



CITY OF SAN MATEO

City Hall
330 W. 20th Avenue
San Mateo CA 94403
www.cityofsanmateo.org

Agenda Report

Agenda Number: {{item.number}}

Section Name: {{section.name}}

File ID: {{item.tracking_number}}

TO: City Council
FROM: Drew Corbett, City Manager
PREPARED BY: City Manager's Department
MEETING DATE: July 20, 2020

SUBJECT:
New Multifamily Construction Building Electrification – Policy Options

RECOMMENDATION:

Provide feedback and direction on policy options to encourage or require building electrification in new multifamily construction.

BACKGROUND:

Every three years the State of California updates the California Building Standards Code and with each update, the Energy Code section becomes more stringent. Jurisdictions can adopt local amendments that exceed the State's codes, often referred to as "reach codes" to encourage more sustainable construction. The adoption of reach codes has been an important approach to meeting the City's Climate Action Plan goals and reducing greenhouse gas emissions from the built environment.

Building electrification means constructing buildings without any natural gas services and using electric appliances and systems for space heating, water heating, clothes drying and cooking. Building electrification is gaining traction since electricity can now be provided from greenhouse gas (GHG) free sources from Peninsula Clean Energy, whereas natural gas is a fossil fuel that will always have associated GHG emissions. In 2019, City Council adopted building electrification reach codes for the 2019 Code Cycle that went into effect on January 1, 2020 that impacted single family and duplex homes and buildings with office use. At the time of reach code development, a cost-effectiveness study was not available to adopt a building electrification reach code addressing mid-rise multifamily construction, and City Council directed staff to return with potential reach code options when a study became available.

In March 2020, the Mid-Rise Multifamily Residential Cost-Effectiveness Study results were released showing cost-effective options to encourage or require building electrification in new multifamily construction. Staff presented the Cost-Effectiveness Study results and proposed building electrification reach codes at the May 13, 2020 Sustainability and Infrastructure Commission (SIC) meeting. This report reviews the City's adopted building electrification reach codes, introduces building electrification policy options, and presents SIC and stakeholder feedback.

2019 Adopted Building Electrification Reach Codes

In 2019, the City adopted reach codes to encourage building electrification. Briefly, there are a few legal requirements for reach code adoption. The reach code must be cost-effective, at least as stringent as the State Energy Code, and approved by the California Energy Commission. In order to adopt a "reach code," the adopting city must adopt findings that "local climatic, geological, or topographical conditions" render a local amendment necessary (CA Health and Safety Code Sections 17958.5 and 17958.7). Finally, a reach code needs to be re-approved with each Energy Code update; the 2019 Code Cycle ends on December 31, 2022.

The City’s adopted reach codes encourage building electrification by giving builders the choice of two options, either building an all-electric building at the minimum efficiency as required by the Energy Code, or building a mixed-fuel building (uses electricity and natural gas) at a higher energy efficiency level than the Energy Code. This approach is often called the “Electric Preferred Reach Code” approach since it gives preference to all-electric buildings. The City’s adopted Electric Preferred Reach Code encourages building electrification in single-family, duplex, and non-residential buildings with office use as summarized in Table 1.

Table 1: Adopted Building Electrification Reach Codes

	Adopted Reach Code (percentage above State Energy Code)
Single Family and Duplex	Two compliance pathways: 1) All-electric 0% 2) Mixed-fuel 15%
Non-residential Buildings with Office Use	Two compliance pathways: 1) All-electric 0% 2) Mixed-fuel 10%

Building Electrification Policy Options

To encourage or require building electrification in new construction, jurisdictions can adopt reach codes or municipal ordinances. At the May 13, 2020 SIC meeting, staff proposed building electrification reach codes that align with the City’s adopted Electric Preferred Reach Code approach. Since the SIC meeting, there has been increased interest from environmental advocates to consider mandating all-electric new construction. This report outlines the different policy options to encourage or require all-electric new multifamily construction. Additionally, the City can also consider revising the adopted Electric Preferred Reach Codes to mandate all-electric construction in other building types. Some cities have adopted reach codes that require the installation of specific electric appliances in buildings; however, staff does not believe that this approach can be supported by the findings in the cost-effectiveness studies. As a result, staff recommends the following three approaches to encourage or require all-electric new construction:

Reach Code: Electric Preferred

The Electric Preferred Reach Code approach option aligns with the City’s adopted reach codes. This reach code follows the California Energy Commission requirements and approval process as outlined the previous section of this report. Through the Electric Preferred Reach Code approach, new all-electric multifamily buildings would be required to be built to the State’s Energy Code, and new multifamily mixed-fuel buildings would be required to exceed the State’s Energy Code as summarized in Table 2. The proposed reach code is a flexible approach to encourage all-electric construction. Other jurisdictions that have adopted the Electric Preferred Reach Code approach include Marin County, Santa Monica, and Davis.

Table 2: Electric Preferred Reach Codes for New Multifamily

	Proposed Reach Code (percentage above State Energy Code)
Low-rise Multifamily Residential Buildings (Three stories or less)	Two compliance pathways: 1) All-electric 0% 2) Mixed-fuel 0.5 Efficiency Energy Design Rating Margin* (equates to roughly 5% compliance margin)
Mid-rise Multifamily Residential Buildings (Four stories or more)	Two compliance pathways: 1) All-electric 0% 2) Mixed-fuel 5%

For low-rise residential buildings (three stories or less), the Low-Rise Residential Cost-Effectiveness Study found that it is cost-effective to require mixed-fuel buildings to have an Efficiency Energy Design Rating (EDR) margin of 0.5. The EDR metric is a new metric introduced in the 2019 Residential Energy Code to measure energy efficiency. The Cost-Effectiveness Study shows that it is cost-effective to require a 0.5 Efficiency EDR margin, or roughly 5% compliance margin, for new mixed-fuel low-rise residential buildings.

For mid-rise residential buildings (four to seven stories of habitable space), the Mid-Rise Multifamily Residential Cost-Effectiveness Study found that it is cost-effective to require mixed-fuel buildings to achieve a 6.7% compliance margin. The California Green Building Code includes “Cal Green Tiers” that require various types of sustainable design standards and can be adopted by jurisdictions voluntarily. Cal Green Tier 1 requires that mid-rise residential multifamily buildings achieve a 5% compliance margin. Staff recommends a 5% compliance margin to align with Cal Green Tier 1 requirements.

Reach Code: All-Electric Pathway Required

Jurisdictions can also require all-electric construction through a reach code. Instead of providing two options to builders, a jurisdiction can adopt a reach code that only allows for the all-electric pathway, thus requiring all-electric new construction. An all-electric reach code requirement can be adopted for all types of new construction, including new multifamily buildings. An all-electric reach code requirement is also a local amendment to the Energy Code that follows the California Energy Commission requirements and approval process.

The City of Palo Alto adopted a reach code requiring all-electric single-family and low-rise multifamily construction that went into effect April 2020. Palo Alto staff is currently evaluating whether this requirement can be expanded to all new construction, including accessory dwelling units. While Palo Alto staff is exploring the all-electric mandate for other building types, the City of Palo Alto adopted an Electric Preferred Reach Code for new mid-rise/high-rise multifamily and non-residential construction that went into effect April 2020.

In January 2020, the County of San Mateo adopted reach codes for unincorporated County requiring all-electric new construction with exceptions for commercially operated restaurants, scientific lab buildings, and public agency owned emergency centers. The City of Burlingame is currently drafting a reach code requiring all-electric new multifamily and non-residential construction. The Town of Windsor adopted a reach code requiring all-electric new low-rise residential development that went into effect January 1, 2020.

Municipal Ordinance: New Natural Gas Infrastructure Prohibition

The City of Berkeley and City of San Jose used their police powers to amend their municipal codes to prohibit new natural gas infrastructure in new construction. This is a distinctly different approach from California Energy Commission process for amendments to the Energy Code.

In July 2019, the City of Berkeley became the first jurisdiction in the nation to adopt a municipal ordinance that prohibits natural gas infrastructure (i.e. gas hookups) in new buildings. Their ordinance applies to new buildings that apply for land use entitlements after January 1, 2020.

In October 2019, the City of San Jose adopted a municipal ordinance prohibiting new natural gas infrastructure in detached accessory dwelling units, single-family homes and low-rise multifamily buildings. The City of San Jose’s ordinance applies to the entitlement of or the processing of development applications of those building types and went into effect January 1, 2020. The City of San Jose staff are reviewing the Mid-rise Multifamily Residential Cost-Effectiveness Study analysis and plan to present an ordinance to prohibit new natural gas infrastructure in new mid-rise/high-rise multifamily and non-residential construction in August 2020 to cover all building types.

SIC and Developer Feedback

At the May 13, 2020 SIC meeting, staff presented the Cost-Effectiveness Study results and the Electric Preferred Reach Codes for new multifamily construction. The SIC supported the Electric Preferred Reach Code approach and emphasized the importance of having an incentive-based approach that provides options for builders. The SIC directed staff to gather feedback and comments from multifamily developers before presenting these reach codes at a City Council Study Session

so that City Council could fully understand the impacts on our development community.

Staff reached out to 14 active developers in San Mateo to discuss the different building electrification policies for new multifamily construction and nine developers responded. Five developers indicated they already planned to build all-electric multifamily buildings in San Mateo including Waters Park, Concar Passage, 1919 O'Farrell, MidPen Affordable Housing Project, and Peninsula Heights, amounting to 1,714 new all-electric multifamily units. These projects mark a new trend in San Mateo for all-electric multifamily construction.

All developers understood the interest and the intent of San Mateo's reach code to reduce greenhouse gas emissions and encourage more sustainable construction. Developers appreciated that the Electric Preferred Reach Code approach offers options and flexibility. Primary concerns about an all-electric mandate are:

- Some developers have found that the heat pump hot water heaters are challenging because they take up more space compared to the gas alternative.
- Some developers found heat pump hot water heaters have higher labor and equipment costs than the gas alternative.
- There was concern for the increased utility bills for residents since electricity costs more than gas.
- There was interest in allowing for limited natural gas use in common areas to support outdoor fire pits, grills, etc.
- Multiple developers cited consumer demand for gas stovetops, specifically for single family and condominium units.
- Multiple developers cited the significance of natural gas use for commercial kitchens.
- There was some concern brought up related to resilience and reliance on electricity. However, having gas appliances does not support resilience as most modern gas equipment depends on electricity to operate. In serious emergencies, both electricity and natural gas would both be shut off.

Policy Discussion

Jurisdictions rely on specific analyses called "cost-effectiveness studies" to justify the adoption of local amendments to the Energy Code. The California Energy Commission requires that jurisdictions adopt cost-effective reach codes that meet or exceed the Energy Code. The studies analyze and identify cost-effective all-electric and mixed-fuel pathways for various building types. The studies find that for low-rise residential and for mid-rise multifamily buildings, it is often cheaper to build all-electric. Much of the cost savings can be attributed to the savings from not installing new natural gas infrastructure. Even though the analysis shows that it is the cheaper option, builders don't always choose this option. Developers are still gaining familiarity with all-electric technologies and multiple developers cited concern about market demand for gas stovetops, in addition to some of the challenges provided in the developer feedback section of this report.

Jurisdictions across the region have taken a variety of approaches to encourage and require building electrification in new construction. Jurisdictions can adopt different reach code approaches for different building types. The City can also consider adding exceptions for projects that received entitlements prior to the ordinance effective date.

Some cities have used the method established in the California Energy Code and relied on studies to show that all-electric requirements are cost-effective. Instead of using the method provided for in the California Energy Code, some cities have relied on their independent police power to adopt municipal ordinances. As discussed below, there is pending litigation regarding a city's ability to rely on its police power instead of the California Energy Code and no decision has been rendered yet.

Some cities that mandated all-electric new construction have been subject to lawsuits challenging these mandates. In November 2019, the California Restaurant Association sued the City of Berkeley in federal court after the City enacted its ban. The Berkeley plaintiffs have argued that the City of Berkeley is preempted by the California Energy Code and required to use the methodology set forth in the state law instead of relying on its own police power. Also, in November 2019, two developers filed separate lawsuits in state court against the Town of Windsor. Both lawsuits argue that the Town of Windsor's use of CEQA exemptions was inappropriate and that the Town should have done a full environmental review. Both lawsuits are still pending.

In recent news, PG&E filed a letter with the California Energy Commission stating PG&E supports efforts to promote all-electric new construction, when feasible and cost-effective, as part of a 2022 update to the California's Energy Code. PG&E is the first combined electricity and gas utility to publicly provide this support. It is uncertain what the CEC will include as part of the next code cycle update, but building electrification measures may be a consideration.

Next Steps

Staff seeks direction and feedback on the policy options that encourage or require building electrification in new multifamily construction. Additionally, staff seeks feedback and direction on whether there is interest in revising the City's adopted Electric Preferred Reach Codes. Depending on City Council feedback, staff would draft a reach code or municipal ordinance to present to City Council for review and adoption.

As with the previous set of reach codes, building electrification reach codes need to be filed with the California Energy Commission (CEC), which also requires a 60-day comment period. The ordinance would go into effect after City Council adoption and CEC approval. Staff aims to move quickly so that the proposed ordinance goes into effect as soon as possible to maximize the effective time of the ordinance. All of the City's adopted reach codes expire at the end of the 2019 Code Cycle on December 31, 2022 and would need to be reviewed and readopted for the next code cycle that begins January 1, 2023. The standard municipal ordinance adoption process would apply to a natural gas prohibition ordinance. The ordinance could go into effect 30 days after the second reading.

BUDGET IMPACT:

There is no fiscal impact related to this report.

ENVIRONMENTAL DETERMINATION:

Providing direction on building electrification policy options is not a project subject to CEQA, because the City Council is providing direction to City staff and the City is not taking action at this time. (Public Resources Code Section 21065.)

NOTICE PROVIDED

All meeting noticing requirements were met.

ATTACHMENTS

Att 1 – Public Comment

STAFF CONTACT

Andrea Chow, Sustainability Analyst
achow@cityofsanmateo.org
(650) 522-7007