



Context

Proposed Ordinance: All-Electric Buildings for New Construction

The proposed ordinance will update the San Francisco building code to require all new building permits submitted to the Department of Building Inspection (DBI) after January 1, 2021 be all-electric. All-electric buildings exclusively use electricity for power and do not contain any natural gas piping, fixtures, or infrastructure for air conditioning, heating, water heating, cooking appliances, and clothes drying appliances.

The goals of the ordinance are to increase building safety, improve indoor air quality, and reduce San Francisco's greenhouse gas (GHG) emissions. There is an exception process in the event that a project sponsor demonstrates it is infeasible to build all-electric. In the policy brief for the proposed ordinance, improved indoor air quality was identified as an equity and health benefit.¹ This analysis identifies additional racial equity concerns and recommendations, on the premise that if a policy is not intentionally designed to advance racial equity, then it is unlikely to do so.

Racial Disparities in San Francisco

Across every social indicator, when data is disaggregated by race, the legacy of more than 200 years of racially discriminatory government policies is evident in San Francisco. Racial disparities can be measured in unemployment, health, household income, housing and displacement, criminal justice, police violence, homelessness, education, and composition of the City and County of San Francisco's workforce.² Climate change exacerbates these disparities. People of color and lower income populations are least responsible for, yet most vulnerable to the impacts of climate change.

Racial Equity Analysis

As part of its Racial Equity Initiative, the San Francisco Department of Environment (SFE) will evaluate and provide recommendations for legislation to better advance racial equity. The process with which these recommendations will be communicated to stakeholders and policy makers is still under development. SFE's final process will follow the Office of Racial Equity's policy analysis tool, which is being developed for Board of Supervisors legislation.

For the proposed ordinance, *All-Electric Buildings for New Construction*, SFE racial equity staff identified five areas of analysis and short- and long-term recommendations to address concerns. Long-term recommendations require collaboration with other departments and outside entities and funding; several long-term recommendations make sense at a larger scale, beyond the proposed ordinance alone.

¹ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_policy_brief.pdf

² <https://sfgov.legistar.com/View.ashx?M=F&ID=7586870&GUID=9E0222B9-7A4D-4082-8CCE-3F397520FC82>



Summary Table: Equity Analysis and Recommendations

Analysis	Description	Recommendations to Advance Racial Equity
<p>1) Energy Cost Burdens for Tenants</p>	<p>Higher utility bills disproportionately burden lower income populations. While information was provided about projected savings for lifetime of the building, utility cost comparison (electric vs mixed fuel) for tenants for short term was not provided.</p>	<ul style="list-style-type: none"> • <u>Short-term</u>: Conduct post-occupancy evaluation of utility costs for tenants and compile best practices to better understand any impacts and reduce costs in general. • <u>Long-term</u>: Work with utility regulators and providers to facilitate equitable rate structures. Develop educational materials for tenants about peak electricity pricing and opportunities to reduce energy costs. Subsidies, incentives, and/or other financial assistance could be expanded for energy efficiency, solar, and/or other technologies to ensure affordability for lower income tenants.
<p>2) Affordable Housing</p>	<p>Housing unaffordability disproportionately harms people of color. It is important to ensure all-electric construction continues to support affordable housing.</p>	<ul style="list-style-type: none"> • <u>Short-term</u>: Focus outreach and technical assistance to affordable housing developers who are unfamiliar or inexperienced with building electrification. • <u>Long-term</u>: Feedback mechanism is needed to understand impacts of the all-electric ordinance.
<p>3) Workforce Considerations</p>	<p>There is significant income inequality by race. Historically the green building industry has not been racially diverse. Jobs in building electrification will not solve all income inequality but can contribute toward closing the gap if they are designed to do so.</p>	<ul style="list-style-type: none"> • <u>Short-term</u>: Focus outreach and technical assistance to Black, Indigenous, and People of Color (BIPOC)-owned businesses and racial/ethnic affinity professional organizations to increase competitive advantage. • <u>Long-term</u>: Workforce training targeting BIPOC and people with barriers to employment is needed. Incentives and/or requirements to hire graduates of the training and to direct work to BIPOC-owned businesses are needed. Partnerships between SFE and workforce development agencies and non-profits need to be established to support this long-term vision.
<p>4) Restaurants</p>	<p>Cooking on an open gas flame impacts some cultural cooking. Electric appliances have cost and training implications.</p>	<ul style="list-style-type: none"> • <u>Short-term</u>: Gather feedback to better understand impacts to cultural cooking and cost impacts to new restaurants. • <u>Long-term</u>: Partner with training providers to build familiarity with and gather feedback on cultural cooking on electric appliances.



<p>5) Funding</p>	<p>Resources are needed to further advance racial equity in all-electric buildings, and to ensure a just transition for workers.</p>	<p><u>Long-term</u>: Create a funding stream using the climate justice principle where the largest polluter pays for the transition, such as a fee for large existing commercial buildings.</p>
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#1: Energy Cost Burdens for Tenants

The policy brief for the proposed ordinance³ references studies on certain building types—single family homes, low- and medium-rise residential, office, retail—that indicate a financial benefit over the lifetime (30 years) of the all-electric building. This projected financial benefit is applicable to building owners. However, not all tenants pay for building-wide operational costs and most will likely not live in the building for the duration of its lifetime. While early adopters of all-electric building with solar PV expect lower utility bills than for a typical multifamily building,⁴ there is no research about utility costs for tenants and variability by building type. Tenants are subject to volatility in energy markets, and spikes may be felt more acutely in single fuel systems. The retail price of gas for California residents has historically been more volatile over time than electricity. California's gas utilities, including PG&E, have proposed and/or received approval to increase gas rates faster than electric rates 2019-2025.⁵ Higher utility bills disproportionately burden lower income tenants.

Recommendations to Advance Racial Equity

- Short-term: SFE could conduct post-occupancy evaluation of monthly costs to investigate potential burdens, monitor utility cost, and compile best practices for reducing utility costs for tenants in general.
- Long-term: SFE could work with utility regulators and providers to facilitate equitable and affordable rate structures, and work with tenant organizations to develop educational materials about peak electricity pricing and opportunities to reduce energy costs. SFE, in partnership with stakeholders like the SFPUC and PG&E, which are more directly involved in these areas, should monitor policy opportunities that provide subsidies, incentives, and/or other financial assistance that could be expanded for energy efficiency, solar, and/or other technologies to ensure affordability for lower income tenants.

#2: Affordable Housing

The policy brief for the proposed ordinance⁶ indicates that low- and medium-rise residential, among other building types, will benefit from lower construction cost through the elimination of natural gas infrastructure and lifetime savings that include both cost reductions in building operations and societal cost from building all-electric construction. The ordinance development process engaged over 40 different affordable housing professionals, along with the Mayor’s Office of Housing and Community Development (MOHCD), and it was generally agreed that electric buildings are affordable and reliable and provide good solutions for both tenants and developers. There was not an expressed need for special exceptions for affordable housing, including a financial exemption. Early adopters of all-electric building have found it to be cost neutral at a minimum in multifamily affordable housing.⁷ While all-electric affordable housing developments are currently being built in San Francisco at a lower cost than equivalent mixed-fuel buildings, it’s

³ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_policy_brief.pdf

⁴ <https://developingresilience.uli.org/case/maceo-may/>

⁵ https://www.ethree.com/wp-content/uploads/2019/04/E3_Residential_Building_Electrification_in_California_April_2019.pdf

⁶ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_policy_brief.pdf

⁷ <https://developingresilience.uli.org/case/maceo-may/>

important to note that examples of all-electric buildings in San Francisco are limited and some developers may lack expertise in all-electric building design.

A variety of circumstances and factors affect San Francisco’s ability to produce a sufficient supply of affordable housing. Construction costs are one such factor: in 2019 San Francisco was found to have the highest construction costs in the world.⁸ Construction costs themselves are affected by a variety of factors, including increased project costs due to additional required design work,⁹ and a “lack of competition from subcontractors, especially in specialized trades (electrical, plumbing, etc.), is driving up bids for new development projects.”¹⁰ While these factors are independent of a fuel switch requirement, it is important that fuel switching does not contribute to the affordable housing shortage in any way. Any impediments to producing affordable housing will burden all of San Francisco, and in particular people who are unhoused, housing cost burdened, and/or at risk of displacement—all three of which are experienced disproportionately by Black populations and People of Color.¹¹ Thus far, the evidence is showing that all-electric affordable housing developments are lowering construction costs for affordable units, and as such, might lower costs for the affordable housing construction industry in San Francisco.

Recommendations to Advance Racial Equity

- **Short-term:** SFE, along with departments responsible for affordable housing production, should focus outreach and technical assistance to affordable housing developers who are unfamiliar and/or inexperienced with all-electric construction. SFE racial equity staff can compile a list of potential stakeholders to provide assistance for this effort. SFE will develop a fact sheet to connect affordable housing developers to resources, such as incentives available through the Building Initiative for Low Emissions Development (BUILD) program.
- **Long-term:** SFE in conjunction with relevant city agencies and partners could continue to facilitate feedback mechanisms (e.g., a survey or listening session) to hear from affordable housing developers about obstacles, lessons learned, and changes in construction and operational costs in all-electric buildings. It may be prudent for the feedback gathering process to include broader building requirements, not only the all-electric new construction requirement. This process could also be an opportunity for an exchange of best practices.

#3: Workforce Considerations

A statewide analysis of the employment impacts of building electrification for new construction calculated a small decrease in jobs statewide. This study assumes that all-electric new residential construction is less expensive than gas-dependent construction due, in part, to avoiding the cost of natural gas piping associated with the service and meter connection. These avoided costs translate to reduced labor requirements. In the commercial and mixed-use sector, the cost difference between mixed-fuel and all-electric buildings is so minor that the study does not project a net change in employment for commercial new construction.¹² On a local level, no net impact on new construction jobs is expected. New buildings need hot water, heating, cooling, cooking, and clothes drying regardless of the energy source used (i.e., construction activity to install new plumbing, ductwork, and appliances). This was confirmed by labor representatives during the stakeholder engagement process. Electricians, green building professionals, and others involved in all-electric

⁸ International Construction Market Survey (2019). Turner and Townsend

⁹ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_workgroup_notes_1.pdf

¹⁰ p. 27 https://default.sfplanning.org/publications_reports/Housing_Affordability_Strategies_Report.pdf

¹¹ https://default.sfplanning.org/publications_reports/Housing-Needs-and-Trends-Report-2018.pdf;

<https://sfgov.legistar.com/View.ashx?M=F&ID=7586870&GUID=9E0222B9-7A4D-4082-8CCE-3F397520FC82>

¹² https://innovation.luskin.ucla.edu/wp-content/uploads/2019/11/California_Building_Decarbonization.pdf

building design and construction could benefit from this proposed ordinance if work opportunities increase. Since all-electric buildings are new, there is a potential learning curve for workers. Stakeholders expressed the importance of companion workforce training and development to the ordinance.¹³

Historically, the green building industry and building trades lack diversity and are disproportionately white. The demand for skilled electrification professionals could continue to benefit the white population and leave out BIPOC. In 2018, American Indian and Black San Franciscans were more than three times more likely to be unemployed than Whites and unemployment rates were similarly high for Native Hawaiian / Pacific Islanders and Latinxs. Job inequality in San Francisco contributes to income and wealth inequality by race. Additionally, fossil fuel jobs have provided workers better pay, benefits, and longevity than green jobs.¹⁴ To ensure a just and equitable transition into the new green economy, structures need to be put in place to foster workforce opportunities for BIPOC.

Recommendations to Advance Racial Equity

- **Short-term:** SFE should focus outreach and technical assistance on BIPOC-owned businesses and racial/ethnic affinity professional organizations. SFE racial equity staff can identify stakeholders to assist in this process.
- **Long-term:** Economic and workforce development interventions are needed to complement this ordinance, and to ensure racial equity in the just transition away from an extractive economy. Potential future workforce activities that SFE could play a supportive role include:
 - Developing training for all-electric building construction and maintenance that is targeted to Black, Indigenous, and People of Color (BIPOC) and people with barriers to employment.
 - Developing incentives, requirements, and/or certification standards for contractors who hire graduates of the training.
 - Developing incentives, requirements, and/or other opportunities to direct work to BIPOC-owned businesses.

#4: Restaurants

Cooking on an open gas flame may be more important to the cuisine of certain cultures,¹⁵ and there may not be an electric substitute that can perform as effectively. Electric appliances, while more efficient to operate, are more expensive and, at this point in time are a new technology that cannot be purchased second-hand and at a discount.¹⁶ Since this does not impact any existing restaurants, the focus on the recommendations are to help future restaurants adapt to this new requirement.

Recommendations to Advance Racial Equity

- **Short-term:** SFE should gather feedback to better understand impacts to cultural cooking. SFE should search for chefs who are leading the way on cultural cooking with electric appliances, such as through engaging restaurant incubators, trade schools, and industry associations. SFE racial equity staff can support the identification of potential restaurants for engagement. SFE can also gather feedback about the cost impacts to new restaurants. The longer implementation time period for restaurant compliance can provide an opportunity to extend outreach to more diverse stakeholders seeking to open restaurants in newly constructed buildings.

¹³ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_workgroup_notes_3.pdf

¹⁴ https://greenlining.org/wp-content/uploads/2019/10/Greenlining_EquitableElectrification_Report_2019_WEB.pdf

¹⁵ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_residential_meeting_notes_3.pdf

¹⁶ https://sfenvironment.org/sites/default/files/fliers/files/sfe_zebtbf_new_construction_workgroup_notes_1.pdf



- Long-term: Provide appliances to and training through restaurant incubators, trade schools, and industry associations on cultural cooking on electric appliances to build familiarity with technology and provide feedback to SFE.

#5: Funding

Resources are needed to further advance racial equity in the construction of new all-electric buildings, and to ensure a just transition away from an extractive economy.

Recommendations to Advance Racial Equity

- Long-term: SFE could research the creation of a new funding stream using the climate justice principle in which the largest polluter pays for the transition, such as a fee for large existing commercial buildings. This principle could be applied beyond buildings to other sectors with high GHG emissions and to workforce programs beyond building electrification.