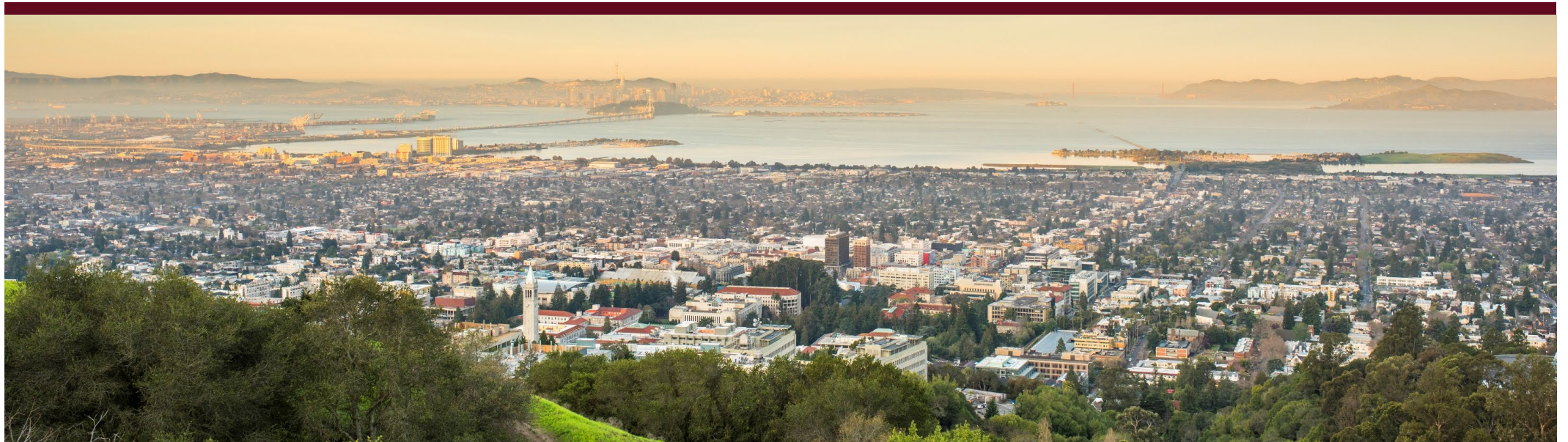




Building Emissions Saving Ordinance (BESO)

Energy Upgrade Requirements

June 21, 2023





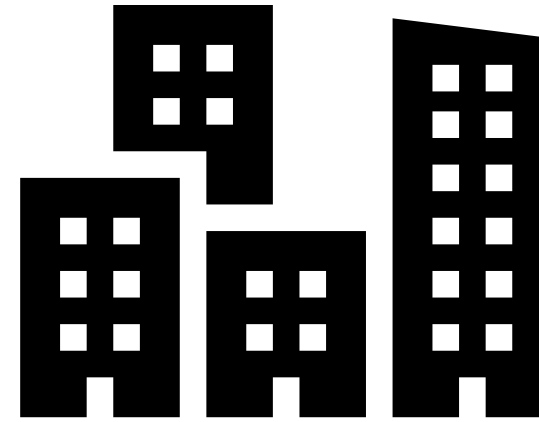
Building Emissions Saving Ordinance

Time of Sale Program



Buildings **less** than
25,000 sqft

Large Building Program



Buildings **greater** than
25,000 sqft



BESO - Time of Sale Program

- Requires an **energy/electrification assessment** prior to listing a building for sale.
 - Home Energy Score for Single family homes
 - Provides information to potential buyers
- Refers building owners into local incentive programs to complete voluntary upgrades





Policy Objectives



Accelerate building electrification upgrades



Promote early compliance



Align with available resources



Ensure smooth sales process



Provide flexibility in required upgrades



Policy Development Timeline

- **Spring 2023:** Work with stakeholders on policy development topics
 - Technical Advisory Committee
 - Realtors
 - Community
 - Environment and Climate Commission
- **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 (TAC)

- **Members:**

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

- **Goals:**

- Provide input on energy upgrade requirements
- Develop compliance pathways and exemptions
- Discuss policy implementation details (e.g. cost caps, timelines, enforcement, etc.)





TAC Meetings

1

- General Overview
- Policy Goals

2

- Requirements
- Alternative Measures
- 2-4 Unit Buildings/ADUs

3

- Deferrals/Exemptions
- Enforcement
- Complementary Programs and Support

Potential Upgrade Requirements



Zero-Emission Appliance Rule

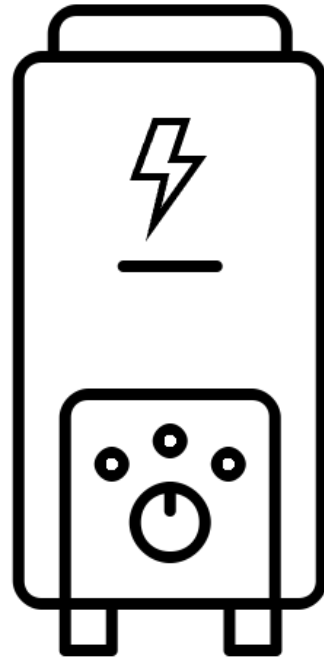
- Bans the sale and installation of new gas water heaters and furnaces
- **2027** - New water heaters rated less than 75,000 BTU/hr
- **2029** - New natural gas-fired furnaces
- **2031** – New large natural gas boilers, storage tank water heaters, or instantaneous water heaters less than 2,000,000 BTU/hr



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

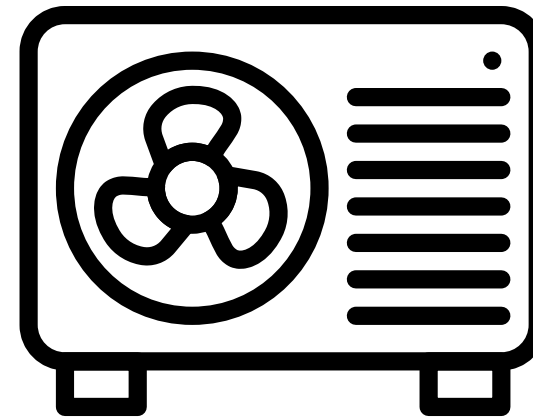


Potential Requirement – Heat Pump System*



Water Heating

OR



Space Heating/HVAC

*Alternative options available



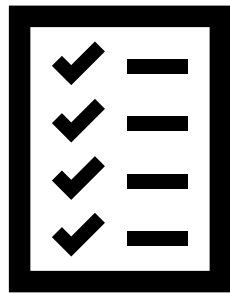
Potential Requirement – Rationale

- Consistent with local goals and BAAQMD
- Direct GHG savings
- Easy/Straightforward
- Promotes early adoption
- Provides electrification benefits
- Benefits the buyer





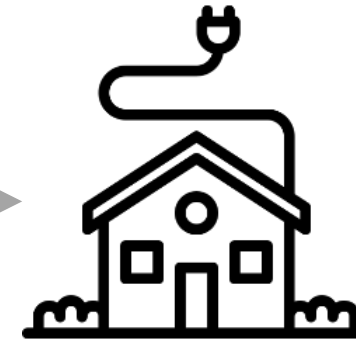
Example: Home *has* a heat pump



Seller completes
verification
assessment



Home listed for
sale



Assessment provides
next steps for full
electrification



Example: Home *doesn't* have a heat pump





Alternative upgrade measures

Electric Ready

- Pre-wiring & 240v outlets
- **Panel upgrade**

Electrification

- Heat Pump Water Heater
- Heat Pump HVAC
- EV Charging Station
- **Induction Stove**
- ~~Heat Pump Dryer~~

Removed by 50% of the groups
~~Removed by 75% of the groups~~

Energy Efficiency

- Attic Insulation
- Wall Insulation
- Floor Insulation/Crawlspace Improvement
- Air Sealing (Verified)
- Window replacements
- **Duct Sealing/Replacement (Verified)**

Resilience/Safety

- Solar PV Installation
- Battery storage installation
- **Replace knob and tube**
- ~~Automatic gas shutoff valve~~



Point based alternative compliance

- **Potential weighting criteria:**

- GHG Savings
- Cost
- Health, safety, equity benefits
- Electrification readiness

- **Rationale:**

- Addresses range of building conditions
- Buyer's are able to prioritize
- Greater impact

Table 1A: Target Score

Single Family Units - Climate Zone 3	Building Vintage		
	Pre-1978	1978-1991	1992-2010
Target Score	14	8	6

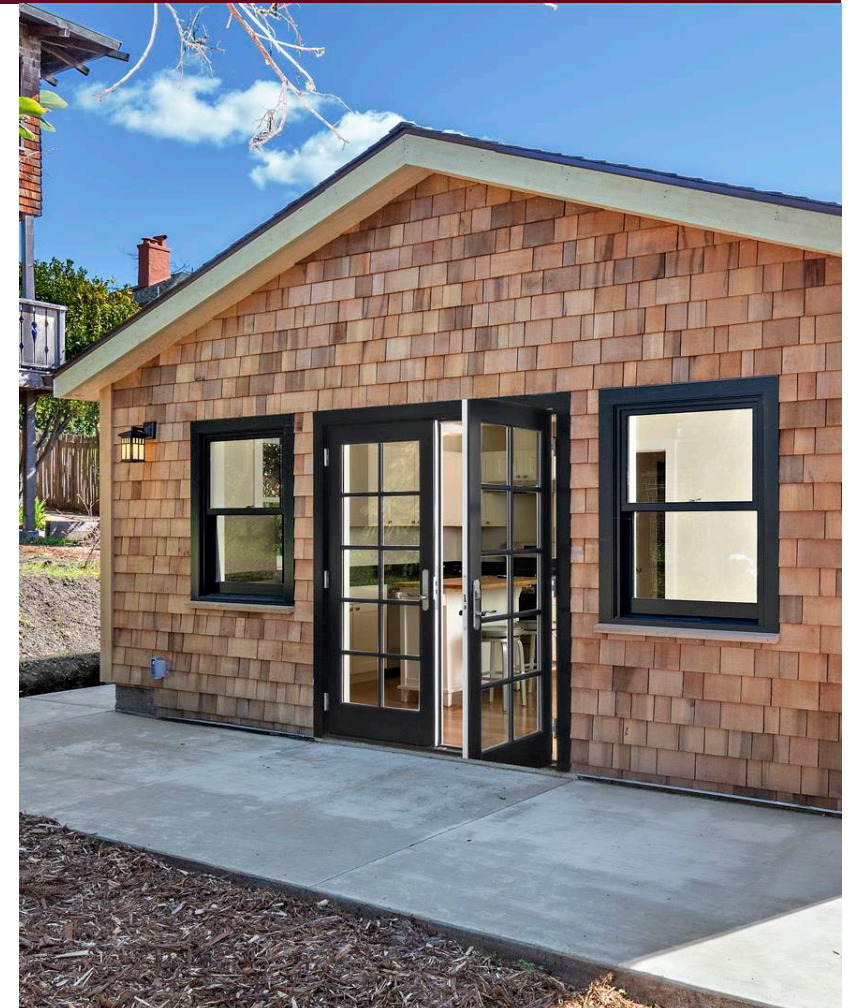
Table 1B: Measure Menu

Single Family Units - Climate Zone 3	Building Vintage		
	Pre-1978	1978-1991	1992-2010
LED + Exterior Photosensor	Mandatory	Mandatory	Mandatory
Water Heating Package	1	1	1
R-49 Attic Insulation	1	2	1
Air Sealing	1	1	1
Duct Sealing	3	2	--
New Ducts + Duct Sealing	6	4	2
Windows	3	3	--
R-13 Wall Insulation	5	--	--
HVAC Heat Pump	16	11	10
High Eff HVAC Heat Pump	17	12	11
HPWH	12	12	12
High Eff HPWH	13	13	13
Induction Cooktop	1	1	1
Heat Pump Clothes Dryer	1	1	1
PV + Battery	11	11	11
PV	12	12	12
PV + Electric Ready Pre-Wire	12	12	12
PV (points per KW)	5	5	5



Covered Building Phase-in

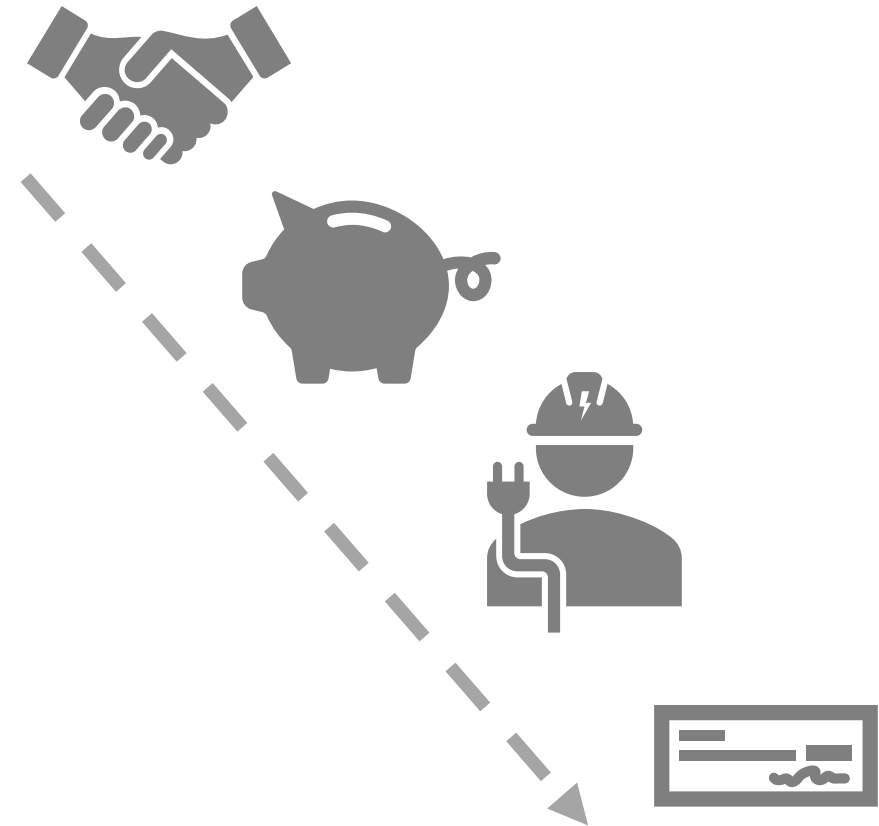
- **Phase 1: Single-family, ADUs, Duplexes**
 - Expected implementation in 2025
 - Likely to be owner-occupied
 - Bulk of sales
 - Addresses attached/detached ADUs
- **Phase 2: 3-4 Units**
 - Expected implementation in ~2027/2028
 - Use lessons learned from Phase 1
 - Likely to be rental properties
 - Complex/shared systems
 - Need to develop additional support systems





Enforcement - Require Escrow Deposit

- **Escrow deposit:**
 - Buyer/seller negotiated
 - Ensures compliance
 - Forfeited funds can support low-income electrification programs
- **Private Sewer Lateral program:**
 - If compliance requirements not met, 6-month extensions can be requested
 - \$4,500 deposit is sent from escrow to the City
 - Refunded once work has been completed





Potential Exemptions/Support

- **Exemptions:**
 - **All-electric homes** with permits showing capped gas line
 - **Refinances** and **partial transfers**
 - Participation in income qualified **First Time Home Buying** Program
- **Support:**
 - **Assessment support** for income qualified sellers





Questions and Feedback





Proposed Policy Components

- **Covered Buildings:**

- Phase 1: SFH, Duplexes, ADUs
- Phase 2: 3-4 Units

- **Requirement:**

- One heat pump system

- **Compliance Pathways:**

- HEScore & Heat Pump Verification
- HEScore & Point based upgrade requirements

- **Buyer vs Seller Responsibilities:**

- Seller: Assessment
- Buyer: Complete an upgrade (*if no heat pump*)

- **Enforcement:**

- Utilize escrow bond/deposit process
- Forfeited funds support low-income electrification program

- **Exemptions:**

- All-electric homes
- Refinances and partial transfers
- Income qualified First Time Home Buying Program



Thank You!

Ammon Reagan

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