Ranney, Sarah	Kesarwani	District 1
Hedlund, Marc	Taplin	District 2
McGuire, Brianna	Bartlett	District 3
Tahara, Daniel	Harrison	District 4
Allen, Shannon	Hahn	District 5
Guliasi, Les	Wengraf	District 6
Lunaparra, Cecilia	Robinson	District 7
Gould, Ben	Droste	District 8

2. **Public Comment:** Comments on subjects not included on the agenda (3-minute limit per individual)
3. **Approval of Minutes:** [Approval of Minutes from last meeting \(January 18, 2023\)](#)
4. **Agenda Check:** Commissioners may rearrange items on the agenda
5. **Update from Chair** (Chair Gould)
6. **Update from Staff** (Sarah Moore)
 - a. [Health & Safety Protocols for In-Person Commission Meetings](#)
 - b. Berkeley E-Bike Equity Project (BEEP) Application: bit.ly/beepapplication

DISCUSSION AND ACTION ITEMS**7. [Presentation & Discussion: Building Emissions Saving Ordinance \(BESO\) – Developing Single Family Energy Standards](#)** (Ammon Reagan)

City Council amended Berkeley's Building Emissions Saving Ordinance (BESO) and directed staff to recommend energy upgrade requirements for Council's consideration. Staff is seeking feedback from the Commission and community on this work to develop an energy standard proposal for single family to accelerate existing building decarbonization.

8. Consideration of Action: Commission Officer Elections**9. Reports from Commission Liaisons**

- a. Planning Commission (Ben Gould)
- b. Transportation and Infrastructure Commission (Brianna McGuire)
- c. Parks, Recreation and Waterfront Commission (Cecilia Lunaparra)
- d. Zero Waste Commission (Sarah Ranney)
- e. Disaster and Fire Safety Commission (Les Guliasi)
- f. Housing Advisory Commission (Marc Hedlund)

10. Workplan Subcommittee Updates

- a. Zoning Changes to Encourage EV Charging/ Discourage Gas Stations Subcommittee (McGuire, Allen, Lunaparra, Tahara)
- b. Transportation Public Space Reallocation Subcommittee (Hedlund, McGuire, Lunaparra, Gould)
- c. Native Plants and Pest Reduction Subcommittee (Ranney, McGuire, Allen)

11. Consideration of Action: 2023 Workplan

12. Consideration of Action: Hopkins Bike Lanes Off Agenda Communication to Council

13. Items for Future Agenda

- Zero Waste Strategic Plan (March)
- Lead paint
- Community building electrification outreach

INFORMATION ITEMS

14. Communications

15. Announcements from Commissioners

ADJOURNMENT

~~~~~  
 This meeting will be conducted in accordance with the Brown Act, Government Code Section 54953. Any member of the public may attend this meeting. Questions regarding this matter may be addressed to **Billi Romain**, 510-981-7432, [bromain@cityofberkeley.info](mailto:bromain@cityofberkeley.info).

*Communications to Berkeley boards, commissions or committees are public record and will become part of the City's electronic records, which are accessible through the City's website. Please note: E-mail addresses, names, addresses, and other contact information are not required but, if included in any communication to a City board, commission, or committee, will become part of the public record. If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the secretary of the relevant board, commission, or committee. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the secretary to the relevant board, commission, or committee for further information.*

*Any writings or documents provided to a majority of the commission regarding any item on this agenda will be made available for public inspection at the Planning Department located at 1947 Center Street.*



**COMMUNICATION ACCESS INFORMATION:**

This meeting is being held in a wheelchair-accessible location. To request a disability-related accommodation(s) to participate in the meeting, including auxiliary aids or services, please contact the Disability Services specialist at 981-6418 (V) or 981-6347 (TDD) at least three business days before the meeting date. Please refrain from wearing scented products to this meeting.

~~~~~  
 I hereby certify that the agenda for this regular/special meeting of the Berkeley City Commission on Commissions was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website.
 Billi Romain, Commission Secretary



Environment & Climate Commission

ENVIRONMENT AND CLIMATE COMMISSION DRAFT MINUTES
Wednesday, January 18, 2023

Tregub, Igor	Mayor	Mayor
Ranney, Sarah	Kesarwani	District 1
Hedlund, Marc	Taplin	District 2
McGuire, Brianna	Bartlett	District 3
Tahara, Daniel	Harrison	District 4
Allen, Shannon	Hahn	District 5
Guliasi, Les	Wengraf	District 6
Lunaparra, Cecilia	Robinson	District 7
Gould, Ben	Droste	District 8

1. Call to Order and Roll Call

The meeting was called to order by Billi Romain at 6:03 p.m.

Commissioners Present: Tregub, Ranney, Hedlund, McGuire, Allen, Guliasi, Lunaparra, Gould

Commissioner Leave of Absence: Tahara

Commissioner Absent: None

Staff: Billi Romain, Rebecca Milliken

2. Public Comments and Announcements:

2 member(s) of the Public

1 comment(s)

3. Approval of Minutes:

Motion/second to approve the November 30, 2022 Minutes (Guliasi, Lunaparra). The motion carried 8-0-0-1; Ayes: Tregub, Ranney, Hedlund, McGuire, Tahara, Allen, Guliasi, Lunaparra, Gould. Noes: None. Abstain: None. Absent: Tahara

4. Agenda Check

5. Update from Chair

6. Update from Staff

- a. In-person meetings
- b. Climate Equity Pilot Fund
- c. Youth Commissioner
- d. Gas Station Warning Labels & Used Gas Car Ban
- e. BESO minimum requirements:
- f. Gas Prohibition amendments
- g. Staffing

7. Reports from Commission Liaisons

- a. Planning Commission (Gould)
- b. Transportation and Infrastructure (McGuire)
- c. Parks, Recreation and Waterfront Commission (Lunaparra)
- d. Zero Waste Commission (Ranney)
- e. Disaster and Fire Safety Commission (Guliasi)
- f. Housing Advisory Commission (Hedlund)
- g. Zoning Adjustments Board (Tregub)

DISCUSSION AND ACTION ITEMS

8. Workplan Subcommittee Updates

- a. Zoning Changes to Encourage EV Charging/ Discourage Gas Stations Subcommittee (McGuire, Allen, Lunaparra, Tahara)
- b. Transportation Public Space Reallocation Subcommittee (Hedlund, McGuire, Lunaparra, Gould)
- c. Native Plants and Pesticide Reduction Subcommittee (Ranney, McGuire, Allen)

9. Draft Workplan Discussion

10. Items for Future Agenda

- Lead Paint
- 2023 Workplan
- 2023 Officer Elections
- BESO minimum requirements

INFORMATION ITEMS

11. Communications

12. Announcements from Commissioners

ADJOURNMENT

Motion/second to adjourn at 7:53pm (Hedlund; McGuire). The motion carried 8-0-0-1; Ayes: Tregub, Ranney, Hedlund, McGuire, Allen, Guliasi, Lunaparra, Gould. Noes: None. Abstain: None. Absent: Tahara

Minutes Approved:

/S/ Billi Romain, Berkeley Energy Commission Secretary

Health and Safety Protocols for In-Person Meetings of Berkeley Boards and Commissions February 2023

The policy below applies to in-person meetings of Berkeley Boards and Commissioners held in accordance with the Government Code (Brown Act) after the end of the State-declared emergency on February 28, 2023.

Issued By: City Manager's Office

Date: February 14, 2023

I. Vaccination Status

All attendees are encouraged to be fully up to date on their vaccinations, including any boosters for which they are eligible.

II. Health Status Precautions

For members of the public who are feeling sick, including but not limited to cough, shortness of breath or difficulty breathing, fever or chills, muscle or body aches, vomiting or diarrhea, or new loss of taste or smell, it is recommended that they do not attend the meeting in-person as a public health precaution. In these cases, the public may submit comments in writing in lieu of attending in-person.

If an in-person attendee has been in close contact, as defined below, with a person who has tested positive for COVID-19 in the past five days, they are advised to wear a well-fitting mask (N95s, KN95s, KF94s are best), test for COVID-19 3-5 days from last exposure, and consider submitting comments in writing in lieu of attending in-person.

Close contact is defined as someone sharing the same indoor airspace, e.g., home, clinic waiting room, airplane, etc., for a cumulative total of 15 minutes or more over a 24-hour period within 2 days before symptoms of the infected person appear (or before a positive test for asymptomatic individuals); or having contact with COVID-19 droplets (e.g., being coughed on while not wearing recommended personal protective equipment).

A voluntary sign-in sheet will be available at the meeting entry for in-person attendees. This will assist with contact tracing in case of COVID-19 contact resulting from the meeting.

Members of City Commissions are encouraged to take a rapid COVID-19 test on the day of the meeting.

Health and Safety Protocols for In-Person Meetings of Berkeley Boards and Commissions February 2023

III. Face Coverings/Mask

Face coverings or masks that cover both the nose and mouth are encouraged for all commissioners, staff, and attendees at an in-person City Commission meeting. Face coverings will be provided by the City and available for attendees to use at the meeting. Members of Commissions, city staff, and the public are encouraged to wear a mask at all times, except when speaking publicly from the dais or at the public comment podium, although masking is encouraged even when speaking.

IV. Physical Distancing

Currently, there are no physical distancing requirements in place by the State of California or the Local Health Officer for an indoor event similar to a Commission meeting.

Audience seating capacity will be at regular allowable levels per the Fire Code. Capacity limits will be posted at the meeting location. However, all attendees are requested to be respectful of the personal space of other attendees. An area of the public seating area will be designated as “distanced seating” to accommodate persons that need to distance for personal health reasons.

Distancing will be implemented for the dais as space allows.

V. Protocols for Teleconference Participation by Commissioners

Upon the repeal of the state-declared emergency, all standard Brown Act requirements will be in effect for Commissioners participating remotely due to an approved ADA accommodation. For Commissioners participating remotely, the agenda must be posted at the remote location, the remote location must be accessible to the public, and the public must be able to participate and give public comment from the remote location.

- A Commissioner at a remote location will follow the same health and safety protocols as in-person meetings.
- A Commissioner at a remote location may impose reasonable capacity limits at their location.

VI. Hand Washing/Sanitizing

Hand sanitizing stations are available at the meeting locations. The bathrooms have soap and water for handwashing.

VII. Air Flow/Circulation/Sanitizing

Air filtration devices are used at all meeting locations. Window ventilation may be used if weather conditions allow.



Building Emissions Saving Ordinance (BESO)

Single Family Energy Standards

February 22, 2023





Covers all buildings...



BECC 2019



Covers all buildings...





Building Emissions Savings Ordinance



Homes 1-4 Units

- Electrification Assessment (or fuel source disclosure) at **time of listing**



Small Buildings
Up to 15k

- Electrification Assessment (or fuel source disclosure) at **time of listing**



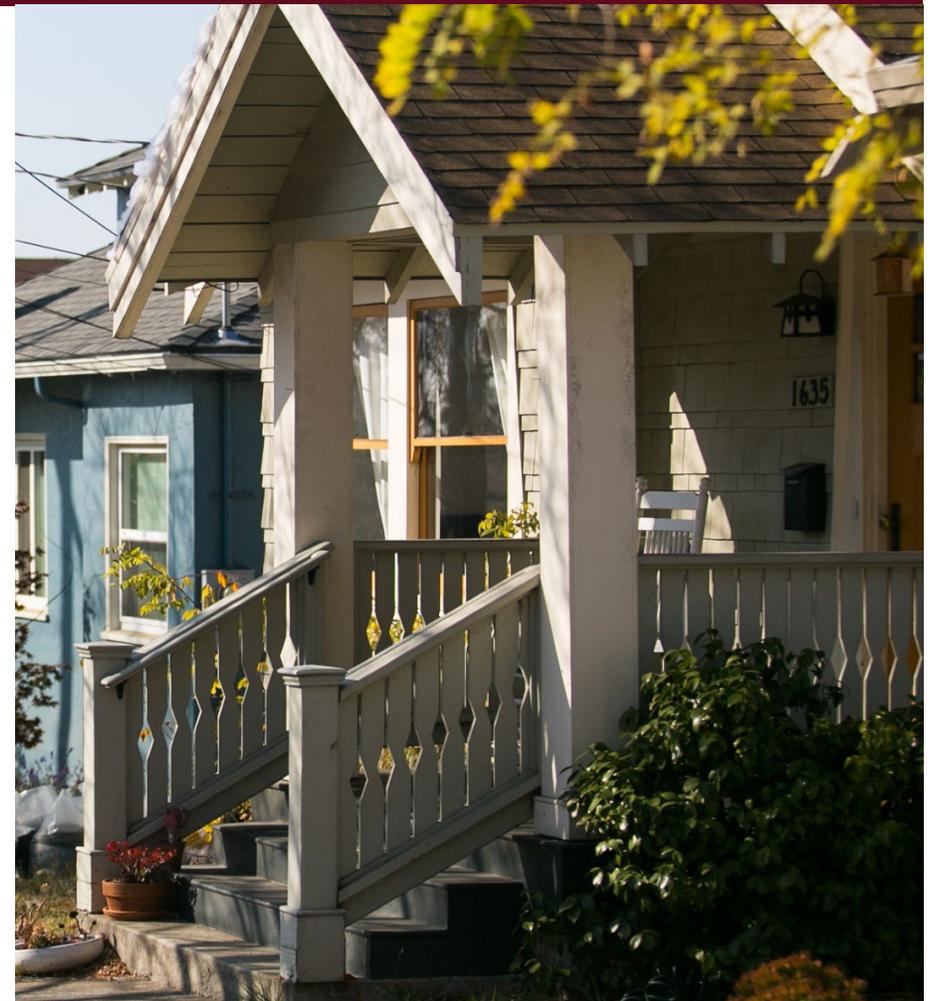
Medium Buildings
15k -25k

- Electrification Assessment (or fuel source disclosure) at **time of listing**
- Annual Benchmarking



Large Buildings
25k+

-
- Electrification Assessment **every 5 years**
 - Annual Benchmarking





Time of Listing Compliance Pathways



**Path 1:
High Performance
Exemption**



**Path 2:
Complete BESO
Assessment**



**Path 3:
Deferral to Buyer
(Fuel Source
Disclosure)**



Electrification Checklist

ELECTRIFICATION CHECKLIST

Address: _____ City: _____

Space Heating & Cooling

1. Identify all existing space heating equipment and distribution methods.

DUCTED	<input type="checkbox"/> Central gas furnace	<input type="checkbox"/> Electric furnace
	<input type="checkbox"/> Propane/LPG central furnace	<input type="checkbox"/> Electric heat pump (ducted air-source)
	<input type="checkbox"/> Oil furnace	<input type="checkbox"/> Ground coupled heat pump (ducted, water-to-air)
HOT WATER	<input type="checkbox"/> Gas boiler	<input type="checkbox"/> Electric boiler
	<input type="checkbox"/> Propane/LPG boiler	<input type="checkbox"/> Ground coupled heat pump (water-to-water/-refrigerant)
DIRECT	<input type="checkbox"/> Electric baseboard heater	<input type="checkbox"/> Room (through-the-wall) gas furnace
	<input type="checkbox"/> Wood stove	<input type="checkbox"/> Mini-split (ductless) heat pump (electric air-source)
	<input type="checkbox"/> Pellet stove	
NONE	<input type="checkbox"/> No space heating (skip questions 2 and 5)	

2. Is the primary space heating system 10 years or older? Yes No Unknown

3. Identify all existing space cooling equipment and distribution methods.

DUCTED	<input type="checkbox"/> Central air conditioner	<input type="checkbox"/> Electric heat pump (ducted air-source)
	<input type="checkbox"/> Direct evaporative cooling	<input type="checkbox"/> Ground coupled heat pump (ducted water-to-air)
DIRECT	<input type="checkbox"/> Room air conditioner	<input type="checkbox"/> Mini-split (ductless) heat pump (electric air-source)
	<input type="checkbox"/> Direct evaporative cooling	<input type="checkbox"/> Ground coupled heat pump (water-to-water/-refrigerant)
NONE	<input type="checkbox"/> No space cooling (skip questions 4 and 5)	

4. Is the primary space cooling system 10 years or older? Yes No Unknown

5. Are the primary space heating and cooling systems both on the same centralized ducting? Yes No Unknown

Water Heater

1. Is the existing domestic hot water system a heat pump water heater? Yes (skip the rest of this section) No

2. Is there an electrical outlet within 3 ft of the water heater? Yes No Unknown

3. Where is the water heater?

Indoors: Living space Interior closet Basement Garage Attic Interior other (specify): _____

Outdoors: (skip the rest of this section)

4. Is the water heater location space conditioned? Yes (conditioned) No (unconditioned)

5. What are the room or closet dimensions? Round down to the nearest foot.
 _____ ft wide x _____ ft deep x _____ ft high = _____ cubic ft

6. Check all that apply regarding water heater location:

Has louvered door, wall vent to exterior, or other non-mechanical ventilation

Has mechanical ventilation (heating/cooling)

Adjacent to exterior wall

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ELECTRIFICATION CHECKLIST

Stove/Range

1. Stove top type:

Natural gas Electric flat top (resistance) Electric coil (resistance)

Propane gas / CNG Electric flat top (induction) No stove top (skip questions 2 and 5)

2. Is the stove top 5 years or older? Yes No Unknown

3. Oven type:

Natural gas Propane gas / CNG Electric resistance No oven (skip the rest of this section)

4. Is the oven 5 years or older? Yes No Unknown

5. Stove top and oven are: Combined appliance (range) Separate appliances

Clothes Dryer

1. What is the existing clothes dryer type?

Natural gas Electric resistance No existing clothes dryer (skip question 2)

Propane gas / CNG Electric heat pump (skip question 2)

2. Is the clothes dryer 5 years or older? Yes No Unknown

Electrical Panel

1. Main electrical service panel type: Circuit Breaker Fuse Box (skip the rest of this section)

a. Main panel amperage: _____ A

b. Capacity in main panel for additional load? Yes No Unknown

c. Number of blank spaces or unused breakers in main panel: _____

2. Is an electrical subpanel present? Yes No (skip the rest of this section)

a. Subpanel amperage: _____ A

b. Capacity in subpanel for additional load? Yes No Unknown

c. Number of blank spaces or unused breakers in subpanel: _____

Other Electrification Resources/Appliances

1. Does the home have Level 2 electric car charging? Yes No Unknown

2. Does the home have an electric battery storage system? Yes No Unknown

Whole Home Electrification

1. Do you think this home is a suitable candidate for full electrification?

Great fit Good fit Not a good fit

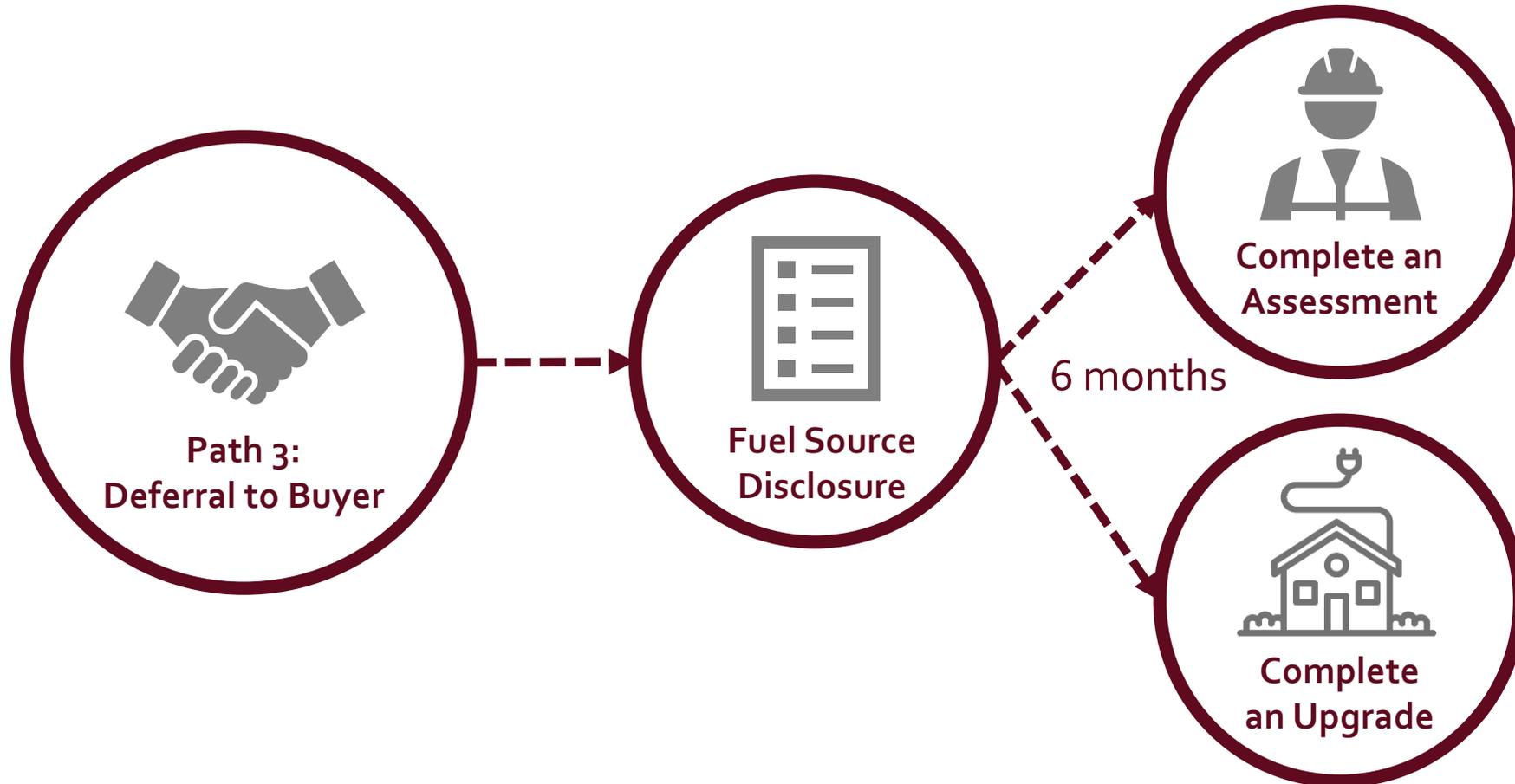
Please describe any information you were not able to collect and why:

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Deferral to Buyer





Deferral - Fuel Source Disclosure



BUILDING EMISSIONS SAVING ORDINANCE (BESO) FUEL SOURCE DISCLOSURE - RESIDENTIAL BUILDINGS (1-4 UNITS)

Property Address: 1001 TEST AVE, BERKELEY, CA 94704

System/Appliance Fuel Sources:

- Hot water heater: Natural Gas (Fossil Fuel)
- Cooktop/Stove: Natural Gas (Fossil Fuel)
- Clothes dryer: Natural Gas (Fossil Fuel)
- Space heating/furnace: Natural Gas (Fossil Fuel)
- Oven: Natural Gas (Fossil Fuel)
- Fireplace: Natural Gas (Fossil Fuel)

Other gas systems/appliances:

Why does BESO require the disclosure of fuel sources?

All-electric buildings are healthier, safer, and more comfortable than buildings with natural gas appliances. All-electric buildings also reduce the pollution that causes climate change. Methane, the key component of natural gas, is a harmful greenhouse gas that traps 80 times more heat than carbon dioxide. By transitioning buildings off natural gas to electricity sourced from renewable energy such as solar and wind, we can reduce methane leakages that occur all along the natural gas system – from extraction to pipeline to our homes and businesses. Berkeley currently requires all-electric new construction and encourages existing buildings to electrify when appliances/systems need replacement or building renovations occur.

See reverse for more information on the benefits of electrification.

How do I electrify my home?

Every gas appliance can be replaced with a modern, energy efficient, all-electric alternative. Appliances that run on all-electric technologies such as heat pumps and induction are cleaner, safer, and higher-performing than their natural gas counterparts. What makes heat pumps unique is that unlike traditional natural gas or electric resistance-powered appliances, which work by generating heat, heat pumps simply move heat from one area to another. This allows them to use energy 3-5x more efficiently than their natural gas counterparts, saving you money, improving indoor air quality, and reducing your carbon footprint.



Hot Water Heating

Switch out your natural gas or electric resistance hot water heater for a Heat Pump Water Heater (HPWH). Homeowners may qualify for BayREN's \$1,000 incentive, as well as other local and federal rebates and credits. (www.bayren.org/residentialhpwh)



Space Heating/Furnace

Air Source Heat Pumps can provide efficient heating and cooling for your home for reliable year-round comfort and energy savings.



Cooktop/Stove/Oven

Natural gas stoves emit harmful pollutants into your home as you cook. Upgrade your gas stove to an Induction Cooktop/Range. Induction cooking uses electromagnetism to heat pots and pans, resulting in faster cook times, less wasted heat, and a safer healthier kitchen.



Clothes Dryer

A Heat Pump Dryer can reduce energy use by at least 28% compared to standard dryers and is gentler on your clothes

For additional information on BESO visit www.cityofberkeley.info/BESO/

BESO Fuel Source Disclosure - 1001 TEST ST

Building Electrification Requirements & Goals:

According to the [California Air Resources Board](#), "Significant GHG emission reductions and improved air quality can be achieved through building decarbonization (i.e. electrification) without compromising functionality or comfort."

- State of California Senate Bill 32: California must reduce statewide greenhouse gas emissions to a level 40 percent below 1990 levels by 2030.
- Fossil Fuel Free Berkeley: In June 2018 the [Berkeley City Council](#) established the goal of becoming a Fossil Fuel Free City, supporting the transition to all-electric buildings.

Resources, Incentives, & Financing:

- Contact a [BayREN Home+ Energy Advisor](#) to get help finding qualified contractors, navigating rebates, learning about financing options, or to get free advice at any stage of your electrification project.
- Visit the [Switch Is On](#) to learn more about how and why you should electrify.
- Find affordable financing at [GoGreen Financing](#), administered by the State of California.
- [BayREN](#) offers incentives for installing highly efficient electric space heating, water heating, clothes drying and induction cooking appliances. These can be stacked with [utility rebates](#) and [federal tax credits](#) to maximize savings.

Electrification Benefits:



Health

Burning gas in household appliances produces harmful indoor air pollution that can increase the risk of, or exacerbate, asthma and other respiratory problems. Without proper ventilation, emissions from gas appliances – such as carbon monoxide – can even be deadly



Comfort

Air source heat pumps provide both heating and cooling, offering comfort during hot days.



Safety

Natural gas is a hazardous and combustible material. Major gas leaks and explosions, such as Alico Canyon and San Bruno, can be devastating and natural gas use in homes is responsible for almost half of residential house fires.



Equity

All-electric new construction can reduce housing costs. For disadvantaged populations who spend a disproportionate amount of their income on energy, and are more likely to suffer from asthma due to poor indoor air quality, all-electric buildings are an opportunity to deliver social benefits.



Resilience

Natural gas lines are a dangerous risk during wildfires or earthquakes. Compared to electricity, the gas system also typically takes much longer to be restored after a disaster-related outage, inspection or repair. When paired with [solar panels and backup batteries](#), electric buildings can have power during grid outages.



Cost Savings

All-electric new buildings are less expensive to build than mixed fuel buildings as they do not require the installation of gas infrastructure such as pipes and venting. When paired with rooftop solar, new and existing all-electric buildings also benefit from reduced operating costs. In the future, gas prices are expected to rise, making all-electric buildings less costly to power.



Smaller Carbon Footprint

In California, buildings are the second largest source of greenhouse gas emissions. As electricity from the grid gets cleaner (moving to 100% carbon-free by 2045), emissions from all-electric buildings will eventually disappear. All-electric buildings that have rooftop solar or purchase 100% renewable electricity are already zero-emission.

For additional information on BESO visit www.cityofberkeley.info/BESO/



2020 BESO Amendment



Align BESO with
**Emissions Reduction
& Resilience Goals**



**Streamline requirements
for small and medium
sized buildings**



Increase **transparency**
in the building sale
process



**Increase upgrades and
participation in
rebate/incentive
programs**



Develop Energy Upgrade Requirements





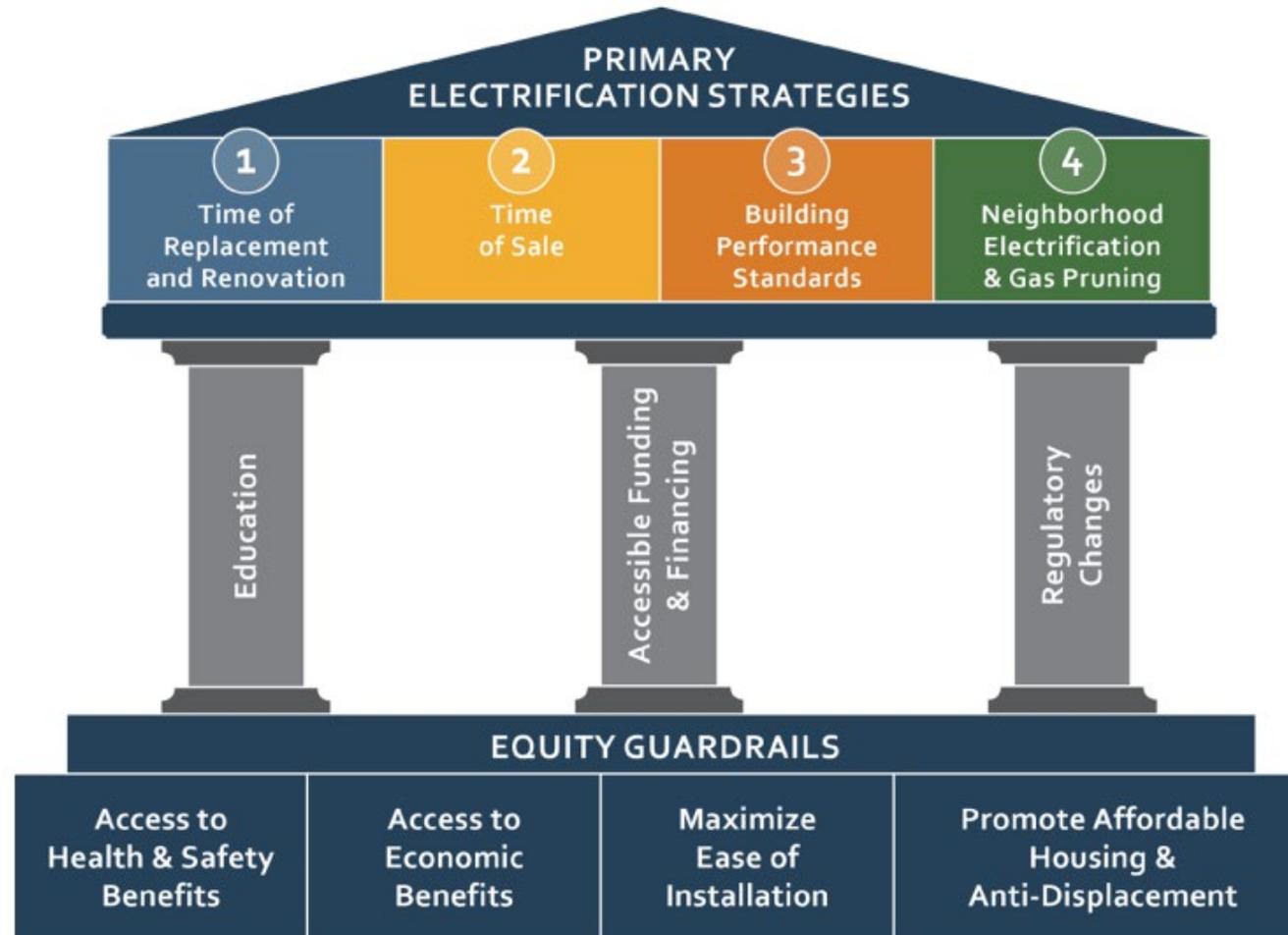
Why do we need requirements?

- Climate Action Plan (2009)
- Fossil Fuel Free City (2018)
- Climate Emergency Declaration (2018)
- 100% Renewable Electricity by 2035 (2018)
- Net Zero Carbon Emissions by 2045 (2018)
- Race to Zero – 60.5% reduction by 2030 (2021)



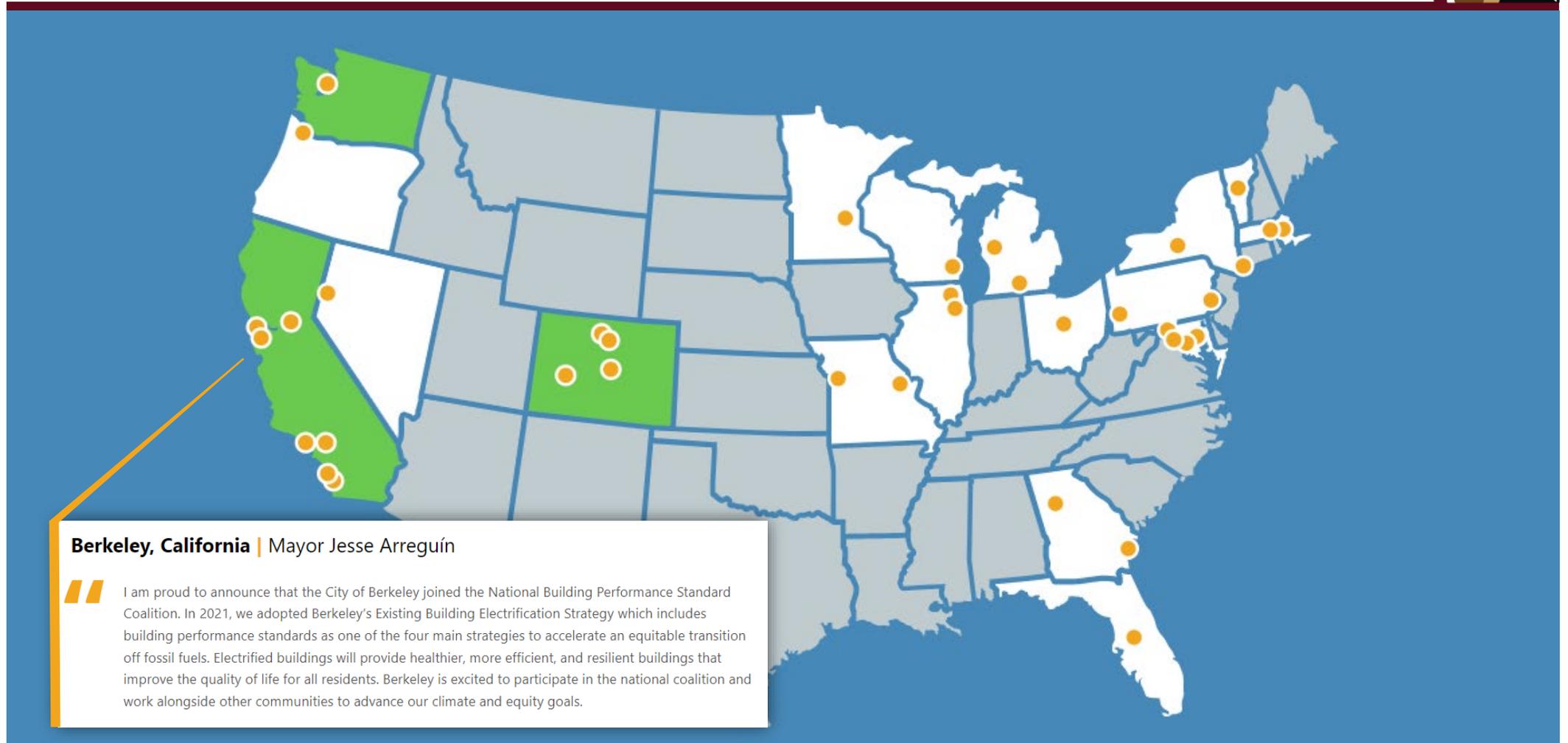


Berkeley's Existing Building Electrification Strategy





National BPS Coalition





Why Time of Listing for Sale?





Annual turnover of single family building stock





Many new homeowners renovate





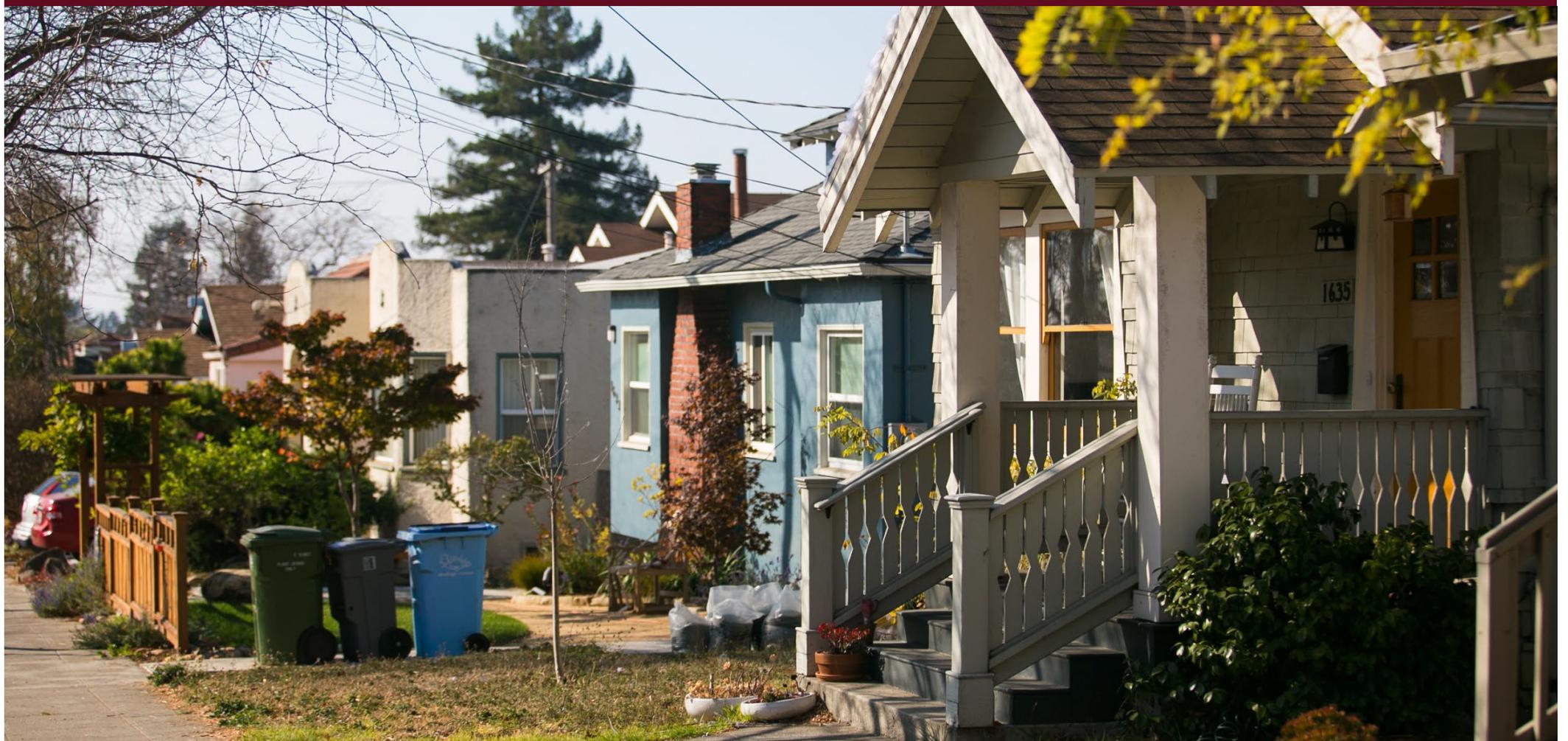
New State and Regional appliance standards



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT



Starting with Single Family buildings





Sales per year

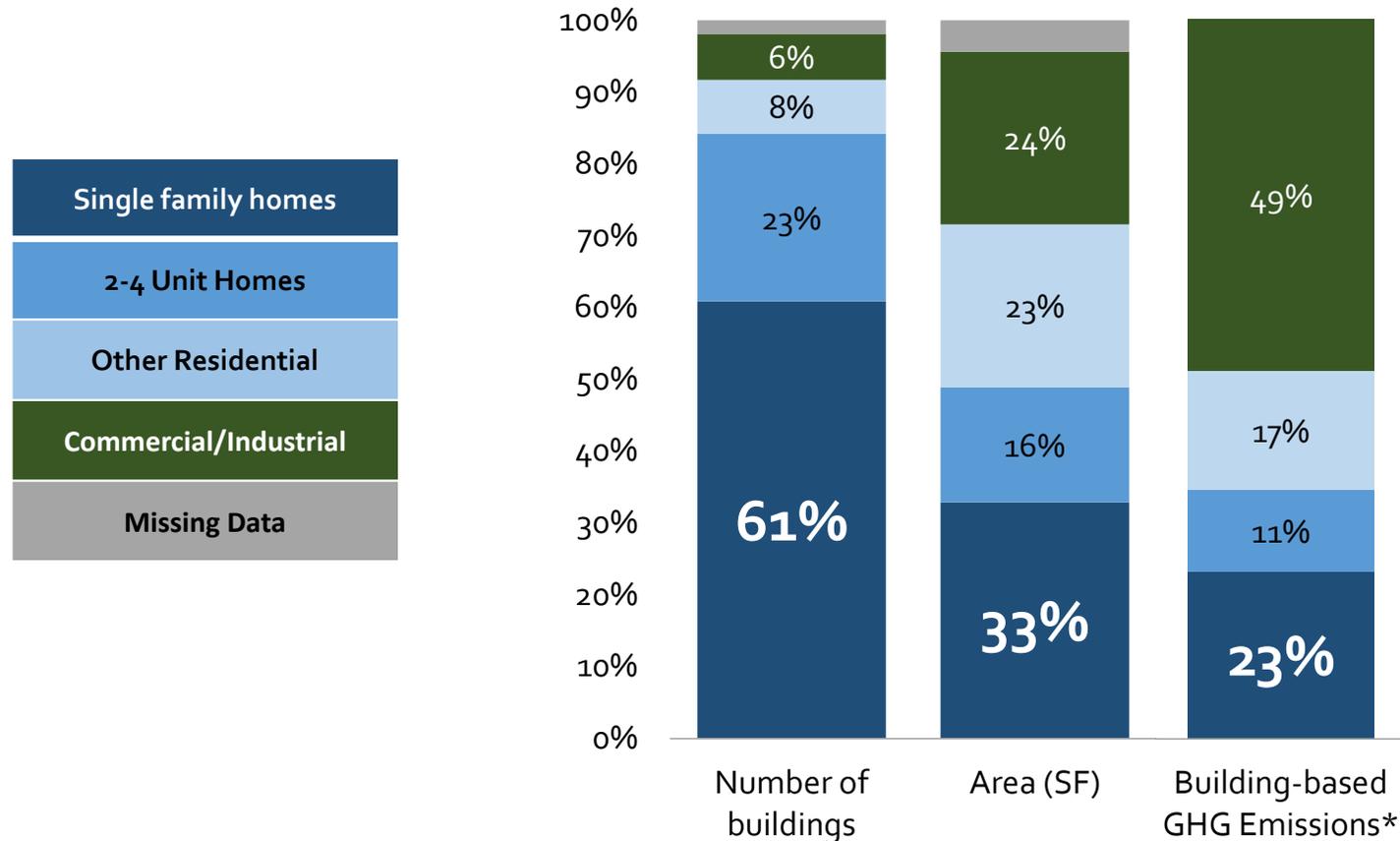


500-600
homes



Emissions from Single Family Homes

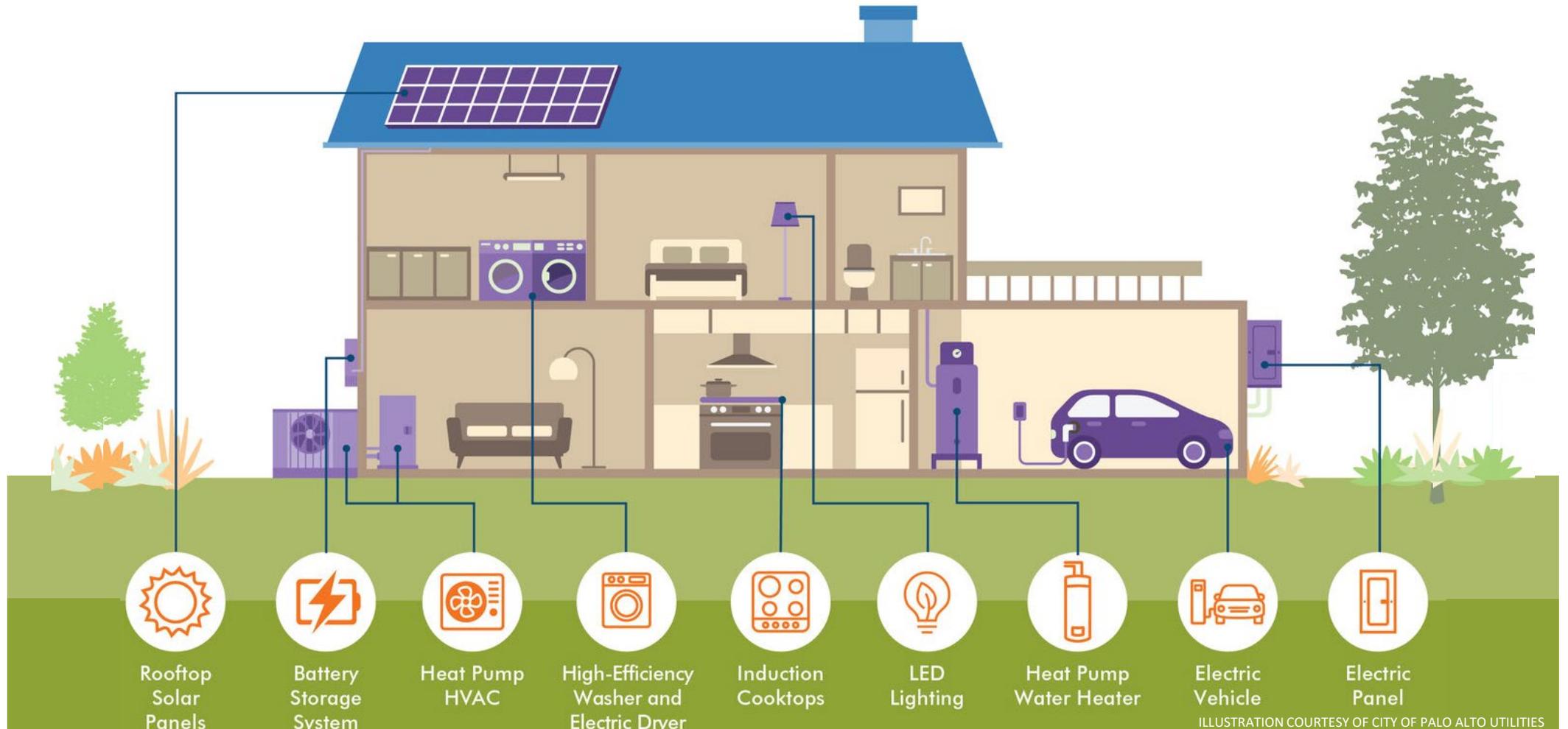
Buildings by Count, Area, and GHG Emissions



*Based on the 2020 GHG Inventory



Single family building electrification





More rebates available for single-family



Inflation Reduction Act Energy Efficient Home Improvement Credit



Administration [Priorities](#)



 <p>Heat Pumps Heat pumps move heat in or out of your home — for year-round comfort and savings in every season.</p> <p>Save \$1,000</p>	 <p>Air Sealing Minimize your home's air leaks to lower heating and cooling costs, increase comfort and create a healthier home.</p> <p>Save \$150</p>	 <p>Heat Pump Water Heater Heat pump water heaters are up to four times more efficient than standard models — and deliver big savings on your energy bill.</p> <p>Save \$1,000</p>
 <p>Insulation Lower your heating and cooling costs with insulation for cozier winters and cooler summers — and big energy savings in every season.</p> <p>Save up to \$1,000</p>	 <p>Heat Pump Dryer By recycling air, heat pump dryers use less electricity —and they're easy to install since they don't require ventilation.</p> <p>Save \$300</p>	 <p>Induction Cooktop Magnetic technology delivers more energy directly into your food than gas or electric stoves — a more efficient way to get fired up.</p> <p>Save \$750</p>



Dedicated team of energy advisors



..... BayREN Home+ Energy Advisor Service

STEP 1: SELECT A SERVICE BELOW

Select service

SELECT ONE: Quick Question Call
15 minutes
Free



SELECT ONE: Energy Advising Call
30 minutes
Free



Development Process and Timeline



Policy Development Timeline

- **Spring 2023:** Work with stakeholders on policy development topics
 - Technical Advisory Committee
 - Realtors
 - Community Advocates
- **Summer 2023:** Draft policy recommendation, outreach to commissions and stakeholders
- **Fall 2023:** Finalize policy recommendation with Council Committees
- **Winter 2023/Spring 2024:** Policy recommendation to City Council



Technical Advisory Committee

- **Members:**

- Building Decarbonization Experts
- BESO Assessors
- Architects
- Electrification Contractors
- Utilities
- Regional and State entities

- **Goals:**

- Establish a single-family energy standard
- Develop compliance pathways and exemptions
- Discuss policy implementation details (e.g. cost caps, upgrade timelines, enforcement, etc.)



Policy Objectives



Policy Objectives



Accelerate building electrification upgrades



Promote early compliance



Align with available resources



Ensure smooth sales process



Provide flexibility in required upgrades



Accelerate building electrification upgrades



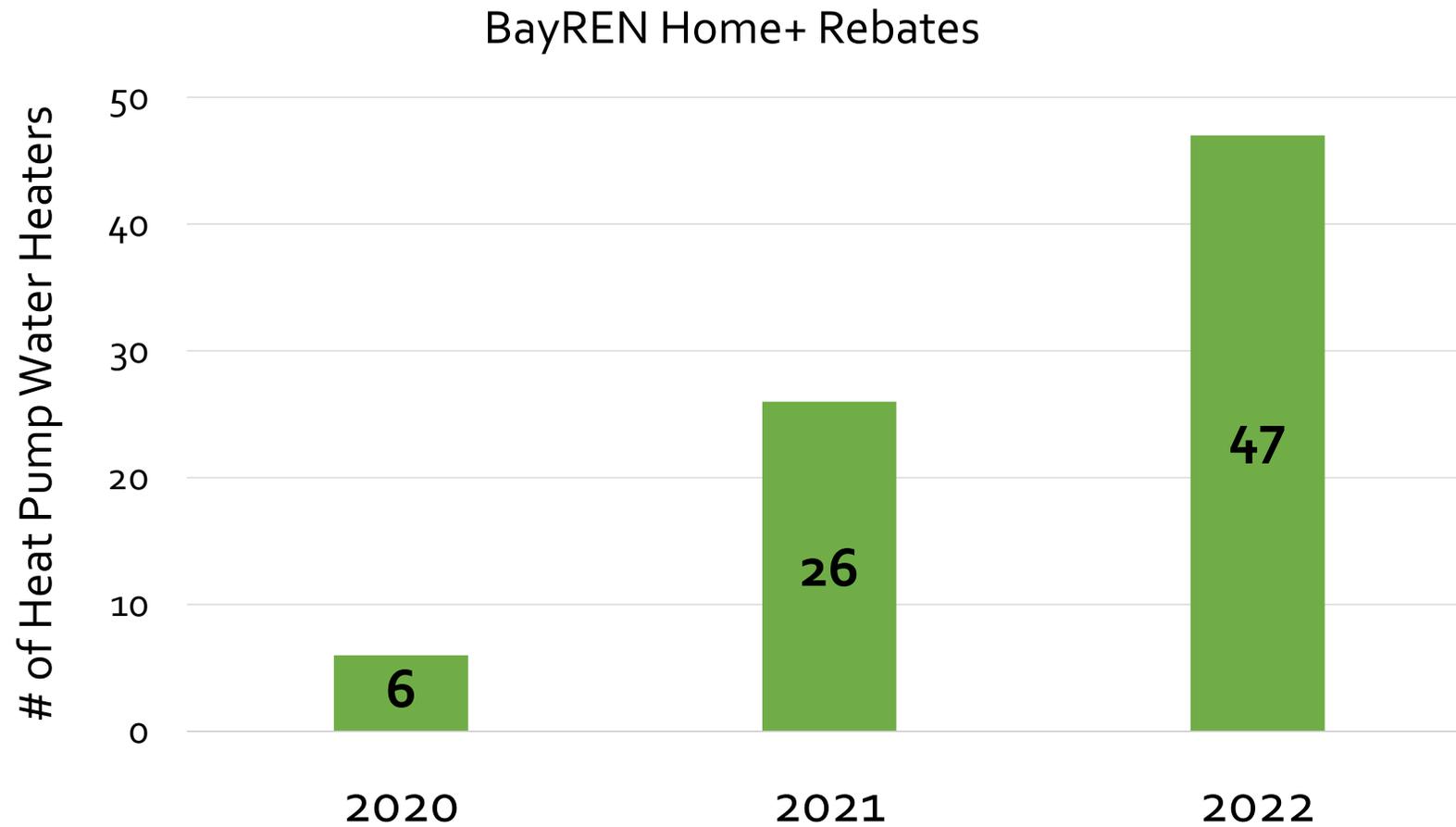


Promote early compliance





Uptake of Heat Pump Water Heaters





\$ Align with available resources



Image by jcomp on Freepik



Ensure smooth sales process





Provide flexibility in required upgrades



Image by rawpixel.com



Choices based on homeowner priorities



Health



Safety



Comfort



Full electrification is costly





Types of Energy Standards - Performance

U.S. DEPARTMENT OF ENERGY
Home Energy Score
Know your home. Know your Score.

THIS HOME'S
HOME ENERGY SCORE
4 out of 10

THIS HOME'S ESTIMATED
ENERGY COSTS
\$2171 per year

Home Energy Score details

higher energy use | 1 | 2 | 3 | **4** | 5 | 6 | 7 | 8 | 9 | 10 | lower energy use

SCORE TODAY: 4

AVERAGE HOME: 5

Official Assessment | ID#412632

Home Energy Score is an easy way to see how energy efficient this home is compared to other homes. A higher score is better. This report also contains ways you can make your home more efficient and more comfortable.

This home's carbon footprint

15 tons/year WORST | 3.8 This Home | 0 tons/year BEST

CALIFORNIA TARGET FOR 2030

HOME PROFILE

LOCATION:
 1116 Oregon St
 Berkeley, CA, 94702

YEAR BUILT:
 1924

HEATED FLOOR AREA:
 1392 sq. ft.

NUMBER OF BEDROOMS:
 3
 510-621-8782

EMAIL:
 energymate.rater@gmail.com

Based on a home's operations

- Home Energy Score
- GHG emissions

Flip over to learn how to improve this score and use less energy.

- Actual energy use and costs may vary based on occupant behavior and other factors.
- Estimated energy costs were calculated based on average utility prices for the nine Bay Area Counties (\$0.204/kwh for electricity; \$1.51/therm for natural gas; \$3.00/gal for propane; \$2.25/gal for fuel oil).
- Carbon footprint is based only on estimated home energy use. Carbon emissions are estimated based on utility and fuel-specific emissions factors provided by the California Public Utilities Commission.
- Your carbon footprint may be lower if you get your electricity through a Community Choice Energy (CCE) provider. For more information visit Cal-CCA.org.



Types of Energy Standards - Prescriptive

ELECTRIFICATION CHECKLIST

Address: _____ City: _____

Space Heating & Cooling

1. Identify all existing space heating equipment and distribution methods.

DUCTED	<input type="checkbox"/> Central gas furnace	<input type="checkbox"/> Electric furnace
	<input type="checkbox"/> Propane/LPG central furnace	<input type="checkbox"/> Electric heat pump (ducted air-source)
	<input type="checkbox"/> Oil furnace	<input type="checkbox"/> Ground coupled heat pump (ducted, water-to-air)
HOT WATER	<input type="checkbox"/> Gas boiler	<input type="checkbox"/> Electric boiler
	<input type="checkbox"/> Propane/LPG boiler	<input type="checkbox"/> Ground coupled heat pump (water-to-water/-refrigerant)
DIRECT	<input type="checkbox"/> Electric baseboard heater	<input type="checkbox"/> Room (through-the-wall) gas furnace
	<input type="checkbox"/> Wood stove	<input type="checkbox"/> Mini-split (ductless) heat pump (electric air-source)
	<input type="checkbox"/> Pellet stove	
NONE	<input type="checkbox"/> No space heating (skip questions 2 and 5)	

2. Is the primary space heating system 10 years or older? Yes No Unknown

Water Heater

1. Is the existing domestic hot water system a heat pump water heater? Yes (skip the rest of this section) No

2. Is there an electrical outlet within 3 ft of the water heater? Yes No Unknown

3. Where is the water heater?

Indoors: Outdoors (skip the rest of this section)

Basement Living space

Garage Interior closet

Attic Interior other (specify): _____

4. Is the water heater location space conditioned? Yes (conditioned) No (unconditioned)

5. What are the room or closet dimensions? Round down to the nearest foot.
 _____ ft wide x _____ ft deep x _____ ft high = _____ cubic ft

6. Check all that apply regarding water heater location:

Has louvered door, wall vent to exterior, or other non-mechanical ventilation

Has mechanical ventilation (heating/cooling)

Adjacent to exterior wall

Version Date: March 25, 2022 Page 1 of 2



Based on the home's existing conditions and systems

- HVAC and water heater
- Induction stoves and electric dryers
- Electric readiness
 - 240v outlets near major systems
 - Panel and service capacity
 - Electrical wiring (e.g. knob and tube)

Discussion



Guiding Questions

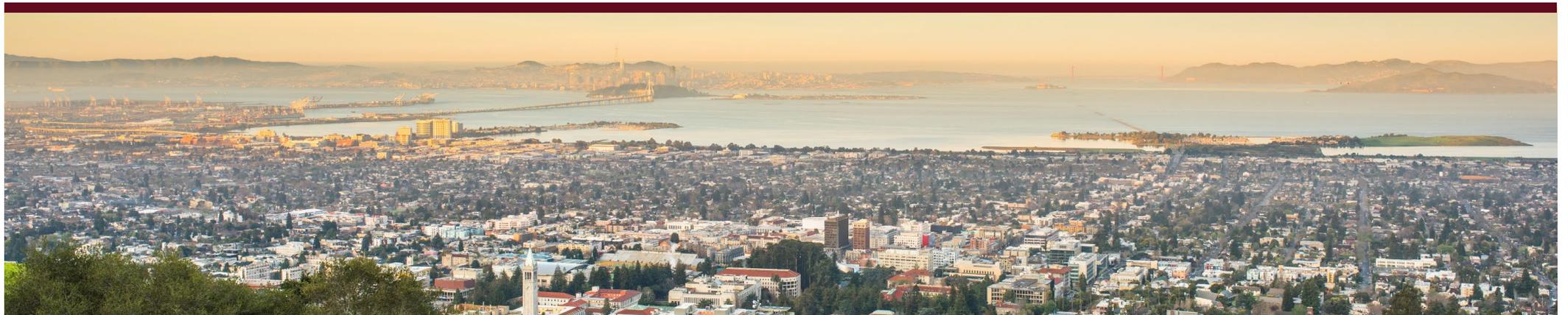
- Considerations on the type of energy standard?
- What possible compliance paths should we consider?
- What types of exemptions and deferrals should we consider?
- How should equity be addressed?



Thank You!

Ammon Reagan

Sustainability Program Coordinator
Office of Energy and Sustainable
Development
AREagan@CityofBerkeley.info



INFORMATION CALENDAR
[Meeting Date (Month Day, yyyy)]

To: Honorable Mayor and Members of the City Council
From: Environment and Climate Commission (ECC)
Submitted by: Ben Gould, Chairperson, ECC
Subject: Environment and Climate Commission 2023 Work Plan

INTRODUCTION

The Environment and Climate Commission (ECC) is responsible for advising the City Council on matters related to environmental sustainability and climate change. The commission's scope includes work to advance the goals of: advancing green buildings and resource efficiency; decarbonizing buildings and transportation; engaging and educating the community; addressing the impacts and welfare of all species, including animals, insects, and plants; reducing greenhouse gas emissions; reducing toxics and preventing pollution; and supporting environmental justice. The commission works closely with the Office of Energy & Sustainable Development (OESD).

First established in 2022, ECC was formed by merging the Community Environmental Advisory Commission (CEAC) and the Energy Commission (EC). ECC commissioners bring a wide range of expertise, with backgrounds in government, academia, nonprofit, and private sector environmental work. These backgrounds inform ECC's work and help it to consider diverse and equitable approaches to addressing the City's environmental challenges.

This work plan is intended to provide a guide to the work ECC plans to take on in 2022. As additional items or issues arise, or are referred to the Commission from Council, ECC will adjust this plan accordingly.

SUMMARY *[This section, included only if report exceeds three pages, replaces the introductory paragraph described above.]*

CURRENT SITUATION AND ITS EFFECTS

The ECC has a broad scope and a responsibility to support and work closely with Office of Energy and Sustainable Development staff. The following projects are the current efforts underway by the ECC:

Project	Status	Description
Transportation Public Space Re-allocation & VMT Targets	In Committee	Re-allocate public street space away from auto-centric uses towards pedestrians, bicyclists, and buses, even more than currently envisioned in the bicycle and pedestrian master plans. Consider setting specific, measurable VMT reduction targets and identify and implement strategies to achieve them.
Zoning Changes to Encourage EV Charging / Discourage Gas Stations	In Committee	Considering zoning changes to remove gas stations as permitted use, encourage alternative uses focused on current gas station sites, and/or encourage EV charging.
Banning gas-powered delivery vehicles / encouraging cargo bike deliveries	In Committee	Considering proposal to phase out gas-powered delivery vehicles and/or encourage e-bike deliveries to & by businesses.
Native Plants and Pest Reduction	In Committee	Identify opportunities & strategies to support native plants & avoid pesticides.
OESD input & support	Ongoing	Support OSED staff with feedback on programs, standards, and other initiatives, including BESO, BEBES, Climate Equity Fund, Climate Action planning, etc.

POSSIBLE FUTURE ACTION

ECC is considering the following potential additional efforts:

Project	Status	Description
Green New Deal policies	Conceptual	Develop & support Green New Deal policies for Berkeley.
Electrification Information Campaign	Conceptual	Making it easier for homeowners & renters who are interested in electrification (building + vehicle) to get information & be excited. Give people positive feelings about induction & electrification. Create checklist / resources / what

		you might do / should think about for people who are not doing major remodel or buying home, etc. Support renters with feasible, affordable technologies.
Expanded OESD Support – events	Conceptual	Provide additional support at public events where OESD is staffing tables or otherwise engaging with the public.
Resiliency centers / hubs & renewable-powered warming centers	Conceptual	Explore feasibility of resiliency centers / hubs & renewable-powered warming centers.
Water conservation, recycling, & reuse; stormwater management	Conceptual	Explore opportunities for policies & initiatives around water conservation, recycling, & reuse; stormwater management.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

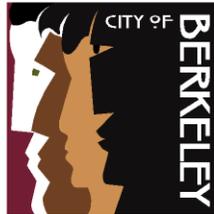
ECC’s initiatives will improve environmental sustainability, reduce greenhouse gas emissions, and support a just transition.

FISCAL IMPACTS OF POSSIBLE FUTURE ACTION

Future action items that ECC may send to City Council could require staff time to develop, finalize, and/or implement. ECC strives to ensure proposals provide significant net triple bottom line benefits to the City when evaluating total costs and benefits across environmental, social, and economic impacts.

CONTACT PERSON

Ben Gould, Chair, Environment and Climate Commission, 510-725-9176



Environment and Climate Commission

INFORMATION CALENDAR
[Meeting Date (Month Day, yyyy)]

To: Honorable Mayor and Members of the City Council
From: Environment and Climate Commission (ECC)
Submitted by: Ben Gould, Chairperson, ECC
Subject: Letter of Support for Hopkins St. Corridor Complete Streets Project

Dear Honorable Mayor and Members of the City Council,

The Environment and Climate Commission (ECC) strongly urges City Council to approve the full Hopkins Corridor Complete Streets project, including the Gilman to Kains segment (“Option 3”), rejecting any bypass or partial implementation.

Currently, City Council is considering whether to alter already-approved plans for bike lanes on Hopkins St. between Gilman and Sutter, and additionally deliberating on whether to extend those bike lanes to San Pablo Ave. The ECC believes the Hopkins bike lanes should be implemented to the fullest extent.

Automobile traffic is the single largest source of greenhouse gas emissions in Berkeley¹ and across the United States². As shown in the latest update to Berkeley’s Greenhouse Gas (GHG) Inventory, Berkeley has made little to no progress in reducing emissions from transportation citywide. Existing efforts to implement minor, modest adjustments to streets have proven insufficient in achieving substantive GHG reductions.

There is significant evidence that protected bike lanes are a cost-efficient, and potentially quick, way to reduce emissions within an urban area^{3,4,5}. Cities which have implemented comprehensive, complete, safe bicycle infrastructure – oftentimes reducing the convenience of driving in doing so – have been able to observe significant and lasting reductions in automobile usage, including places like Paris and Amsterdam.

¹ “City of Berkeley Climate Action Plan” <https://berkeleyca.gov/your-government/our-work/adopted-plans/berkeley-climate-action-plan>

² “Inventory of US Greenhouse Gas Emissions and Sinks” <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>

³ “Protected Bike Lanes Protect the Climate” <https://www.itdp.org/publication/protected-bicycle-lanes-protect-the-climate/>

⁴ “Cars Are Vanishing from Paris” <https://reasonstobecheerful.world/cars-are-vanishing-from-paris/>

⁵ “Now Is the Time to Invest in Protected Bike Lanes” <https://speedandscale.com/now-is-the-time-to-invest-in-protected-bike-lanes/>

ECC Letter on Hopkins Bike Lanes

INFORMATION CALENDAR

Berkeley's approved Hopkins St. plans are aligned with these global best practices and a necessary component of building out a citywide safe bicycle network for all ages and abilities, as set forth in the Berkeley Bicycle Plan. By ensuring continuity and access for bicyclists to safely travel to, and from, all areas of Berkeley, we can help shift more residents to these active modes of travel, reducing air pollution, water pollution, traffic noise, congestion, and collisions.

We do not believe half-measures or partial implementations will bring about these needed effects, and urge the Council to reaffirm its existing commitment to safe bike lanes on Hopkins and approve Option 3 to extend them fully to San Pablo Ave.

Sincerely,

Ben Gould, Chair
Environment and Climate Commission