



Building and Safety Division

December 3, 2025

To: Environment and Climate Commission

From: Kurt Hurley, Green Building Program Manager

Subject: Reach Code Options and Staff recommendations

This memo summarizes reach code options to advance building decarbonization that merit further consideration by policymakers. Staff recommend pursuing a Single Source Energy Margin (Single Margin) reach code for adoption, and conducting further analysis of Flexible Path (FlexPath) and Air Conditioner to Heat Pump (AC2HP) provisions for future consideration.

Background

Currently, Berkeley has no local reach codes requiring energy performance exceeding state model code for new buildings. On May 20, 2025, City Council adopted a referral to the City Manager to evaluate and develop amendments to the 2025 Energy and CALGreen Codes and/or other ordinances to accelerate building decarbonization (Attachment 1).

On June 30, 2025, the Governor signed into law AB130, imposing a moratorium on all local amendments to state building codes for residential buildings through June 1, 2031, unless certain exceptions are met. [Health and Safety Code 17958.5\(c\) Exception 5](#) allows local jurisdictions to amend code if the proposed changes are consistent with an adopted greenhouse gas emission reduction strategy, allow for mixed-fuel construction, and are aligned with a city's general plan that was approved on or before June 10, 2025. The City of Berkeley may pursue adoption of code amendments that align with this exception.

Staff surveyed and analyzed various reach code options that align with relevant plans adopted by the City, including the General Plan, Climate Action Plan, and Berkeley Existing Building Electrification Strategy. Staff analyzed potential policies that would substantially reduce the environmental impact for new construction added to Berkeley's built environment, and would accelerate the reduction in environmental footprint of Berkeley's existing building stock. Over the last two years, staff have conferred with designers, developers, and environmental groups advocating for specific reach code approaches.

Recommended Option

In the near term, staff plan to conduct further analysis and stakeholder engagement regarding a Single Margin reach code and advance that option for consideration by City Council.

Single Source Energy Margin (Single Margin): The Single Source Energy Margin (Single Margin) reach code option is an energy performance approach for new construction. It would require lower annual energy use than allowed by the state code's baseline budget for all new construction, calculated through a Long-Term System Cost (LSC) margin and resulting in lower annual greenhouse gas emissions. This reach code creates a fuel-neutral performance standard, setting a higher bar for energy efficiency, whether for all-electric or mixed fuel design. At the time of this memo, 14 local governments have adopted a version of a Single Margin reach code to the 2022 Energy Code: Brisbane, Burlingame, Contra Costa County, Cupertino, East Palo Alto, Encinitas, Goleta, Napa County, Palo Alto, San Jose, San Luis Obispo, San Mateo County, Santa Cruz, Santa Monica. Various Community Choice Aggregators provide technical support to jurisdictions considering adopting a Single Margin reach code.

Single Margin key considerations:

- This method would encourage all-electric construction while still offering a path to allow mixed-fuel buildings.
- The City would adopt specific compliance margins, based on LSC for any or all of 4 building types using cost-effectiveness findings: Single-Family, Multifamily Low-Rise, Multifamily High-Rise (4+ stories) and Nonresidential Buildings.
- Project designers would be required to specify more efficient appliances, envelope, or augment solar PV & energy storage system installations for new buildings.

Covered Projects: All new construction.

Administration: Moderate staffing impact for administration; staff would review and confirm energy compliance with a lower energy consumption than required by state Energy Code.

Timeline: Staff expect to be able to advance an ordinance for adoption by Q3 2026, contingent upon the publication of cost effectiveness studies and reach code model language template.

Options for Additional Analysis and Future Consideration

Staff recommend the following two options for additional research and analysis, but not for adoption at this time: Air Conditioner to Heat Pump conversion (AC2HP) and Flexible Path (FlexPath).

1. **AC2HP:** This energy efficiency reach code option targets existing buildings and requires either a heat pump to be installed at time of air conditioning (AC)

equipment replacement, or improved AC system efficiency. At least two California municipalities have fully adopted similar reach codes to date including: Moreno Valley and Mountain View. A proposal was advanced to the San Jose City Council in September of 2025 but was not approved. Organizations such as the [U.S. Green Building Council California](#), the [Sierra Club](#), and some local CCAs, such as [Bay Area Reach Codes](#), support this option. This reach code approach was initially developed by the California Energy Commission as a voluntary amendment to CALGreen for local jurisdictions to adopt.

AC2HP key considerations:

- Both AC and Heat Pumps are electric appliances. Therefore, this reach code would not necessarily compel fuel-switching or associated building upgrades.
- While we do not have specific data on how many dwellings in Berkeley currently have existing AC systems, due to Berkeley's mediterranean climate, it is likely few households have AC and therefore this option would have limited impact. Most non-residential buildings do have AC.

Covered Projects:

- Existing Single Family
- Existing Multifamily Buildings, contingent upon availability of cost-effectiveness analysis and reach code model language template.
- Additional analysis and engagement are warranted to determine applicability to non-residential buildings. Cost effectiveness analysis exists for Single Zone Rooftop HVAC units less than 20 tons in existing non-residential buildings. Further cost-effectiveness analysis and model ordinance language may be forthcoming.

Administration: Minimal staffing impact for administration. This option may result in an increase in owners not obtaining permits to replace their AC.

2. **FlexPath:** This reach code option requires existing single-family buildings to complete a set of energy efficiency, renewable energy and/or electrification upgrades to meet a targeted energy-saving score when undergoing substantial renovations. The FlexPath Reach Code is similar to Berkeley's Building Emissions Saving Ordinance (BESO) program, with the difference that BESO requirements are triggered at time of sale. Nine local municipalities have adopted a FlexPath reach code for the 2022 Energy Code including Corte Madera, Fairfax, Marin County, Menlo Park, Oakland, Ojai, San Anselmo, San Luis Obispo, San Rafael, and Santa Cruz. The City of San Rafael developed the FlexPath reach code, in collaboration with the California Energy Commission's [Statewide Reach Codes Program](#). The [Sierra Club](#) and several local [CCAs](#) support the Flex Path reach code approach at time of renovation.

FlexPath key considerations:

- The definition of the 'substantial alteration' trigger (e.g, by project valuation amount) would determine how broadly the requirements would apply.

- A compliance list of measures with point values assigned to the specific improvements, similar to BESO. Measures may include electrification, health, and energy efficiency improvements.

Covered Projects: Existing Single-Family Dwellings, potentially including ADUs and Duplexes.

Administration: Moderate staffing impacts as additional reviews and inspections would be required.

The FlexPath reach code accelerates existing building decarbonization and affords flexibility to the owners in choosing a suite of measures suited to the existing structure in order to achieve the City's goals and objectives. However, there are complexities in administration based on experiences to date in other jurisdictions, and potential overlap with the new BESO time of sale resilience upgrade requirements. Staff recommend waiting until after we have data and experience administering BESO before considering adoption of a FlexPath reach code.

Alternative Actions Considered

Staff also considered but are not recommending the following options.

Zero NOx Reach Code: This option requires all new buildings to install zero-NOx-emitting appliances. It is the most similar in effect and impact to the City of Berkeley's former Natural Gas Infrastructure Prohibition, BMC 12.80, now repealed. Although staff recommended a Zero NOx reach code in 2024, this approach is not currently recommended because there is no legal pathway for adoption under AB 130. The City of Los Altos Hills and Campbell had adopted a Zero NOx Reach Code for new residential construction prior to adoption of AB 130 and are currently enforcing it.

Ultra Low NOx: This reach code option would require appliances in new construction and/or substantial renovations to meet stricter NOx emissions standards. This reach code approach is not currently recommended by staff. Gas-powered Ultra Low NOx appliances are generally less efficient and/or prohibitively expensive. For some appliances, gas-powered Ultra Low NOx models do not exist. The Bay Area Air District currently has low NOx requirements for water and space heaters and will be phasing in Zero NOx requirements for these appliances. Ultra Low NOx has not been adopted by any local governments.

Furnace to Heat Pump: This reach code would encourage gas-powered furnaces to be replaced with a heat pump HVAC system at time of replacement. Existing studies do not demonstrate cost effectiveness for this reach code approach. Replacing existing HVAC equipment may require-upgrades to building systems, electric service or grid, or infrastructure.

Passive House Incentives: The Passive House zoning amendment reach code approach would incentivize design for higher energy performance by offering a density bonus to buildings built to this standard. While it does allow for mixed-fuel energy design buildings, it requires buildings to be built with advanced energy efficiency and tighter building envelopes in order to qualify for the incentive. This approach is not recommended because past efforts to incentivize green building through zoning in Berkeley had limited participation, and the breadth of the State density bonus program limits the competitiveness of a local program. No local municipalities have adopted this option.

On October 1, 2025, the Governor signed into law California Assembly Bill 368, which directs the California Energy Commission to study and evaluate the Passive House energy efficiency standards to determine their cost-effectiveness and suitability as an alternative compliance pathway for California's building energy standards and report its findings to the state legislature by July 1, 2028.

Next Steps

Staff will conduct additional outreach to developers, designers, and other stakeholders regarding the reach codes recommended above, and will return to ECC in Spring 2026 to present the results of this outreach. Staff aim to advance a Single Margin reach code to City Council for consideration by late summer 2026, or earlier if possible, contingent on the timely publication of cost effectiveness studies.

Subsequent to City Council adoption of any amendments to the CA Energy Code, the California Energy Commission and the California Building Standards Commission must review and approve the amendments and findings of cost-effectiveness before the codes can go into effect. 2025 Energy Code amendments pertaining to residential occupancies must demonstrate eligibility for an exception under AB130.

Questions for Environment and Climate Commission:

1. Are staff's reach code recommendations in alignment with ECC's objectives?
2. Are there reach code options of interest to the Commission not appearing in staff's memo?
3. Is the focus on both Berkeley's new construction and/or existing buildings preferred?
4. Are there specific stakeholder groups that staff should engage with?

Attachments

1: May 20, 2025 City Council Referral to evaluate policies to accelerate building decarbonization

cc: Jordan Klein, Planning and Development Department Director
Sarah Moore, OESD Manager
David Lopez, Building and Safety Division Manager
Jeff Jensen, Assistant Building & Safety Division Manager



Environment and Climate Commission

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CONSENT CALENDAR
May 20, 2025

To: Honorable Mayor and Members of the City Council
From: Environment and Climate Commission
Submitted by: Brianna McGuire, Chair, Environment and Climate Commission
Subject: Authorization for City Manager to evaluate policies to accelerate building decarbonization

RECOMMENDATION

Authorize the City Manager to evaluate and develop amendments to the 2025 Energy and CALGreen Codes and/or other ordinances to accelerate building decarbonization for Council consideration.

FISCAL IMPACTS OF RECOMMENDATION

None. Existing staff within the Planning Department's Building and Safety Division and Office of Energy and Sustainable Development can allocate time to develop policy recommendations for Council consideration.

CURRENT SITUATION AND ITS EFFECTS

Berkeley has historically set ambitious climate goals, starting with the first ever Climate Action Plan in 2009 and most recently with its science-based Race-to-Zero commitments (November 2021) that require 60.5% emissions reductions by 2030 and net-zero emissions by 2045. While much progress has been made, the City needs an additional 50% reduction in the next five years to meet its goals.

According to the latest 2023 greenhouse gas emissions inventory, natural gas use in buildings was responsible for 35% of all emissions citywide. The City has recognized its own ability and responsibility in tackling these emissions, as well as the impact of natural gas use on public health. Estimates from Bay Area Air District and UCLA estimate that natural gas combustion is responsible for nearly \$1 billion in additional healthcare costs in the Bay Area alone. In 2019, the City passed a ban on natural gas in new construction. The policy quickly spread across the region, state, country, and world.

Unfortunately, as of 2024, the policy is no longer in effect, having been vacated by the U.S. Court of Appeals for the Ninth Circuit. The impacts have been immediate. According to City staff, in the short time since the law was overturned, many large projects have amended their plans to include natural gas hookups, despite the potentially added costs to their projects. This is a public health and climate disaster.

In an attempt to address this situation, Planning Department staff proposed local amendments to the California Building Standards Code in May 2024. Their primary recommendation was the adoption of a Zero NOx appliance standard which would effectively prohibit gas construction. After initial consideration and the recommendation of an exemption pathway for commercial kitchens, Council ultimately decided not to adopt the amendments. Thus, new construction in Berkeley will continue to include gas, even as the City attempts to drastically increase housing production. This will lock in carbon emissions, earthquake risk, and public health impacts for decades to come.

There is a pressing need to prevent new building gas infrastructure and address the 35% of city emissions that come from existing buildings. The City's recent adoption of a time of sale energy upgrade requirement for single-family homes is a small step in this direction, but will only affect 1% of the existing building stock per year. Staff also was awarded under a Department of Energy grant to develop a large buildings Building Performance Standard (which would require declining emissions from large buildings over time), but the funding is in jeopardy due to the change in federal administration. Thus, there is also a need for further research and legislation to set the City on a pathway to zero emissions from existing buildings.

At its meeting March 26, 2025, the Environment and Climate Commission authorized its Building Decarbonization Subcommittee to write and submit a report to the City Council to authorize the City Manager to evaluate and develop amendments to the 2025 Energy and CALGreen Codes and/or other ordinances to accelerate building decarbonization for Council consideration (moved by Kesselman, seconded by Ranney, motion carried 9-0-0-0; Ayes: Ranney, LaBonte, McGuire, Tahara, Guliasi, Kesselman, Binns, Athanasiou, Syed. Noes: None. Abstain: None. Absent: None).

BACKGROUND

In 2021, Council adopted the Berkeley Existing Buildings Electrification Strategy, which laid out four primary electrification strategies:

1. Time of replacement and renovation
2. Time of sale
3. Building Performance Standards
4. Neighborhood Electrification and Gas pruning

Implicitly, this policy took as given the policy baseline in 2021 in which all new construction was all-electric. As of 2024, this is no longer the case, with the Ninth Circuit having overturned Berkeley's landmark natural gas ban.

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Evaluate Policies to Accelerate Building Decarbonization

CONSENT CALENDAR
May 20, 2025

Building Codes have the potential to address electrification at time of replacement and renovation as well as backfill the City's existing policy objectives of all-electric new construction. The California Building Standards Code (Title 24), which is updated every three years, provides pathways for local amendments that go beyond the increasingly stringent state baselines for energy efficiency and environmental quality. As the next triennial code cycle is approaching (commencing in January 2026), Berkeley is already undertaking the process to update local codes to comply with the new standards, providing a perfect opportunity to develop further amendments or ordinances to reduce natural gas use in new and existing buildings.

ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

Policies developed by staff and adopted by Council would reduce greenhouse gas emissions in new and existing buildings, as well as reduce the presence of toxic byproducts of natural gas combustion.

RATIONALE FOR RECOMMENDATION

There is an urgent need for a policy backstop to ensure all-electric new and existing buildings, and there is an existing legislative process underway that can be utilized to reduce the marginal effort required by the City to adopt such policies.

ALTERNATIVE ACTIONS CONSIDERED

None.

CITY MANAGER

The City Manager concurs with the content and recommendations of the Commission's Report.

CONTACT PERSON

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