



City Council Agenda Item Staff Report

CITY OF SAN BRUNO

DATE: October 11, 2022

TO: Honorable Mayor and Members of the City Council

FROM: Jovan Grogan, City Manager

PREPARED BY: Darcy Smith, Assistant City Manager

SUBJECT: Hold Public Hearing, Read by Title Only and Adopt an Ordinance of the City of San Bruno Amending Chapter 11.06 (Energy Code) of Title 11 (Buildings, Construction and Fire Protection) of the San Bruno Municipal Code and Adopting by Reference the 2022 California Energy Code and Amending Chapter 11.07 (Green Building Code) of Title 11 (Buildings, Construction and Fire Protection) of the San Bruno Municipal Code and Adopting by Reference the 2022 California Green Building Code

BACKGROUND: Reach Codes are local amendments that exceed the Building Energy Efficiency Standards Code and Green Building Standards Code. The adoption of Reach Codes aim to reduce greenhouse gas emissions (GHGs) by reducing reliance on natural gas and gasoline through refocusing energy consumption towards electrification. California state law allows local governments to impose additional measures beyond the California Building Energy Efficiency and the Green Building Standards Codes through the adoption of Reach Codes.

The City's effort to adopt Reach Codes started as part of the 2021-2022 strategic initiatives. The City Council has previously discussed and provided direction on Reach Codes at a Study Session on March 8, 2022.

On September 13, 2022, the City Council introduced, read by title only and waived further reading of the Reach Code ordinance by a vote of 5-0-0. The City Council also set the public hearing for adoption of the ordinance for October 11, 2022.

DISCUSSION: The purpose of this item is to serve as a public hearing and adoption of the ordinance. A public hearing is required for adoption of state codes by reference pursuant to Government Code Sections 50022.1, et. seq. No changes have been made to the ordinance since introduction action on September 13, 2022. The ordinance is provided as Attachment 1.

Reach Codes go beyond the goal of energy efficiency and seek to reduce GHGs by eliminating reliance on natural gas in newly constructed buildings. This is done by requiring all new construction to 1) be built to utilize only electric appliances and 2) include some level of electrical vehicle charging capability. Staff recommends the adoption of All-Electric Reach Codes, with certain exemptions, as local amendments to the 2022 California Energy Code (Title 24, Part 6) and the 2022 California Green Building Standards (Title 24, part 11) to align with the next code cycle which begins January 1, 2023. Reach Codes must be shown to be cost-effective prior to the adoption, meaning that the cost saved from the reduced energy needs to

be enough to cover the initial cost within a reasonable period of time. Attachment 2 indicates the summary of the proposed local requirements for new construction residential and non-residential buildings. Attachment 3 includes a list of the six exemptions to the proposed ordinance, which were reviewed by the City Council on March 8, 2022.

2022 California Energy Code and Reach Code Ordinance Requirements

To align with the direction of the State's goal in reducing reliance on natural gas and gasoline, the California Energy and Green Building Codes become more stringent each code cycle. In addition to new buildings, the Energy Code standards also apply to substantial upgrades to existing homes and businesses. The proposed Reach Codes ordinance only applies to new construction, however, the existing buildings with substantial upgrades must comply with the Energy Code, Table 1 shows an overview of the 2022 Energy Code updates:

Table 1: 2022 California Energy Code Updates for New Construction	
Code Updates	Code Impact
Encouraging electric heat pump technology and use	Heat pumps use less energy and produce fewer emissions than traditional HVACs and water heaters
Establishing electric-ready requirements when natural gas is installed	Electric-ready building sets up owners to use cleaner electric heating, cooking, and electric vehicle (EV) charging when they're ready to invest in those technologies
Expanding solar photovoltaic (PV) system and battery storage standards	Using battery storage allows onsite energy to be available when needed and reduces the grid's reliance on fossil fuel power plants
Strengthening ventilation standards to improve indoor air quality	Better ventilation can reduce illness from poor air quality and reduce disease transmission

New Homes to be Electric-Ready

The 2022 Energy Code standards require single-family homes to be electric-ready, including:

- Electrical circuits for space heating, water heating, cooking/ovens, and clothes dryers.
- Electrical panel, branch circuits, and transfer switch for battery storage.
- Dedicated circuits and panels to easily convert from natural gas to electric in the future.

The New Standard Heat Pumps

Heat pumps are an electric technology for water and space heating that increases efficiency, reduces GHGs, and enables load flexibility. Current California market share is less than 6 percent in new home construction. The 2022 Energy Code standards include:

- Single-family homes: heat pump water or space standard.
- Multifamily homes such as apartment buildings: heat pump space heating standard.

- Businesses: heat pumps standard for schools, offices, banks, libraries, retail, grocery.

Solar and Storage Use Expanded

The 2022 Energy Code extends solar and introduces battery storage standards to the following building types:

- High-rise multifamily (apartments and condos)
- Hotel-motel
- Tenant space
- Office, medical office, and clinics
- Retail and grocery stores
- Restaurants
- Schools
- Civic (theaters, auditoriums, and convention centers)

2022 Energy Code Proposed Amendments

The Reach Codes Ordinance is more stringent than the Energy Code in that it requires all new construction to include electric appliances. The 2022 Energy Code requires new construction to be “electric ready,” which requires battery storage, and/or pre-wiring for appliances. For new buildings that are exempt from the Reach Codes, construction is required to comply with the 2022 Energy Code’s requirement to include electric-ready appliances requirements.

The following outlines the proposed Ordinance requirements for building electrification:

Proposed Building Electrification Requirements:

- New single-family homes, accessory dwelling units, and low-rise and high-rise multifamily buildings are required to use electric for space heating, water heating, cooking and clothes dryers. It provides an exception for the use of natural gas for fan-type central furnaces, fireplaces, pool heaters, and spa heaters.
- New non-residential buildings are required to be built all-electric for space heating, water heating, cooking, and clothes dryer. It provides exception for the use of natural gas cooking appliances for restaurants and food services.
- All new buildings must be built to be electric-ready if they are allowed to use natural gas appliances through an exception.

2022 California Green Building Code and Reach Code Ordinance Requirements

2022 California Green Building Code (CALGreen) reflects certain amendments to align with California’s efforts to reach its climate and air quality goals. CALGreen strengthens the Energy Code by streamlining pathways for buildings to obtain and meet Energy Code compliance requirements and building performance standards. Table 2 highlights the shift in the overall focus areas from the 2019 CALGreen code cycle to the 2022 code cycle:

Table 2: CALGreen Priorities

2019 CALGreen Priorities	2022 CALGreen Priorities
The 2019 CALGreen code went into effect January 1, 2020 and focuses on mandatory measures that require EV infrastructure, increase efficient water use, provide cleaner air quality, and maintain pollutant control.	The 2022 CALGreen code goes into effect January 1, 2023 and focuses on battery storage system controls, demand management, heat pump space and water heating, and building electrification.

The City's proposed ordinance focuses on the EV charging station requirements for new construction buildings. The state has a goal of having 1.5 million zero-emission vehicles on the roads by 2025. Under the 2022 CALGreen Code, the electric vehicle charging requirements only apply to new projects. Remodels and additions are not required to comply with the electric vehicle charging station requirements.

Through a recent vote by the California Air Resources Board (CARB), there is a projected ban to the sale of new gasoline driven cars by 2035. The board's new rules also would set interim quotas for zero-emission vehicles, focusing on new models. Starting in 2026, 35 percent of new cars, SUVs and small pickups sold in California would be required to be zero-emission vehicles. That would increase each year and is expected to reach 51% of all new car sales in 2028, 68 percent in 2030 and 100% in 2035. According to CALGreen Energy Services, California will need an additional 1.2 million chargers to meet the needs of an all-electric new vehicle requirement.

Electric Vehicle Code Terminology

The 2022 CALGreen provides definitions for EV terminology to assist in understanding the intent, as shown in table 3:

Table 3: EV Charging Readiness Types

Readiness	Description
EV Capable	Conduit is installed to parking space, and building electrical system has ample capacity to serve future load. An electrician would be required to complete the circuit before charging is possible
EV Ready	Parking space is provided with all power supply and associated outlet, such that a charging station can be plugged in and a vehicle can charge
EV Charging Station (EVCS)	All supply equipment is installed at a parking space, such that an EV can charge without additional equipment

EV charging capacity and speed can be summarized as three categories:

Table 4: Electrical Vehicle Charging Capacity/ Speed

Capacity/ Speed	Description
Level 1	3-4 miles per charging hour · Equivalent to a standard home outlet
Level 2	10-20 miles per charging hour · Service capacity typically used for larger appliance loads in homes
Level 3	150+ miles per charging hour · Used for Tesla Superchargers and DC Fast Chargers at some supermarkets

2022 CALGreen EV Proposed Amendments

The ordinance requirements are more stringent than the CALGreen Code in that it requires all new construction to include more electric vehicle spaces and EV chargers than required by CALGreen. For new buildings that are exempt from the Reach Codes, the project shall align with the 2022 CALGreen's requirements.

Proposed EV Infrastructure Requirements:

- New one- and two- family dwellings, townhouses, and accessory dwelling units with attached private garages re required to install one Level 2 EV Ready Space and a level 1 Ready Space for each dwelling unit.
- Multifamily buildings < 20 dwelling units would be required to:
 - Install one Level 2 EV Ready space for each unit with parking.
 - 30% of the total number of parking spaces on a building site shall be electric vehicle charging spaces
 - 25% of the total number of parking spaces shall be equipped with low power Level two (2) EV charging receptacles
- Non-residential Buildings for warehouses, grocery stores, offices, and retail stores with planned off-street loading spaces shall comply with CALGreen Table 5.106.5.3.1:
 - 30% of total parking spaces shall be EV Capable spaces
 - 33% of total parking spaces shall be EVCS spaces

Cost Effectiveness Study

The CEC considers an energy efficiency measure cost effective if the total utility savings over the estimated useful life of the energy efficiency measure exceeds the difference of costs between the measure and the base line measure of mixed-fuel energy usage. For example, requiring all-electric space conditioning in single-family homes would be considered cost effective, if the total utility savings over 30 years exceeds the additional cost of the all-electric equipment when compared to the cost of a natural gas powered space conditioner.

In developing the Reach Codes, staff relied on openly accessible cost effectiveness studies. The studies were prepared in coordination with Pacific Gas & Electric and other California based utilities for utility users throughout the state. These studies have been cited by other local cities adopting Reach Codes. In addition to these studies, staff worked with PCE, members of the Statewide Codes & Standards Program, and the Bay Area Regional Energy Network (BayREN) to interpret the study results. The cost effectiveness study based on building type can be accessed from the City's Reach Codes webpage.

For future and ongoing technical support, PCE has collaborated with TRC, a construction and engineering firm, to provide free technical assistance to design professionals, architects, contractors, and other consultants to incorporate Reach Code requirements in their projects. This assistance includes online and in-person discussions on building electrification. Interested parties may sign up for assistance at www.allelectricdesign.org. TRC will help developers explore building electrification and resolve complex design challenges.

Ordinance Exemptions

The ordinance includes all six exemptions in the ordinance, however, there is a modification to exemption number 3 Accessory Dwelling Units (ADUs) or Junior Accessory Dwelling Units (JADUs), as previously reviewed by the City Council. The 2022 Building Code has identified ADU's as Single-Family Residential uses. As Single-Family Residential are not proposed to be exempt from the proposed Reach Codes ordinance, only JADU's will remain as part of exemption 3.

Next Steps

Should the ordinance be adopted, staff will file the ordinance with the California Building Standards Commission and the California Energy Commission for acceptance. The ordinance would be effective at the latter date of January 1, 2023, or after the approval of CEC and CBSC.

Staff will also develop an implementation plan to prepare the necessary protocols and procedures for development applicants to comply with the Reach Codes. Staff also plans on working on the new permit application software implementation process, to obtain reporting for Reach Code compliant new construction and exempt new construction projects.

FISCAL IMPACT: There is no fiscal impact from the adoption of the ordinance.

ENVIRONMENTAL IMPACT: The action is not a project subject to CEQA. City Council's action is not considered a "Project" per CEQA Guidelines and therefore no further environmental analysis is required.

RECOMMENDATION: Hold Public Hearing, Read by Title Only and Adopt an Ordinance of the City of San Bruno Amending Chapter 11.06 (Energy Code) of Title 11 (Buildings, Construction and Fire Protection) of the San Bruno Municipal Code and Adopting by Reference the 2022 California Energy Code and Amending Chapter 11.07 (Green Building Code) of Title 11 (Buildings, Construction and Fire Protection) of the San Bruno Municipal Code and Adopting by Reference the 2022 California Green Building Code

ALTERNATIVES: 1. Direct staff to make modifications to the ordinance; substantive modifications will require re-introduction at a subsequent meeting.

ATTACHMENTS:

Attachment 1: Ordinance Amending SBMC Chapter 11.06 and Chapter 11.07

Attachment 2: Reach Codes Summary Table

Attachment 3: Reach Codes Exemption Report