FUNDING GAP ANALYSIS

Driving Energy Efficiency and Renewable Energy Funds into Low-to-Moderate Income (LMI) Communities in California

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Overview

The State of California is making an incredible effort to meet the challenges of climate change, including serving as a climate leader and blazing the path for other states to follow. This includes the development of highly aggressive state-wide climate goals. If leaders are serious about meeting these goals, every resident, business, and government agency must make substantial investments in infrastructure and the built environment; the affordable housing community is no exception.

Housing affordability levels in California are extremely low, necessitating a greater supply for affordable housing. The push to meet climate goals puts an already strained affordable housing community under even more pressure. Despite this, the community is innovative and have led the way in many green building and renewable energy efforts over the last 3 decades. Many affordable housing developers acknowledge the need to meet the State's climate goal and strive to do so without sacrificing affordability. However, our analysis shows that more financial support is required for California to accomplish its dual goals of housing affordability and climate mitigation. Affordable housing and energy advocates must stand together in their efforts to organize more resources to build more affordable, higher-performance housing.

This analysis provides an overview of California's climate goals alongside the current funding available to upgrade and build said affordable housing and the amount of money required to fill the funding gap. The effort is timely because of the new infusion of funds that will be coming into California from the Federal Inflation Reduction Act of 2022 (IRA), presenting an opportunity for California to harness funding to address this gap.

Summary of Findings

- **The current energy package for California provides $1.1 billion through its Equitable Building Decarbonization Program over the next 5 years for decarbonization of affordable housing.** California's climate goal requires all buildings to be net zero by 2045, which includes all affordable housing. California's current climate plan is more aggressive than any other state's.
- **In total, the state needs to decarbonize 2 million units.** There are 1.6 million existing affordable housing units, while the state is on track to create another 440,000 new units by 2045.
- **If current funding remains consistent for the next 20 years, the state will decarbonize 176,000 affordable housing units, which is significantly less than the 2 million units in need.** The average cost to decarbonize a housing unit in California is $25,000. At the current funding levels of $1.1 billion, the state can decarbonize 8,800 affordable housing units per year.
- **In order to decarbonize 2 million units by 2045, the state needs to decarbonize 94,454 units per year.** At $25,000 per unit for 94,454 units, the actual funding required per year to upgrade the complete affordable housing stock is $2.4 billion per year. The current funding is $220 million per year.
- If state leaders do not increase energy and housing funds for decarbonization, we calculate that on top of typical rent increases, the rents of existing non-deed restricted units will likely be increased by approximately 8% to raise the capital required to fund decarbonization.

The annual funding gap to decarbonize California's affordable housing stock is $2.2 billion per year, or a total of $48 billion through 2045.

California Climate Goals

AB 1279 (Muratsuchi, 2022) codifies California's commitment to cut carbon emissions by 85% from 2023 levels and achieve state-wide carbon neutrality no later than 2045. As part of the 2022-23 budget, the following line items focused on increasing energy efficiency and transitioning to greener energy sources in the affordable housing sector.

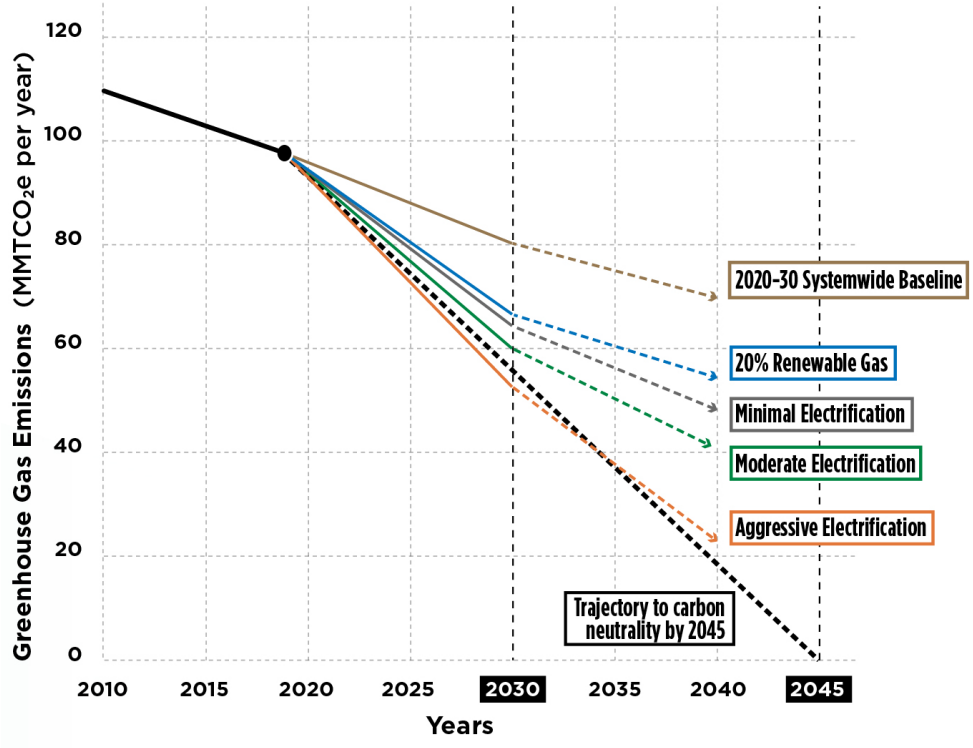
- $1.1 billion dedicated to decarbonizing affordable housing properties over the next five years
- And another $477 million committed but not dedicated to accelerate affordable investment into affordable housing and sustainable communities.

Housing Electrification

Currently, over 70% of all California households depend on fossil fuels for their space and water heating. The table below, from the California Energy Commission's Building Decarbonization Assessment in 2021, summarizes four different electrification scenarios. Only the 'Aggressive Electrification' plan's trajectory comes close to achieving the 2045 neutrality goals. The path to fully achieving the climate goal requires powering the complete housing stock with 100% renewable energy sources by 2045. In order to achieve this, all new and existing housing units will need to be converted to be powered by all-electric, renewable sources. For example, gas-powered space and water heating appliances will be converted to energy efficient all-electric heat pumps including other energy efficiency upgrades.

Straight Line Carbon Trajectories

Trajectories toward 2045 shows the relative closeness in 2030 of all the scenarios, but the long term shows large difference in trajectories.

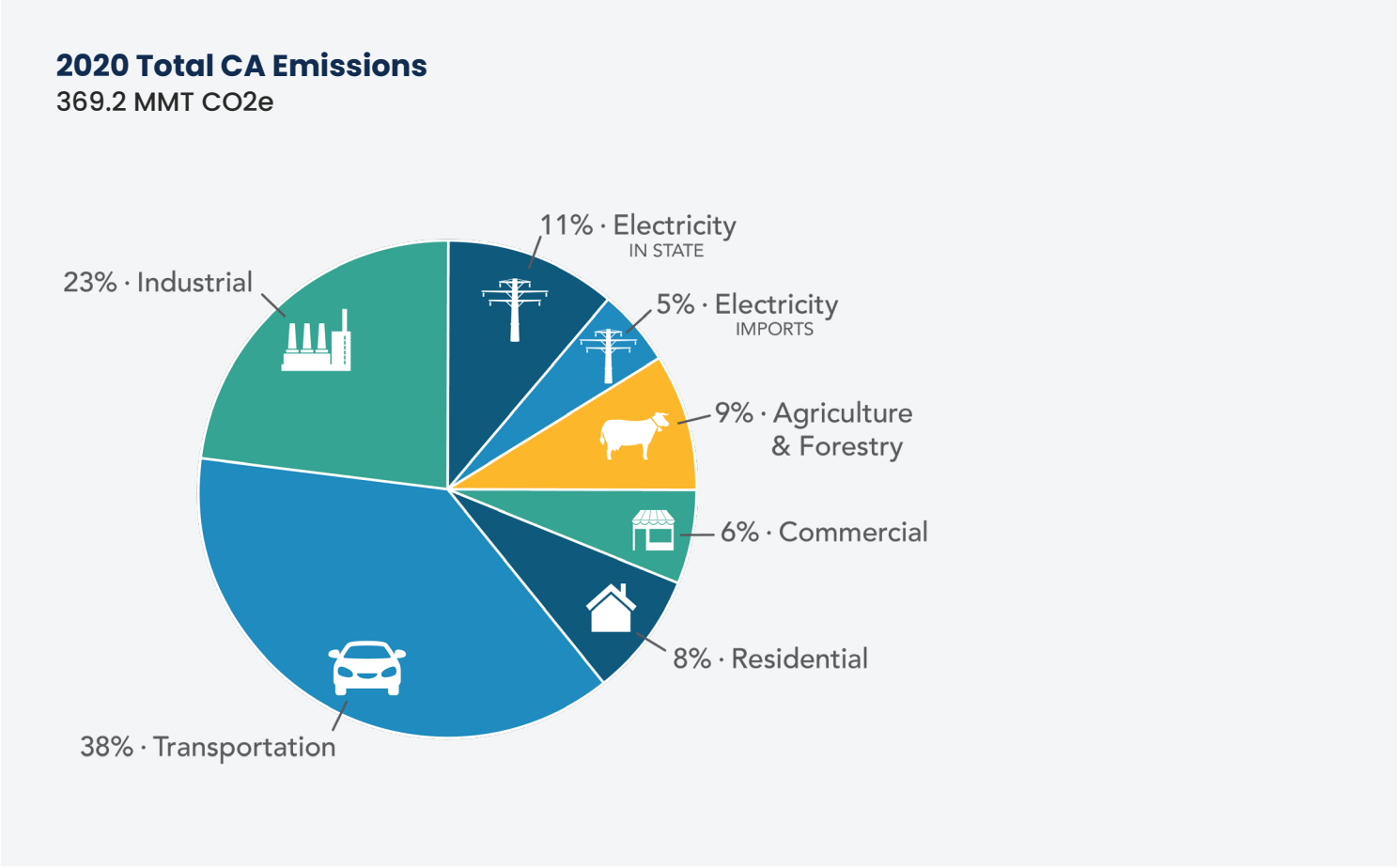


Source: California Energy Commission

Visualizing the California Landscape

California cannot meet its climate goals without decarbonizing its affordable housing stock.

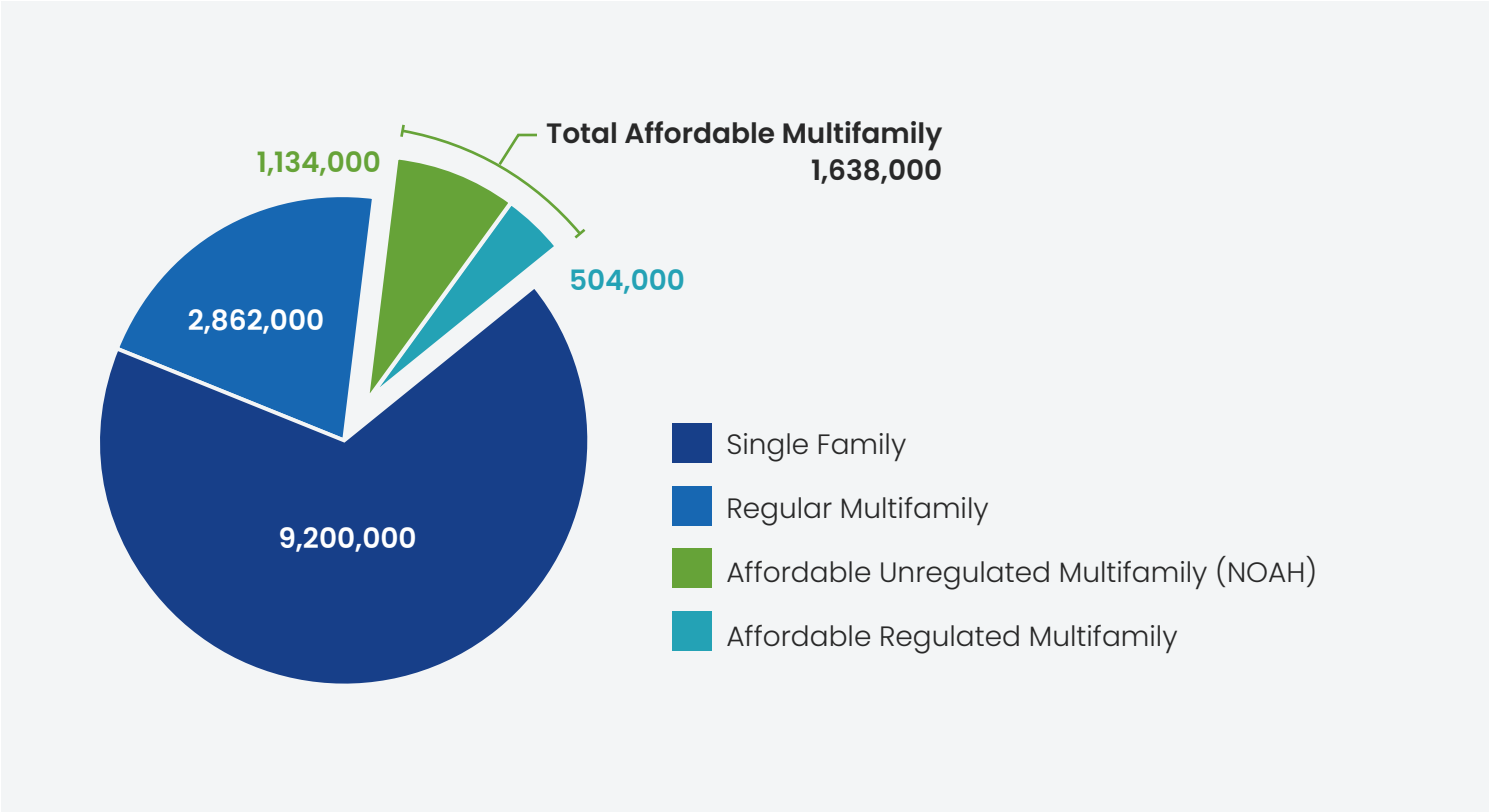
The below chart illustrates the breakdown of all emissions sources by sector in California. Multifamily properties are considered commercial, while single-family properties are considered residential. The multifamily sector comprises a substantial portion of the overall emissions released from commercial buildings: according to CBRE, nearly 40% of California commercial real estate investment goes to multifamily properties.



Source: California Air Resources Board

California's Existing Affordable Housing Stock

To determine the cost of decarbonizing the affordable housing sector, the team first assessed the existing affordable housing stock. The below chart shows the breakdown of California's residential housing stock by single and multifamily housing. Of the 13.7 million total housing units in California, around 9 million units are single-family and around 4 million units are multi-family. According to the **California Housing Partnership**, approximately 1.6 million units are classified as affordable housing, defined as both regulated and unregulated units where rents are such that residents making average household incomes do not spend over 30% of their income on rent. Approximately 500,000 of these units are regulated by government agencies to ensure specific rent levels for the long-term. The remaining 1.1 million affordable units are unregulated, otherwise known as Naturally Occurring Affordable Housing (NOAH).



Source: California Housing Partnership

Forecasting California's Affordable Housing Stock

Given the target of statewide carbon neutrality by 2045, the team additionally forecast the number of new affordable housing units likely to be built between now and then.

California's affordable housing crisis is driven by a severe undersupply of affordable units: California Housing Partnership **reports a gap of around 1.3 million affordable housing units** that would also need to be all-electric within the framework of the energy efficiency goals. Despite this gap, California averages around 20,000 newly created affordable housing units per year. Data from the **California Housing Partnership** shows a positive upward trend in the past 3 years; however, the state is still only funding around 16% of what it needs to meet its housing needs. For the purposes of creating a realistic analysis, the team added the 1.6 million existing units that need to be decarbonized with 20,000 per year of newly created affordable housing units for 22 years, ultimately deriving a total of 2,078,000 affordable housing units by 2045.

California Affordable Housing Stock

1,134,000	Unsubsidized Units (NOAH)
+504,000	Subsidized Units
1,638,000	Total Existing Affordable Housing Units
+440,000	Total New Units Created
2,078,000	**Total Affordable Housing To Upgrade by 2045**

It should be noted that California has made significant progress toward reducing housing and transportation-related emissions through Title 24, which regulates building energy efficiency standards, and state affordable housing programs that prioritize energy efficiency, density, infill, and proximity to transit. Unfortunately, this analysis does not fully capture units meeting the successive Title 24 standards or all-electric units due to lack of data and thus the gap may be overstated. The state funds two notable all-electric programs, AHSC and BUILD. Since its inception in 2022, BUILD has seen 4,715 all-electric affordable and market-rate units approved for incentives. AHSC's most recent round funded 2,552 affordable housing units designed to all-electric specifications. Prior rounds gave priority to an additional 10,599 affordable units designed as all-electric or net zero.*

*The necessary systems to comprehensively track progress on decarbonizing affordable housing in California are not in place yet – as such, it is prohibitively difficult to capture all affordable housing units that have been electrified in this analysis. We suggest that establishing the necessary measures to track when units have been fully electrified would be a useful fundraising measure: a more accurate depiction of both what has been and what remains to be electrified would be a powerful tool for attracting investment.

The Cost of Electrification

In their **California Building Decarbonization Assessment**, the California Energy Commission estimates that the cost of decarbonizing a residential unit in the State of California ranges from $10,000 to $40,000, with costs decreasing if units already have some electric appliances, electric heat, and/or electric water heat. At an average of $25,000 per unit, the cost of decarbonizing all 2 million affordable housing units is approximately $53 billion.

The Funding Gap Calculation

Currently, the climate plan carves out $1.1 billion affordable housing electrification over the next 5 years, or $220 million annually. Although this funding level illustrates a strong commitment by the state, the funding levels are insufficient to meet the goal.

As illustrated in the below chart, the actual cost of upgrading affordable housing in California requires $2.4 billion per year for a total of $53 billion.

To calculate the annual investment cost for upgrades to affordable housing, we can divide the total gap of $48 billion by the 22 years that we have to reach the climate goal, which results in an required annual additional cost of $2.2 billion a year to reach the climate goal for affordable housing.

The Funding Gap for Decarbonizing California's Affordable Housing Stock

	2023-2045 Per Year	2045 Total
Current State Funding	$220 million	**$4.8 billion**
State Funding Required	$2.4 billion	**$53 billion**
Funding Gap	$2.2 billion	**$48 billion**

Source: Housing Sustainability Advisors

The above chart outlines the current funding per year set aside by the State of California compared to our own estimates. The current funding level is extrapolated out until 2045 in current dollar values and assuming that California will at least maintain current funding levels over time.

Calculating Rent Increases

Regulated affordable housing, which has strict rent caps, currently faces limited resources to generate additional funds for decarbonization. The bulk of the state's affordable housing stock, however, is largely unregulated, and owners of those properties have an option to increase rents to fund the upfront cost of decarbonization measures.

The team developed the example below to help better understand the potential negative consequences on unregulated affordable housing rents when strict decarbonization mandates are coupled with a lack of increased funding. In this example, we assumed three-person households earning 65% of area median income (AMI) in LA County; an affordable two-bedroom rent for such a household would be $1,844 per month. We assumed that units were unrestricted affordable Class B units built in the mid-1990s and would cost a minimum of $25,000 per unit to decarbonize.

Example: Raising Rents to Fund Decarbonization

Assumptions	
Average Renter Household Size (LA County)	3
100% AMI Income for 3-person Household	$113,500
65% AMI Income for 3-person Household	$73,775
Affordable Monthly Rent @ 30% Income	$1,844
Housing Type	NOAH, Class B, Mid-90s Build
Number of Units	100
Cost of Decarb	
Decarb Cost Per Unit (Minimum)	$25,000
Total Cost of Decarb	$2,500,000
Total New Debt Required to Fund Decarb	$2,500,000
Loan Terms	
Interest Rate	5.55%
Loan Term	35
Debt Service Coverage Ratio	1.15
Loan Payment	
Total Monthly Payment to Support $2.5MM Loan	$15,534
Total Estimated Rent Increase / Unit / Month	**$155**
% Rent Increase / Unit	**8%**

Source: Housing Sustainability Advisors

A 100 unit affordable housing property would thus need to raise an additional $2.5 million in upfront capital to fund decarbonization. If the owner has no other source of low-cost funds (ie. grants or "soft loans"), then they will be forced to fund the decarbonization upgrades using conventional debt, which translates to an increase to in-place rents, thereby threatening affordability.

At today's interest rates, we are confident that if this $2.5 mil funding gap for decarbonization is not filled with state and federal support, housing owners will be forced to raise rents by approximately of $155 per month, or 8%, in order to raise the upfront capital required to fully fund the decarbonization of their properties. This 8% rent increase is typical of what we will see, and it will be borne by those with the lowest means in our communities.

Conclusion

California continues to lead the way in addressing climate change. Its current climate plan is more aggressive than any other state, and its climate goal requires all buildings to be net zero by 2045, which includes all affordable housing. The current energy package for California provides $1.1 billion through its Equitable Building Decarbonization Program over the next 5 years for decarbonization of affordable housing.

Unfortunately, as of June 2023, the state legislature is currently in the process of negotiating the final budget, and the $1.1 billion is at risk of being cut. The state must protect its current funding commitment and add billions of dollars more. If current funding remains consistent for the next 20 years, the state will decarbonize 176,000 affordable housing units, which is significantly less than the 2 million affordable housing units in need. In order to decarbonize 2 million units by 2045, the actual funding required is $2.4 billion per year. The current funding is $220 million per year. If state leaders do not increase energy and housing funds for decarbonization, we calculate that on top of typical rent increases, rents of every existing and planned new unit will need to be increased by approximately 8% to raise all of the capital required to fund decarbonization.

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California's Energy Efficiency Gap in Affordable Housing

By the Numbers

Affordable Housing Units

1,638,000 existing affordable housing units in CA

+ 440,000 additional affordable units by 2045

2,078,000 total units to decarbonize

California's Climate Goals

All buildings, **including all affordable housing**, to be **net zero** by

2045

Cost of Decarbonization

$25,000 average cost of decarbonization per housing unit

x 2,078,000 total affordable housing units

$53 billion in total, or

$2.4 billion per year

The Current Climate Plan

$1.1 billion budgeted over the next

÷ 5 years

$220 million per year

or **$4.8 billion** in total, if funded to 2045

Calculating the Gap

$53 billion total decarbonization cost

– $4.8 billion budget trend

$48 billion total funding gap

$2.2 billion additional funding needed per year

APPENDIX A:
Summary of Gap Analysis: A Closer Look at the Math

1. California's climate goal requires all buildings to be net zero by 2045, including all affordable housing. The current financial funding allocation is $1.1 billion over the next 5 years for LMI retrofits and the creation of new affordable housing. **Source: California Legislative Analyst's Office 2022-23 California Spending Plan: Resources and Environmental Protection**

2. There are a total of 1,638,000 affordable housing units, 1,134,000 unsubsidized (NOAH), and 504,000 subsidized affordable housing units. The goal is to decarbonize all existing affordable housing units while making sure new construction is all-electric. **Source: California Housing Partnership data**

3. The gross cost to decarbonize a housing unit in CA ranges from $10,000 to $40,000. The average cost is approximately $25,000. The cost for retrofitting energy efficient technology will likely be $25,000 or higher, while creating all-electric new construction will be significantly cheaper. **Source: California Energy Commission data**

4. Based on new affordable housing construction trends over the past 3 years, there are around 20,000 new units created per year. Assuming the continuation of this trend, a total of 440,000 new units will exist by 2045. Their cost of new construction is added to the overall calculation. **Source: California Housing Partnership data**

5. All existing affordable housing units at 1,638,000 combined with the 440,000 new construction results in 2,078,000 total affordable units that will require retrofitting or will be all-electric construction. At $25,000 per unit, the resulting cost is around $53 billion total or $2.4 billion a year.

The gap is the total of $53 billion - $5.1 billion = $48 billion gap, or $2.2 billion per year gap over 22 years.