DOCKETED	
Docket Number:	22-BSTD-07
Project Title:	Local Ordinance Applications Exceeding the 2022 Energy Code
TN #:	259976
Document Title:	City of Santa Monica Staff Report
Description:	Plain text of City of Santa Staff Report
Filer:	Anushka Raut
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	11/12/2024 1:35:29 PM
Docketed Date:	11/12/2024

City Council Report

City Council Meeting: September 10, 2024
Agenda Item: 10.B

To: Mayor and City Council

From: Rick Valte, Public Works Director, Public Works, Office of Sustainability & the Environment

Subject: Introduce for First Reading Local Amendment Ordinance to the 2022 California Energy Code for Energy Performance Approach Reach Code for New Construction and Adoption of Resolution

Recommended Action

Staff recommends that the City Council:

1. Adopt a finding of Categorical Exemption pursuant to Section 15308 and a finding of no possibility of significant effect pursuant to Section 15061(b)(3) of the California Environmental Quality Act (CEQA) Guidelines;
2. Introduce for first reading an ordinance repealing Santa Monica Municipal Code (SMMC) Chapter 8.38 Zero Emission Building Code, amending SMMC Section 8.08.040 to remove reference to the Zero Emission Building Code, and adopting local amendments to the 2022 California Energy Code under SMMC Chapter 8.36 to support improved energy performance in new buildings;
3. Adopt a resolution that provides findings of energy and cost savings as required to adopt local amendments to the 2022 California Energy Code; and
4. Direct the City Manager to file the adopted resolution and ordinance with the California Energy Commission following the second reading of the ordinance.

Summary

If adopted, the proposed Energy Performance Approach would replace the Zero Emission Building Code to achieve the intended outcome of low-emission new buildings within the existing legal and regulatory framework, which has evolved over the last two years. The Energy Performance Approach provides the best and most timely opportunity to continue pursuing Council's adopted climate action goals described in the Climate Action and Adaptation Plan (Attachment A), which recommends adopting

carbon neutral construction codes for new residential, commercial, and multi-family properties.

In 2022, Santa Monica joined over 60 California cities in adopting an all-electric requirement for new construction. Called the Zero Emissions Building Code, the policy ensured that nearly all new buildings would be free from natural gas, drastically reducing the carbon footprint of Santa Monica's new building stock and ensuring improved indoor air quality for building occupants.

On April 17, 2023, a three-judge panel of the Ninth Circuit Court of Appeals ruled in California Restaurant Association v. City of Berkeley, that a similar Berkeley zero emission building code requiring all-electric new buildings was pre-empted by the federal Energy Policy and Conservation Act of 1975 (EPCA). In January 2024, the U.S. Court of Appeals for the Ninth Circuit, en banc, denied Berkeley's petition for the court to re-hear the case, which left the 2023 decision in effect. Berkeley has chosen not to further appeal the April 17 panel ruling. This ruling affects the ability to continue enforcing zero emission building ordinances in most of the 60 local jurisdictions in California.

In January 2024, the City instituted an administrative stay on enforcement of the Zero Emissions Building Code and began exploring alternative compliance pathways to achieve the City's goals of reducing carbon emissions from new buildings. The recommended alternative, called the Energy Performance Approach, is a local amendment to the 2022 California Energy Code.

Discussion

In 2019, Council adopted a goal of reducing communitywide carbon emissions 80% below 1990 levels by 2030 and achieving carbon neutrality (zero carbon dioxide emissions) by 2050 or sooner. To achieve carbon neutrality, net increases in carbon emissions from new construction and development must be mitigated by efficient design, construction, and use of on-site and grid-supplied renewable energy. As most buildings have zero emissions electricity sources supplied by the City's community

choice aggregator, Clean Power Alliance, methane gas remains the largest source of emissions in buildings.

In 2019, Santa Monica was one of the first cities in the State to adopt an electric-preferred Reach Code, which incentivized all-electric buildings by requiring a higher level of energy efficiency for mixed-fuel buildings. All-electric buildings were not subject to higher levels of energy efficiency and could be built to the State's standard design requirements.

In 2022, Santa Monica went a step further by adopting the Zero Emission Building Code (ZEB), which required all new buildings to be fully electric, with exemptions for commercial kitchens (though they had to be electric-ready), medical facilities, and labs. All-electric buildings were proven cost-effective by the Statewide Utility Codes and Standards 2019 study, in addition to the many health, environmental, and safety benefits of removing gas from new buildings. The 2022 ZEB was implemented by adding a new Chapter to the Santa Monica Municipal Code, Chapter 8.38. This effective approach to curbing emissions from new buildings was threatened by the Berkeley legal challenge in 2023, causing many cities to pause enforcement and develop alternative building policies.

In light of the 9th Circuit Panel's ruling, staff and technical consultants, alongside a growing body of state and local policy-makers, have identified local amendments to the California Energy Code (also known as a "Reach Code") to reduce greenhouse gas emissions in new buildings as the preferred alternative approach to an all-electric requirement. Since the California Energy Code only regulates certain energy uses, this approach limits the City's scope and therefore the Reach Code does not apply to cooking equipment (e.g., stoves), laundry dryers, or other unregulated energy uses.

Energy Performance Approach

The new proposed Reach Code Ordinance, called the Energy Performance Approach (Attachment B) includes requirements for new buildings that would result in lower operational greenhouse gas emissions by applying an increased source energy margin

requirement to all new buildings – both electric and mixed-fuel designs. While the proposed approach is less effective at reducing greenhouse gas emissions than the previous all-electric Zero Emission Building Code, the proposed Reach Code provides the best and most timely opportunity to continue pursuing Council's adopted climate action goals. This approach has been adopted by other California cities including San Luis Obispo, Santa Cruz, San Jose, Palo Alto, East Palo Alto, Encinitas, and Brisbane.

California Energy Code Energy Evaluation Metrics

The 2022 California Energy Code provides baseline efficiency and building performance standards that a project must meet before receiving a building permit. The California Energy Code provides different metrics for different types of buildings and is organized into three categories:

- **Single-Family Residential:** A new single-family residential building must meet or exceed "Energy Design Rating" (EDR) scores. There are three EDR score categories:
  - EDR1 (Source Energy) – a score representing a building's source energy consumption and serves as a proxy for greenhouse gas emissions.
  - EDR2 Efficiency (Efficiency Energy Design Rating) – a score representing a building's energy efficiency through the value and cost of energy consumed at different times of the day and year.
  - EDR2 Total (Total Energy Design Rating) – a score representing the building's total energy, including the value and cost of energy consumed at different times of the day and year while also factoring in solar and energy demand flexibility.

- **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.

- **Non-Residential:** A new non-residential building must also meet or exceed a standard that uses TDV energy and Source Energy emissions scores.
- The following metrics are used for both multi-family and non-residential projects:
    - Efficiency TDV - accounts for all regulated end-uses but does not include the impacts of PV and battery storage.
    - Total TDV - includes regulated end-uses accounting for PV and battery storage contributions.
    - Source Energy - based on fuel used for power generation, assuming utilities meet all Renewable Portfolio Standard (RPS) goals and other obligations projected over 15-year lifecycle.

Proposed Energy Performance Enhancements

Staff recommends that Council adopt cost effective local amendments to the California Energy Code that would improve the required EDR1 score for single family residential buildings and the required Source Energy margin scores for most other buildings. As noted in Table 1 below, new single-family residential buildings would be required to have an EDR1 score that is 5 points better (lower) than the standard design. Smaller single-family homes including accessory dwelling units (ADUs) would have a reduced requirement of scoring 2 points below the standard EDR1 score due to their smaller size and energy usage and thus lower capacity for energy improvements.

Table 1 also identifies a Source Energy performance requirement of 7% above the standard for new multi-family buildings with three stories or less, and 3% for multifamily buildings with four or more stories. New non-residential buildings would be required to exceed the standard source energy compliance margin by 2%-14% depending on the building type. Office facilities have a higher compliance margin of 14% because they tend to have larger conditioned floor areas, which translates to higher savings potential.

There would be an exemption for certain non-residential projects designed with single-zone space-conditioning systems where California Energy Code Section 140.4(a)2 is applicable because the state code prescriptively requires the use of heat pumps, making it difficult for mixed-fuel buildings to comply already.

Because of how the EDR1 and Source Energy scores are calculated in the 2022 California Energy Code, the higher performance standards proposed in the Energy Performance Approach Reach Code would encourage new buildings to include additional electric appliances/mechanical systems, while allowing mixed-fuel building designs that include additional energy efficiency and/or solar PV and battery storage measures. The enhanced performance requirements would apply equally to mixed-fuel and all-electric buildings through the Energy Code's performance pathway.

Table 1. Proposed Improved Energy Performance Standards

Building Type	**Performance Requirement**
Single Family Residential	Exceed the standard EDR1 Compliance Margin requirement by at least 5 points relative to standard design EDR1 Buildings <1,500 sqft – Exceed the standard EDR1 Compliance Margin requirement by at least 2 points
Multi-Family Residential with 3 stories or less	Exceed the standard Source Energy Compliance Margin requirement by 7%
Multi-Family Residential with 4 stories or more	Exceed the standard Source Energy Compliance Margin requirement by 3%
Non-Residential	Exceed the standard Source Energy Compliance Margin requirement by the following: **Hotel** – 7% **Small Restaurants** – 2% **Office** – 14% **All Other Building Types** – 7%

Exceptions	**Non-residential**: When non-residential occupancies are designed with single zone space-conditioning systems complying with Section 140.4(a)2.

Electric Ready Requirements

The 2022 California Energy Code requires certain mixed-fuel buildings to include "electric ready" components 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 as follows:

- Single-Family Residential – heat pump hot water heaters are prescriptively required, and "electric ready" infrastructure is required for any building that includes a gas fueled furnace, clothes dryer, and/or cooktop.
- Multi-Family Residential – "electric ready" infrastructure is required in a newly constructed multi-family residential unit that includes a gas fueled space heater, water heater, clothes dryer, and/or cooktop.

The proposed Reach Code also includes electric readiness requirements for heat pump water heaters in multifamily buildings that will be mandatory under the 2025 California Energy Code if adopted by the California Energy Commission as anticipated on September 11, 2024 (effective January 1, 2026), in addition to non-residential electric readiness requirements. These amendments will ensure that projects using gas systems initially will have the electrical capacity and space available to switch to heat pumps in the future. (The 2025 California Energy Code formal adoption was postponed to September 11, 2024. Any non-substantive changes to the adopted code language, if made, would be included in the attached Energy Performance Approach ordinance for consistency.) Adopting electric-ready measures will also make it easier for buildings to comply with forthcoming zero-emissions appliance regulations under the South Coast Air Quality Management District's (SCAQMD) Rule 1146.2.

Practical Effect of the Energy Performance Approach Reach Code

In an effort to break down the technical details of this Code amendment, 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 both the current State Code and subsequently the proposed Reach Code. To meet the minimum State Code, a building designer working on a single-family home 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 things. The designer would load the building design into a computer model and estimate its energy performance, which is common practice. The energy modeling software would provide standard reporting metrics, including an EDR1 score. The designer would then compare the EDR1 score to a standard design building on the CF-1R form. The designed building's EDR1 score would need to be equal to or lower than the standard design building's EDR1 score to comply with that part of the California Energy Code.

With the Reach Code in place, the designer would now need to achieve an EDR1 score that is 5 points better (lower) than the standard design building. If this building designer replaced the gas furnace with a commonly available heat pump HVAC system, the building would achieve a score that is 5 EDR1 points better than the State Code minimum and would be consistent with the proposed Reach Code requirements. Alternately, the building designer could keep the gas furnace and install a battery storage system, which would also result in an improvement of more than 5 EDR1 points. The building designer also has the option to develop a package of efficiency and solar measures. As long as the measures lead to an EDR1 score that is at least five points lower than the State Code minimum, it is consistent with the Reach Code.

This example is similar for the other building types where the compliance margins could be achieved by either installing electric heat pump HVAC equipment or installing some package of additional solar capacity and efficiency measures.

Cost Effectiveness

The California Energy Commission (CEC) requires any local amendments to the California Energy Code that affect energy use in regulated buildings to be cost effective

and to use less energy than the standard requirements. The CEC requires the local agency to adopt a determination that the energy standards are cost effective and to subsequently file (via a resolution) with the Energy Commission.

In support of state reach code development, the California Energy Codes and Standards Statewide Utility Program, which includes the State's Investor-Owned Utilities, has developed and published cost effectiveness studies for single family, multifamily, and non-residential new construction (Attachment C).

These studies and the associated cost-effectiveness data are highly detailed and are included to support Council's findings and policy decisions. The studies and the associated cost-effectiveness data include a calculated benefit-to-cost ratio for a wide variety of measures, building types, and climate zones. A benefit-cost value of "1" or greater illustrates that the measures save more than they cost and are therefore "cost effective." These studies and the associated cost-effectiveness data illustrate compliance with the requirements set forth under California Administrative Code Chapter 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.

Available Resources for Lower-Cost All-Electric Buildings

For projects that chose to go all-electric, the State of California, and regional entities are providing technical assistance, substantial rebates, and incentives for all-electric new buildings. In addition, the Federal Government offers tax credits and rebates for certain clean energy projects and appliances. Current incentives include:

- *California Energy Smart Homes* is a utility funded program that provides base incentives for all-electric new market rate residential buildings including $3,000 for single-family homes, $1,600 per multi-family residential unit, $1,750 per accessory dwelling unit.

- *California Electric Homes* is provided by the California Energy Commission and provides base incentives for all-electric new market rate residential buildings including $3,000 for single-family homes, $1,600 per multi-family residential unit, $1,600 per accessory dwelling unit, and $5,500 per modular or manufactured home. Incentives are increased for properties located in designated Disadvantaged Communities (DACs) or Hard to Reach (HTR) communities. Program participation is capped at $1.5 million per builder and includes additional incentives for items like induction cooktop and beyond code efficiency measures.
- *The Building Initiative for Low-Emissions Development (BUILD) Program* is provided by the California Energy Commission and includes technical support and incentives for all-electric new affordable housing including approximately $3,399 per multifamily unit and $5,500 per single-family home.
- *The Residential Clean Energy Tax Credit,* offered through the Federal Tax Code, provides a tax credit of up to 30% of the costs of new, qualified clean energy property such as batter storage technology.
- *The South Coast Air Quality Management District* is in the process of developing a Go Zero pilot incentive program to provide incentives to consumers, multifamily property owners, and small business owners, with an emphasis on overburdened communities, to install zero-emission appliances such as heat pump water and space heaters.

Public Outreach

On March 18, 2024, the Commission on Sustainability, Equity and Environmental Justice unanimously approved the staff recommendation to adopt the Energy Performance Approach to replace the Zero Emission Building Code.

On April 3, 2024, the Office of Sustainability & the Environment held a stakeholder meeting with the support of TRC, an energy consultant offering technical assistance through the Clean Power Alliance's Local Reach Codes Program, to review and discuss the proposed Energy Performance Approach. The attendees represented affordable housing developers, housing developers, architecture, and design firms, building

managers, and green building advocates. The response was positive with notable support from the affordable housing developer Community Corporation of Santa Monica. Stakeholders urged City staff to explore policy mechanisms to continue to encourage all-electric design to reduce emissions in large multi-family buildings. Local stakeholders reviewed the draft reach code ordinance and provided helpful feedback that has been incorporated into the final code language.

Environmental Review

The Energy Performance Approach Ordinance (Ordinance) is categorically exempt pursuant to Section 15308 of the California Environmental Quality Act (CEQA) Guidelines. Section 15308 exempts actions taken by regulatory agencies for protection of the environment (Class 8). The Ordinance would help to achieve the intended outcome of low-emission new buildings, and therefore, is exempt pursuant to Section 15308. In addition, this Ordinance is exempt from CEQA under Section 15061(b)(3), which states that CEQA does not apply, "where it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment." These standards are more stringent than the State energy standards, and as such, there are no reasonably foreseeable adverse impacts, and there is no possibility that the Ordinance in question may have a significant effect on the environment.

Past Council Actions

Meeting Date	***Descriptions***
05/28/2019 (Attachment A)	Adopted the Climate Action & Adaptation Plan
09/24/2019 (Attachment D)	Ordinance Adopting the 2019 California Energy Code and Local Amendments
09/27/2022 (Attachment E)	Adopted the 2022 Zero Emission Building Code and 2022 EV Charger Reach Code

Financial Impacts and Budget Actions

There is no immediate financial impact or budget action necessary as a result of the recommended action. Staff will return to Council if specific budget actions are required in the future.

Prepared By: Ariana Vito, Sustainability Analyst

Approved	**Forwarded to Council**
Rick Valte, Public Works Director 8/30/2024	David White, City Manager 9/3/2024

Attachments:

A. Climate Action & Adaptation Plan
B. 2022 Cost Effectiveness Studies (Multifamily, Single-family, Non-residential)
C. 2024 Ordinance
D. 2019 Staff Report - Electric-Preferred Reach Code
E. 2022 Staff Report: Adoption of Zero Emission Building Code
F. 2024 Resolution
G. Written Comments