

DOCKETED

Docket Number:	22-BSTD-07
Project Title:	Local Ordinance Applications Exceeding the 2022 Energy Code
TN #:	261951
Document Title:	City of Burlingame Staff Report
Description:	Plain text of City of Burlingame Staff Report
Filer:	Anushka Raut
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/24/2025 4:23:11 PM
Docketed Date:	2/24/2025



STAFF REPORT

AGENDA NO:

MEETING DATE: October 21, 2024

To: Honorable Mayor and City Council

Date: October 21, 2024

From: Sigalle Michael, Sustainability Program Manager – (650) 558-7274

Subject: Introduction of an Ordinance Repealing and Replacing Chapter 18.30 of Title 18 of the Burlingame Municipal Code to Adopt Local Amendments to Part 11 of the State Building Code and Creating a New Chapter 18.31 of Title 18 of the Burlingame Municipal Code to Adopt Local Amendments to Part 6 of the State Energy Code (CEQA Determination: Exempt Pursuant To State CEQA Guidelines Sections 15378, 15061(b)(3))

RECOMMENDATION

Staff recommends that the City Council introduce the proposed Ordinance repealing and replacing Chapter 18.30 of Title 18 of the Burlingame Municipal Code to adopt local amendments to Part 11 of the State Building Code and creating a new Chapter 18.31 of Title 18 of the Burlingame Municipal Code to adopt local amendments to Part 6 of the State Energy Code.

Recommended Procedure and Order of Operations:

- A. Receive the staff report and ask any questions of staff
- B. Conduct a public hearing.
- C. Following the public hearing, discuss the Ordinance and determine whether to bring it back for second reading and adoption. If the Council is in favor of the Ordinance, direct the City Clerk to publish a summary of the Ordinance at least five days before its proposed adoption.

BACKGROUND

Reach codes are local building code amendments that go beyond the State's requirements for energy efficiency and green building standards. Local governments adopt reach codes to improve performance, reduce greenhouse gas (GHG) emissions, and meet climate action goals. The City of Burlingame last adopted reach codes in 2022 (Ordinance No. 2010), codified in Title 18 of the Burlingame Municipal Code, that required new developments to use all-electric appliances for heating, cooling, and cooking (with some exceptions); and install electric vehicle (EV) infrastructure.

The City of Berkeley adopted a similar regulation requiring all-electric appliances in new buildings in 2019. The regulation was subject to an unsuccessful challenge from California Restaurant Association in federal district court that the federal Energy Policy and Conservation Act (EPCA) preempted Berkeley's all-electric ordinance. Following, on April 17, 2023, the United States Court of Appeals for the Ninth Circuit (Ninth Circuit) reversed the district court's decision and ruled that the EPCA preempted the City of Berkeley's all-electric ordinance. The EPCA (42 U.S.C. §

6297(c)) states that “no State [or local] regulation concerning the energy efficiency, energy use, or water use, of [a] covered product shall be effective with respect to such covered product.”

On January 2, 2024, the Ninth Circuit denied the City of Berkeley’s petition for rehearing and issued a modified opinion affirming that Berkeley’s regulation is preempted by federal law. The City of Berkeley subsequently announced that it would not pursue an appeal of the Ninth Circuit ruling and would repeal its ordinance banning natural gas connections in new buildings. This decision effectively solidifies the Ninth Circuit’s ruling on April 17, 2023, as final law. *The California Restaurant Association v. City of Berkeley* ruling limits how the City of Burlingame can reduce emissions from new buildings and adds new context for what constitutes as a preemption to federal appliance regulations.

In response to the ruling, staff reached out to Peninsula Clean Energy (PCE) to collaborate on a new Reach Code approach. PCE and their consultant staff TRC, have been assisting San Mateo County cities in adopting Reach Codes and recommend an Energy Performance Approach via local amendments to the California Energy Code as the preferred alternative approach that will not conflict with EPCA under the most recent ruling.

EPCA has a specific exemption, referred to as the 7-factor test, which allows policies to require energy efficiency without pre-empting the EPCA. The California Energy Commission (CEC) has used this exemption for several code cycles, most recently through the use of the Energy Design Rating in the current Energy Code. Table 1 references several of the factors from the 7-factor test and explains the technical aspects of the Energy Performance Approach in reference to the factor.

**Table 1. Summary of 7-Factor Test for Pre-Emption
Compared to the Energy Performance Approach**

<u>EPCA Requirements</u>	Energy Performance Approach
Permit a builder to [...] select items whose combined energy efficiency meet an overall building energy target.	Instead of regulating appliance fuel infrastructure, the Energy Performance Approach sets a target energy score using the EDR1/Source Energy margin (used in the California Energy Code performance option).
Not specifically require any EPCA-covered appliance to exceed federal standards.	This approach sets the Source Energy target energy score assuming federally required minimum equipment efficiencies.
Offer options for compliance, on a 1-for-1 equivalent energy use or equivalent cost basis.	This approach sets a common Source Energy target energy margin for both mixed-fuel and all-electric buildings.

DISCUSSION

Staff recommends the Council to amend the City’s existing Reach Code with the intent to comply with the Ninth Circuit ruling and also continue to reduce carbon emissions associated with new construction. The recommended Energy Performance Approach provides a compliance pathway for all-electric and mixed-fuel buildings. Brisbane, San Jose, Palo Alto, and East Palo Alto in the

Bay Area have already adopted this approach, and several other San Mateo County cities are considering it. TRC provided Burlingame with the Reach Code model ordinance, and cost effectiveness studies related to this new approach.

The proposed Reach Code update would specifically require the following:

- Local amendments to the California Energy Code that require an energy performance standard that require more efficient building than what is minimally required by the state by establishing a higher energy performance margin. This margin encourages electrification in buildings as it is the more cost-effective option in new construction.
- This approach would not regulate cooking equipment, laundry dryers, or pool heaters.
- New mandatory requirements for electric readiness when gas appliances are used in new construction.
- No changes to the City's existing electric vehicle charging infrastructure requirements for new construction.

The 2022 California Energy Code contains energy, water efficiency, and indoor air quality requirements for newly constructed buildings, additions to existing buildings, and alterations to existing buildings. The California Energy Code provides different metrics for different types of buildings and is organized into three categories:

1. Single-Family Residential: A new single-family residential building must meet or exceed all "Energy Design Ratings" (EDR). There are three EDR categories:
 - EDR1 (Source Energy) – EDR1 is a score representing a building's energy efficiency expressed in terms that serve as a proxy for greenhouse gas emissions.
 - EDR2 (Efficiency) – EDR2 is a score representing a building's energy efficiency expressed in terms of the value and cost of energy consumed at different times of the day and year.
 - EDR Total (Total Energy Design Rating) is a score representing the building's total energy expressed in terms of the value and cost of energy consumed at different times of the day and year while also factoring in solar and energy demand flexibility.
2. Multi-Family Residential: A new multi-family residential building must meet or exceed a standard that combines the value and cost of energy consumed at different times of the day and year (referred to as Time Dependent Valuation of energy, or TDV), and the emissions from the building's energy source. The 2022 Source Energy metric is new for all multifamily buildings, and it was added to support decarbonization and electrification policy goals.
3. Non-Residential: A new non-residential building must also meet or exceed a standard that uses TDV energy and Source Energy emissions scores.

The proposed Reach Code would increase the required EDR1 score for single family residential buildings and the required Source Energy scores for all other buildings. Source Energy acts as a proxy for carbon emissions. By increasing these requirements, the result is a decrease in energy use and emissions from newly constructed buildings. Table 2 shows the requirements by building type.

Table 2. Proposed Improved Energy Performance Standards

Building Type	Performance Requirement
Single Family Residential Buildings	Exceed the standard EDR1 requirement by at least 9 points
Multi-Family Residential (Low-rise, ≤ 3 stories)	Exceed the standard Source Energy requirement by 10%
Multi-Family Residential (High-rise, ≥ 4 stories)	Exceed the standard Source Energy requirement by 4%
Non-Residential	Exceed the standard Source Energy requirement by 7%

The higher standards proposed in the updated Reach Code would allow new buildings to include electric appliances and/or mechanical systems, or allow the use of mixed-fuel appliances and systems which would include additional energy efficiency measures, PV systems, and/or a battery. The enhanced performance requirements would apply equally to mixed-fuel and all-electric buildings and are cost-effectively achievable through the energy code's performance pathway without requiring appliances that exceed federal efficiency standards.

The proposed Reach Code would also add to the current 2022 California Energy Code requirements for "electric ready" components in buildings, including electric outlets near natural gas appliances, appropriate ventilation for future heat pump appliances, and reserved and labelled breakers in the electrical panel for future electric appliances. Table 3 represents the current 2022 California Energy Code requirements, compared with those proposed to be added.

Table 3. Electric Ready Infrastructure Requirements

Building Type	Current Energy Code	Proposed Reach Code
Single-Family Residential	<ul style="list-style-type: none"> Gas-fueled furnaces Gas-fueled water heaters Gas-fueled clothes dryers Gas-fueled cooktops 	No additions
Multifamily Residential	<ul style="list-style-type: none"> Gas-fueled furnaces Gas-fueled water heaters (Excludes central water-heating systems) Gas-fueled clothes dryers Gas-fueled cooktops 	Gas-fueled water heaters (Includes central water-heating systems, in alignment with the 2025 State Energy Code)
Nonresidential	<ul style="list-style-type: none"> No current requirements 	Alignment with the 2025 State Energy Code, including: <ul style="list-style-type: none"> Commercial kitchens Control for HVAC hot water temperature Any other systems using gas or propane

Practical Effect of the Reach Code

This section illustrates the practical effect of the proposed approach by providing a simplified example of how a single-family home designer would comply with the proposed Reach Code.

Under the current California Energy Code, a building designer working on a single-family home built to the code minimum would likely include high efficiency LED lighting, rooftop solar, an electric heat pump hot water heater, a natural gas furnace, insulated walls, an insulated attic, and efficient windows, among other design elements that are similar to the prescriptive pathway in the California Energy Code. The designer would input the proposed building design into a computer building simulation model and estimate its energy performance. The energy modeling software would provide standard reporting metrics, including an EDR1. The designer would then compare the EDR1 to a standard design building. In this case, the proposed designed building's EDR1 score would be equal to the standard design building's EDR1 score. To calculate the compliance margin, the designer would subtract the standard design building's EDR1 rating from the proposed designed building's EDR1. In this example, that results in a compliance margin of 0, which meets the compliance requirement for that part of the California Energy Code.

With the proposed Reach Code in place, the designer would now need to achieve a compliance margin of 9 points (see Table 2, Tow 1, above). That means that the EDR1 of the proposed designed building must be 9 points better than the standard design building (i.e., an EDR1 compliance margin of 9 points or greater). If this building designer replaced the gas furnace with a commonly available heat pump HVAC system, the building would achieve a score that is 9 EDR1 points better than the code minimum standard design and would be consistent with the proposed Reach Code requirements. Alternatively, the building designer could keep the gas furnace and install a battery storage system, which would also result in an increase of more than 9 EDR1 points. The building designer also has the option to develop a package of efficiency and solar measures; so long as the measures lead to an increase of 9 or more EDR1 points better than the code minimum standard design, it is consistent with the reach code.

This illustrative example for single family homes is similar for the other building types where the proposed compliance margins reflect the designer selection of either installing electric heat pump equipment or gas equipment alongside some package of additional solar capacity, battery storage systems, and efficiency measures.

Cost Effectiveness

The CEC requires any local amendments to the California Energy Code that affect energy use in regulated buildings (e.g., Reach Codes) to be cost effective and to use less energy than the standard requirements. The CEC requires any local amendments to the California Energy Code that affect energy use in regulated buildings to be cost effective and use less energy than the standard requirements contained in Title 24, Part 6. The cost-effectiveness studies demonstrate that amendments to the code are financially responsible and do not represent an unreasonable burden to the residential and nonresidential building owners and occupants. Furthermore, the CEC requires the local agency to adopt a determination that the energy standards are cost effective at a public meeting, and the determination subsequently be submitted for CEC approval.

In support of reach code development, the California Energy Codes and Standards Statewide Utility Program, which includes the State's Investor-Owned Utilities (PG&E, SDG&E, and SCE,

under the auspices of the California Public Utilities Commission) developed and published the following studies (attached):

- 2022 Cost-Effectiveness Study: [Single Family New Construction Study](#) and the [associated cost-effectiveness data](#);
- 2022 Cost-Effectiveness Study: [Multifamily New Construction Study](#) and the [associated cost-effectiveness data](#); and
- 2022 Cost-Effectiveness Study: [Non-residential New Construction Reach Code Cost-effectiveness Study](#) and the [associated cost-effectiveness data](#).

These studies and the associated cost-effectiveness data are highly detailed and are included in the record to support the findings required for CEC approval. These studies and the associated cost-effectiveness data are the basis for staff's cost effectiveness findings and are sufficient to illustrate compliance with the requirements set forth under California Administrative Regulations Section 10-106. Based on these studies, staff finds the proposed local amendments to the 2022 California Energy Code to be cost-effective and consume less energy than otherwise permitted by Title 24, Part 6. In short, the proposed amendments save more than they cost to implement.

Required Findings

The proposed Reach Codes require amendments to the State Building and Energy Codes. Local amendments to state codes are allowed, so long as the City Council adopts findings that the proposed amendments are reasonably necessary to protect the public health, welfare, and safety because of Burlingame's local climatic, geologic, and/or topographical conditions (Health and Safety Code sections 17922, 17958, 17958.5, 17958.7, 18941.5). Staff recommends the following findings:

1. Climatic. The City of Burlingame is located in Climate Zone 3 as established in the 2022 California Energy Code. Climate Zone 3 incorporates mostly coastal communities from Marin County to southern Monterey County including San Francisco. The City experiences precipitation ranging from 13 to 20 inches per year with an average of approximately 15 inches per year. Ninety-five percent of precipitation falls during the months of November through April, leaving a dry period of approximately six months each year. Relative humidity remains moderate most of the time. Temperatures in the summer average around 80 degrees Fahrenheit and in the winter in the mid 50 degrees Fahrenheit. Prevailing winds in the area come from the west with velocities generally in the 12 miles per hour range, gusting from 25 to 35 miles per hour. These climatic conditions along with the greenhouse emissions generated from structures in both the residential and nonresidential sectors requires exceeding the energy standards for building construction established in the 2022 California Buildings Standards Code. The City Council also adopted a Climate Action Plan that has a goal of reducing greenhouse gas emissions by 40% by 2030. In order to achieve and maintain this goal, the City needs to adopt policies and regulations that reduce the use of fossil fuels that contribute to climate change, such as natural gas in buildings, in new development. Human activities, such as burning natural gas to heat buildings, releases greenhouse gases into the atmosphere and causes an overall increase in global average temperature. This causes sea levels to rise, affecting the City's shoreline and infrastructure.

Many new buildings in Burlingame will be built near the coastline in an area known as the Bayfront Area that is situated on historic marshlands and Bay fill. Numerous creeks also run through the City, which creates an increasing potential flooding risk with climate change as a result of human generated greenhouse gas emissions. Burlingame is vulnerable to sea level rise where new development is proposed in this code cycle. New buildings that are directly vulnerable to sea level rise should avoid generating additional greenhouse gas emissions. The proposed Reach Code would ensure that new buildings use cleaner sources of energy that are greenhouse gas free.

2. Geologic. The City of Burlingame is subject to earthquake hazard caused by its proximity to San Andreas fault. This fault runs from Hollister, through the Santa Cruz Mountains, epicenter of the 1989 Loma Prieta earthquake, then on up the San Francisco Peninsula, then offshore at Daly City near Mussel Rock. This is the approximate location of the epicenter of the 1906 San Francisco earthquake. The other fault is Hayward Fault. This fault is about 74 mi long, situated mainly along the western base of the hills on the east side of San Francisco Bay. Both of these faults are considered major Northern California earthquake faults which may experience rupture at any time. Thus, because the City is within a seismic area which includes these earthquake faults, the modifications and changes cited herein are designed to better limit property damage as a result of seismic activity and to establish criteria for repair of damaged properties following a local emergency.
3. Topographic. The City of Burlingame is contiguous with the San Francisco Bay, resulting in a natural receptor for storm and waste water run-off. Also the City is located in an area that is relatively high liquefaction potential given its proximity to the Bay, especially given the number of creeks that flow through the City, as well as the historic marshland and Bay fill east of Interstate 101. The surface condition consists mostly of stiff to dense sandy clay, which is highly plastic and expansive in nature. The aforementioned conditions within the City create hazardous conditions for which departure from California Building Standards Code and Electrical Code is warranted.

Environmental Review

The proposed Ordinance is not a Project within the meaning of section 15378 of the CEQA Guidelines because it has no potential for resulting in physical change in the environment. In the event that this Ordinance is found to be a Project under CEQA, it is subject to the CEQA exemption contained in CEQA Guidelines section 15061(b)(3) because it can be seen with certainty to have no possibility of a significant effect on the environment.

Effective Date

Upon Council adoption of the proposed Reach Codes, the Ordinance will be submitted to the CEC for approval. CEC review and approval may take two to four months. Following this review and approval, the Reach Codes will be in effect and enforceable.

FISCAL IMPACT

None.

Exhibits:

- Proposed Ordinance
- 2022 Cost-Effectiveness Study: Single Family New Construction Study
- 2022 Cost-Effectiveness Study: Multifamily New Construction Study
- 2022 Code: Non-Residential New Construction Reach Code Cost-Effectiveness Study