AGENDA
ENERGY & GREEN ISSUES STANDING COMMITTEE MEETING

Goleta City Hall
130 Cremona Drive, Suite B
Goleta, California

Thursday, November 21, 2024
4:00-5:00 PM
Conference Room # 1

Luz Reyes-Martín, Mayor Pro Tempore
Kyle Richards, Councilmember
Robert Nisbet, City Manager
Peter Imhof, Planning and Environmental Review Director
Dana Murray, Sustainability Manager
Angeline Foshay, Management Analyst
Aliyah Latham, CivicSpark Fellow

OPTIONS FOR PUBLIC PARTICIPATION WILL BE IN PERSON OR ONLINE VIA ZOOM

If you wish to make a general public comment or to comment on a specific agenda item, the following methods are available:

Distribution to the Energy & Green Issues Standing Committee - Submit your comment via email up to Wednesday, November 20 at 5:00 PM prior to the Energy / Green Issues Standing Committee meeting. Please submit your comment to Dana Murray at: dmurray@cityofgoleta.org. Your comment will be placed into the record and distributed appropriately.

Please register for the Energy / Green Issues Standing Committee Meeting on November 21, 2024, 4:00 PM PT at:

ELECTRONIC PARTICIPATION:

Zoom Registration Link:
https://us06web.zoom.us/webinar/register/WN_KKk-g4uKSGGm5ex03YLBiw

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Webinar ID: 892 9889 4512

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After registering, you will receive a confirmation email containing information about joining the webinar. You will be connected to audio using your computer's microphone and speakers (VoIP). A headset is recommended.

AGENDA

I. Public Comment

II. Energy Performance Reach Code (Building Electrification)
- a. Update
- b. Recommendation Request

III. Program Updates

Note: In compliance with the Americans with Disabilities Act, if you need assistance to participate in this meeting, (including assisted listening devices), please contact Deborah Lopez, City Clerk, at (805) 961-7505 at least 72 hours prior to the meeting. Notification helps to ensure that reasonable arrangements can be made to provide accessibility to the meeting.

CITY OF GOLETA

DATE: November 21, 2024

TO: Energy & Green Issues Standing Committee

FROM: Peter Imhof, Planning and Environmental Review Director

CONTACT: Dana Murray, Sustainability Manager
Angeline Foshay, Management Analyst

SUBJECT: Background Information for the November 21, 2024 Energy & Green Issues Standing Committee ("Green Committee") Meeting (please see attached agenda)

ITEM I: PUBLIC COMMENT

ITEM II: ENERGY PERFORMANCE REACH CODE (BUILDING ELECTRIFICATION)

The purpose of this item is to provide an update on the state of building electrification policy in California following the *California Restaurant Association (CRA) v. City of Berkeley* court decision and to seek a recommendation whether staff should pursue an alternative policy to reduce greenhouse gas emissions from newly constructed buildings in Goleta. Staff recommends that the Green Committee consider recommending Council adoption of a decarbonization-focused Energy Performance Reach Code in the form of cost-effective local amendments to the California Energy Code.

Background:

Definitive climate data has revealed the urgent need for regulatory action. In 2016, California responded to this demand by adopting comprehensive goals to reduce GHG emissions and support local governments in carrying out community-level emissions reductions strategies. With the passage of Senate Bill 32 in 2016, California set targets to reduce statewide GHG emissions to 40% below 1990 levels by 2030 and 80% below 1990 levels by 2050. To reach these state emissions targets, decarbonizing the building sector is essential. The primary method for the decarbonization of buildings is electrification, as escalating renewable portfolio standards have been and will continue to reduce the emissions content of our electricity.

The California Air Resources Board (CARB) 2022 Scoping Plan provides an implementation pathway to meet the State's carbon reduction goals. Statewide, residential and commercial buildings are responsible for approximately 25% of California's greenhouse gas (GHG) emissions when accounting for fossil fuels, such as natural gas consumed onsite and via electricity demand. The Scoping Plan recommends all-electric buildings become standard for residential construction starting in 2026 and non-residential construction starting in 2029 to improve indoor air quality and reduce GHG emissions to meet state goals.

In 2020, Goleta's energy use (from both electricity and natural gas) accounted for 40.4% of the community's total emissions. Of that total energy use, natural gas use in buildings accounted for 40% of Goleta's energy emissions. While efforts have been made to decarbonize the natural gas system through the development of renewable natural gas, there are insufficient supplies to properly meet state and local demand, ultimately leaving the full decarbonization of the natural gas system infeasible. As stated in the 2021 California Energy Commission (CEC) Integrated Energy Policy Report, "Building electrification is the most promising decarbonization strategy and could result in significant reductions in residential and commercial building gas demand."

Taking action locally, the Goleta City Council voted unanimously to pass an all-electric new construction ordinance on April 18, 2023. However, on April 17, 2023, a three-judge panel of the Ninth Circuit Court of Appeals ruled in *CRA v. City of Berkeley*, that a Berkeley ordinance requiring all-electric new buildings was pre-empted by the federal Energy Policy and Conservation Act of 1975 (EPCA) and was therefore invalid. Due to the Ninth Circuit's decision to overturn the City of Berkeley's natural gas ban for new construction in favor of the CRA, Goleta's second reading to pass the ordinance was placed indefinitely on hold. Although there was a chance that the decision would be heard again and potentially reversed, in January 2024, the Ninth Circuit refused to consider the City of Berkeley's requested *en banc* hearing.

Based on Council feedback and unanimous interest in pursuing electrification policy from the April 18, 2023 Council meeting, staff added "New Construction Building Electrification: Evaluate Reach Code Options & Policy Development" to the 2024-2025 PER Annual Work Plan. Since the initial *CRA v. City of Berkeley* decision, many cities in California have evaluated alternative policy approaches to support new construction electrification. Staff has monitored new policy developments and collaborated with the Green Cities Network to find alternative pathways to incentivize electrification for new construction while waiting for updates on the Berkeley case. Following adoption of new Energy Performance Reach Code policies in San Luis Obispo, San Jose, Santa Cruz, Palo Alto, East Palo Alto, Brisbane, Santa Monica, and Encinitas, staff researched best practices for Reach Code policies to present to the Green Committee.

Discussion:

Staff recommends that the Green Committee consider recommending Council adoption of an Energy Performance Reach Code, as discussed in more detail below, that would increase the performance requirements for and reduce the emissions of newly constructed buildings. This Reach Code would not ban natural gas systems in new construction outright, but merely require increased building performance.

Local government efforts to make further progress on building electrification for new construction continue across California despite legal challenges associated with the *CRA v. City of Berkeley* case. Many jurisdictions with previously developed or adopted all-electric Reach Codes have been evaluating alternative options to pursue electrification and decarbonize their new and existing building stock. Notably, the Cities of San Luis Obispo, San Jose, Palo Alto, East Palo Alto, Santa Monica, Brisbane, Encinitas and Santa Cruz have recently adopted Energy Performance Reach Codes in late 2023 and throughout 2024, which Goleta staff have been tracking closely.

With the City's all-electric ordinance for new construction on pause, supporting policies and programs that incentivize and remove barriers to electrification in existing buildings provides an opportunity to reduce carbon emissions and improve indoor air quality for Goleta residents. According to CARB, buildings emit about 66 tons per day (tpd) of NOx to the ambient air, about four times the emissions from electric utilities and nearly two-thirds the emissions from light-duty vehicles statewide. Electric heat pumps for space and water heating are more efficient than their natural gas counterparts and have the added safety benefits of lowering the potential for carbon monoxide poisoning and gas explosions.

The most cost-effective time to electrify is during the development of new construction, and new construction provides the best opportunity to avoid "lock-in emissions" which would be created through the inclusion of natural gas infrastructure in new buildings. While it will yield less emissions savings than an all-electric Reach Code, the City can still further support all-electric projects by increasing energy efficiency, solar, and/or battery requirements for both mixed fuel and all-electric buildings because it is typically easier for all-electric buildings to comply.

Based on these observations, staff recommends adopting an Energy Performance Reach Code to reduce greenhouse gas emissions from new buildings.

Proposed Approach

The *California Restaurant Association v. City of Berkeley* ruling limits how the City can reduce emissions from new buildings. Staff 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.

The proposed Energy Performance Reach Code would include requirements for new buildings that would result in higher efficiency and lower operational greenhouse gas emissions. To be consistent with state law, the City must make findings that the proposed Building Code amendments related to building energy performance are cost-effective and use less energy than the standard State Code. The California Energy Commission (CEC) must agree with the City's analysis before the local amendments to the California Energy Code can go into effect.

The California Energy Code establishes whole-building efficiency requirements, which account for a building's water heater, HVAC (heating, ventilation, and air conditioning) system, solar generating system, and insulation, among other things. However, it does not account for cooking equipment, laundry dryers, or other unregulated energy uses. As such, the proposed Energy Performance Reach Code does not regulate cooking equipment, laundry dryers, fireplace, outdoor cooking, or other energy uses not addressed by the California Energy Code.

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 (the definitions provided in this section are simplified for brevity, for more information, visit: https://energycodeace.com/resources/?itemId=66025):

- **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) – 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.

- **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 a 15-year life cycle.

Proposed Energy Performance Enhancements

Public Resources Code Section 25402.1(h)(2) and Section 10-106 of the Building Energy Efficiency Standards establish a process that allows local adoption of energy standards that are more stringent than the statewide standards. Under this process, 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.

Staff recommends that the Green Committee consider recommending Council adoption of cost-effective local amendments (referred to as a "Reach Code") to the California Energy Code that would increase building performance requirements by increasing the

required EDR1 compliance margin for single-family residential buildings and the required Source Energy compliance margin for most other buildings. As noted in Table 1 below, the EDR1 of single-family residential new buildings would be required to be less than the EDR1 of the standard design by a compliance margin of at least 5 points. Smaller single-family homes, including accessory dwelling units (ADUs), would have a reduced compliance margin requirement of 2 points due to their smaller size and energy usage and thus lower capacity for energy improvements.

Table 1 also identifies a Source Energy performance requirement for new multi-family residential buildings (7% better than code for low-rise [three stories or fewer], 3% better for high-rise [four stories or more]). New non-residential buildings would be required to have a compliance margin of 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.

Due to how EDR1 and Source Energy scores are calculated in the 2022 California Energy Code, the higher standards proposed in the Reach Code would incentivize new buildings to select electric appliances/mechanical systems, while also allowing mixed-fuel buildings that include energy efficiency measures, solar, and/or a battery. The enhanced performance requirements would apply equally to mixed-fuel and all-electric buildings and are cost-effective to achieve through the Energy Code's performance pathway without requiring appliances that exceed federal efficiency standards.

Table 1. Proposed Improved Energy Performance Standards

Building Type	Performance Requirement
Single-Family Residential	EDR1 compliance margin of at least 5 points Buildings <1,500 sq. ft .– EDR1 compliance margin of at least 2 points
Multi-Family Residential (Low)	Source Energy compliance margin of at least 7%
Multi-Family Residential (High)	Source Energy compliance margin of at least 3%
Non-Residential	Source Energy compliance margin of at least the following: Hotel – 7% Small Restaurants – 2% Office – 14% All Other Building Types – 7%
Exceptions	**Single Family:** Could include an exception for ADUs that can demonstrate technical infeasibility to the building official.

	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.

Practical Effect of the Energy Performance Reach Code

Because the City is working within the confines of the California Energy Code, the description of the proposed approach above is inherently technical. 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 Energy Performance Reach 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 things. The designer would load the building design into a computer model and estimate its energy performance. 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 be equal to the standard design building's EDR1 score and would comply with that part of the California Energy Code.

With the Reach Code in place, the designer would now need to achieve an EDR1 compliance margin that is 5 points better than the standard design building. If this building designer replaced the gas furnace with a commonly available electric heat pump HVAC system, the building would achieve an EDR1 compliance margin that is 5 points better than the 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 improved EDR1 compliance margin of more than 5 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 increased EDR1 compliance margin of 5 or more points better than the Code minimum, the new building 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 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 at a public meeting. The determination must subsequently be filed with the Energy Commission. In support of Reach Code development, the California Energy Codes and Standards Statewide Utility Program developed and published the following studies:

- 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 Code: 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 Green Committee and Council's findings and policy decisions. 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 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. In short, using the California Energy Commission's TDV metric, the proposed amendments save more than they cost to implement.

Public Engagement

As described in the 2023 Council Agenda reports, extensive outreach was conducted in various community forums and settings affirming that all-electric new buildings are feasible, cost-effective, and supportive of the City's climate action goals. The City coordinated and collaborated with the County of Santa Barbara, City of Carpinteria, and numerous utilities, consultants and energy-focused organizations to conduct outreach. The regional group organized an Advisory Committee of stakeholders, hosted multiple public workshops discussing Reach Codes and the benefits of electrification, and conducted targeted outreach to the South Coast Chamber of Commerce, the Joint Affordable Housing Task Group, Santa Barbara Association of Realtors and the Regional Climate Collaborative Equity and Outreach Subcommittee. The work conducted in support of the previous all-electric Reach Code provides a groundwork of understanding around building electrification in the community and supports any future Council policies related to low-emissions new buildings.

Staff has continued to collaborate with the County of Santa Barbara, City of Santa Barbara, and the City of Carpinteria, including recent meetings with regional stakeholders

such as the South Coast Chamber of Commerce Public Policy Committee and Santa Barbara Association of Realtors.

Should Green Committee recommend that staff bring the proposed Energy Performance Reach Code to full Council, staff would conduct additional community outreach on this new policy approach, likely through virtual workshops and forums, targeted stakeholder outreach, and developing additional resources to provide on the City's website.

Recommendations & Next Steps:

Staff recommends that the Green Committee consider recommending Council adoption of an Energy Performance Reach Code, as discussed above. Should City Council move forward with the proposed Energy Performance Reach Code based on the Committee's recommendation, staff would submit the Reach Code to the California Energy Commission for approval of the local amendments to the California Energy Code, prior to it taking effect.

It is important to note that the California Building Code, which includes the California Energy Code, is updated every three years. Should Green Committee recommend Council's adoption, and Council adopt staff's recommendation, the local Reach Code would expire with the current Building Code on December 31, 2025. Staff is already coordinating regionally with other jurisdictions in San Luis Obispo County and Santa Barbara County on developing potential Reach Codes for the next cycle.

ITEM III. PROGRAM UPDATES