



Legislation Text

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Report regarding an informational update on a proposed ordinance to adopt an all-electric Reach Code for new nonresidential construction and Electric Vehicle Charging infrastructure reach code for new residential and nonresidential construction. (*Christina Fernandez, Chief Sustainability Officer; Leila Silver, City Consultant-ID 360; and Philip Perry, Chief Building Official*)

RECOMMENDATION

Staff recommends the Planning Commission receive report and provide feedback on the proposed adoption of an ordinance amending the 2022 California Green Building Standards Code to 1) require newly constructed nonresidential buildings to be all-electric, with limited exceptions and 2) establish electric vehicle (EV) charging infrastructure requirements for residential and nonresidential new construction that are more stringent than statewide standards.

BACKGROUND/DISCUSSION

The City of South San Francisco (the City) is committed and uniquely positioned to become a regional climate leader and has taken the initiative to update its original 2014 Climate Action Plan (CAP) to align with new State regulations and targets to combat climate change. The CAP update sets targets to achieve carbon neutrality by 2045 which aligns with the States targets and exceeds goals set by the original 2014 CAP. The City joined Peninsula Clean Energy (PCE) in 2016, a public, locally controlled electricity provider, that provides the City with access to carbon free electricity generated 100% by renewable sources.

As a strategy to support the CAP, on June 9, 2021, City Council adopted the City's first local building electrification "reach code" (local amendments that impose more stringent standards than state building code requirements) that required all new appliances in single-family and multi-family buildings to be electric (all-electric required). Additionally, new single-family and multi-family buildings were subject to increased electric vehicle (EV) charging requirements. The local amendments impacted residential projects that submitted for building permit under the 2019 code cycle and exempted all new nonresidential construction. The 2019 requirements were carried over to the 2022 code cycle and adopted as an amendment to the California Energy Code (Title 24, Part 6) by Council on December 14, 2022.

In October 2022, City staff provided an update to Council on the additional outreach conducted to the local business and development community regarding building electrification and EV reach codes. During the study session, staff also presented the potential building electrification and EV reach code options available for local adoption under the 2022 building code cycle. Staff requested direction from Council on the preferred reach code options related to building electrification and EV charging stations for new construction.

Per the direction of City Council, staff has included the following in the proposed ordinance amending 2022 California Green Building Standards Code (CALGreen, Title 24, Part 11): 1) all-electric requirements for nonresidential new construction (with limited exemptions) and 2) enhanced EV charging infrastructure requirements for new single-family, multi-family, and nonresidential buildings using the PCE model code.

Reach Code Adoption Process

The State of California adopts new building standards, organized in Title 24 of the California Code of Regulations, also referred to the California Building Standards Code, every three years. The triennial timeframe is known as a code cycle, and the current code cycle (2022 code) went into effect on January 1, 2023. Local jurisdictions may adopt local reach codes that go beyond the minimum state requirements by amending the CALGreen Code (Title 24, Part 11), Energy Code (Title 24, Part 6), or the municipal Health and Safety Code.

Local amendments that mandate energy efficiency or conservation measures, such as a higher performance standard or battery storage, require California Energy Commission (CEC) approval, and must be supported by a cost-effectiveness study and filed as an amendment to the Energy Code (Title 24, Part 6). Local amendments that do not require efficiency or conservation, such as requiring electric-only construction or electric vehicle charging stations, can amend the CALGreen

Code (Title 24, Part 11) and do not require CEC approval or cost-effectiveness analyses. However, cost-effectiveness analyses can demonstrate to the community that amendments to the code are financially responsible and do not represent an unreasonable burden to the residential and nonresidential building owners and occupants.

The proposed ordinance to the City Council is included as **Attachment 1** to this staff report. The section below provides background and summary information regarding the two sets of reach codes proposed.

Building Electrification Reach Codes

Staff researched the opportunities and limitations of the potential reach code policy options that prioritize electric end uses over natural gas or require enhanced efficiency above the statewide Energy Code. The following options were presented to Council for consideration for a nonresidential reach code:

- **OPTION 1 - Efficiency:** All new construction exceeds minimum energy code (via Energy Code, Title 24, Part 6).
- **OPTION 2 - All-Electric Preferred:** Allows mixed-fuel buildings with high energy performance, requiring additional energy efficiency measures, battery storage, and/or pre-wiring for buildings to be electric-ready (via Energy Code, Title 24 Part 6).
- **OPTION 3 - All-Electric Required:** Appliances must be electric (via Green Building Code, Title 24 Part 11).
- **OPTION 4 - All-Electric Municipal Ordinance:** No gas hookup allowed (via municipal ordinance).
- **OPTION 5 - Electric Only Plus Efficiency:** All new construction is electric only and exceeds minimum energy code (via Green Building Code, Title 24 Part 11 and Energy Code, Title 24 Part 6).

Staff considered the benefits and challenges of each available adoption mechanism during the development process and shared these findings with Council during the October 2022 study session. Ultimately, the decision to proceed with the electric only amendment via the CALGreen Code (Option 3) provides the City with opportunity to establish electric only requirements for nonresidential new construction without triggering the CEC review process. The CALGreen amendment allows the City to file for approval directly with the Building Standards Commission (BSC) and provides the opportunity to house the electrification and EV charging requirements in one green building reach code ordinance (e.g., one chapter of the municipal code).

Electric Vehicle Charging Reach Codes

It is widely known that availability of EV charging infrastructure is a critical component to EV adoption. Meanwhile, it is significantly more expensive to install charging infrastructure as a retrofit than it is during new construction. As such, ensuring that newly constructed residential and non-residential parking has ample EV charging capability will reduce long-term retrofit costs of EV infrastructure installation, while helping to increase EV adoption and decrease transportation-related greenhouse gas emissions.

Council approved enhanced EV charging infrastructure requirements for new single-family and multi-family buildings during the 2019 code cycle. Staff presented the new 2022 EV reach code provisions for Council's consideration during the previous study session. The proposed requirements are based on the PCE model EV reach code and enhances charging accessibility while meeting driver needs, minimizing costs, and allowing for limited exceptions.

Electric Vehicle (EV) charging requirements in California can generally be broken into three categories:

- **EV Charging Station:** All supply equipment is installed at a parking space, such that an EV can charge without additional equipment.
- **EV Ready:** Parking space is provided with all power supply and associated outlet, such that a driver-provided supply equipment can be plugged in, and a vehicle can charge.
- **EV Capable:** Conduit is installed to the parking space and building electrical panel and transformers have reserved capacity to serve future load. An electrician would be required to complete the circuit and/or increase the gauge of upstream wiring before charging is possible.

EV charging capacity can be summarized as three categories:

- **Level 1:** Capable of charging at 110/120V, 16A. This is equivalent to a standard home outlet.
- **Level 2:** Installation of a 208/240V, 40A circuit or 208/240V, 20A circuit for low power. This is the service capacity typically used for larger appliance loads in homes.
- **Level 3 (DC Fast Charging):** Capable of charging at 20-400kW. This is the type of charger used for Tesla Superchargers and DC Fast Chargers at some supermarkets.

The 2022 California Green Building Code update (Title 24, Part 11) increased requirements for electric vehicle charging infrastructure in new construction; including:

- New one- and two-family dwellings and townhouses with attached private garages: must be Level 2 EV-capable.
- Multi-family dwellings:
 - 5% must be Level 2 EV Charging Stations
 - 25% must be Low Power Level 2 EV Ready, and
 - 10% of parking spaces must be Level 2 EV Capable.
- Non-residential:
 - 5% must have Level 2 EV Charging Stations, and
 - 15% of parking spaces must be Level 2 EV Capable.

Community and Stakeholder Feedback

Over the course of two years, staff conducted extensive community and stakeholder outreach to inform the policy direction and limited exemptions to incorporate into the proposed reach code policy. Detailed summaries of local stakeholder and business owner comments of building electrification and EV charging infrastructure can be found in the City Council Study Session staff reports included as [Attachments B and C](#).

As a result of the feedback from the business and development community, staff heard the following preferences for a potential all-electric and EV reach code policy:

- The first iteration of nonresidential all-electric codes should apply to new construction only.
- Provide a “grace period” or exception for projects that received entitlement prior to the ordinance effective date.
- Rollout requirements under the 2022 building code cycle (effective January 1, 2023).
- Validation of energy infrastructure and capacity due to grid reliability concerns, consider backup power exemptions.
- Remain business friendly to the biotech lab/medical/restaurant community via exemptions.

Proposed Policy Components

The proposed reach code ordinance requires all-electric new buildings and enhanced EV charging infrastructure via local amendment to the 2022 CALGreen Code and amends Title 15 of the South San Francisco Municipal Code. The proposed requirements would be triggered on building permit application for new construction. The policy components of the ordinance are described below. As mentioned above, the full text of the recommended ordinance is available as [Attachment A](#) to this staff report.

Policy Component #1: Building Electrification for Nonresidential New Construction

The residential all-electric provisions carried over from the 2019 reach code will continue to impact all newly constructed residential buildings and alterations that include replacement or addition of over 50 percent of the existing foundation for purposes other than a repair or reinforcement as defined in California Existing Building Code Section 202; or where over 50 percent of the existing framing above the sill plate is removed or replaced for purposes other than repair. The main change is to the mechanism for adoption. The 2019 reach code amended the Energy Code (Title 24, Part 6). To align with the latest decision from the CEC regarding energy conservation and efficiency standards only require CEC approval, the previous requirements have been organized as an amendment to the CALGreen Code (Title 24, Part 11).

Staff is proposing to remove the previous exemption for nonresidential buildings and include all-electric requirements for new nonresidential buildings. The 50/50 alterations rule will continue to impact residential

buildings only. The ordinance recommends that newly constructed nonresidential buildings be designed and constructed as all-electric, with limited exemptions as described below.

The proposed ordinance includes limited exemptions for buildings subject to the full electrification requirements. Staff presented potential reach code exemptions during the October 2022 study session based on previous development efforts and the additional stakeholder feedback received in 2022. The proposed ordinance includes the following exemptions:

- Specialized equipment for Industrial processes, laboratories, and medical uses.
- Commercial Food Heat-Processing Equipment.
- Back-up power for Critical Facilities necessary to protect public health or safety in the event of an electric grid outage.
- Nonresidential building projects that receive valid entitlements from the City of South San Francisco within six (6) months of the effective date of the enabling ordinance are not required to be designed and constructed as all-electric.
- If there is not an all-electric prescriptive pathway for a building under the state Energy Code, and the building is unable to achieve the Energy Code's performance compliance pathway using commercially available technology and an approved calculation method, then the building official may grant a modification.

It is common practice to include electric-readiness requirements for projects that receive approval to install combustion equipment (equipment or appliance that uses fuel gas). The proposed ordinance suggests language that requires electrical infrastructure and physical space to accommodate future installation of any electrical heating appliance that receives approval for an exemption by the Community Development Director or designee. The proposed ordinance also specifies when fuel gas infrastructure no longer serves one of the exemptions outlined above, that the fuel gas infrastructure must be capped (otherwise terminated or removed) by the entity previously entitled to the exception. The intent of this language is to ensure that the lifecycle for approved fuel gas infrastructure applies only to the end use associated with the approved building permit and is not utilized for other end uses in the future.

Policy Component #2: Electric Vehicle Charging Infrastructure for New Construction

The reach code ordinance also includes increased electric vehicle (EV) charging infrastructure requirements beyond 2022 CALGreen standards.

To evaluate the financial impact on first costs, Peninsula Clean Energy commissioned an analysis of the total cost of implementing various EV infrastructure measures. Staff have worked closely with PCE to establish new construction EV requirements which are more in-line with local EV adoption trends, while providing flexibility for the builder and keeping construction costs as low as possible.

The recommended requirements for EV infrastructure include:

New Single-Family Dwelling:

- One dedicated EV ready Level 2 circuit, and
- One dedicated EV ready Level 1 circuit if there is a second parking space.

New Multi-family Dwelling:

- 15% of units with parking spaces, Level 2 EV Charging Stations.

- 85% of units with parking spaces, Low Power Level 2 EV Ready.

New Nonresidential Office Building:

- 20 % of the parking spaces, Level 2 EV Charging Stations installed.
- 30% of the parking spaces, Level 2 EV Capable.

New Hotel and Motel Building:

- 5% of the parking spaces, Level 2 EV Charging Stations installed.
- 25% of the parking spaces, Low Power Level 2 EV Ready
- 10% of the parking spaces, Level 2 EV Capable.

Other New Nonresidential Building:

- 10% of the parking spaces, Level 2 EV Charging Stations installed.
- 10% of the parking spaces, Level 2 EV Capable.

The proposed EV reach code provisions outline specific exemptions for new buildings. The exemptions are based on the current 2022 CALGreen Code exemptions for EV charging and Council direction during the previous study session. The exemptions extend to 1) when the local enforcing agency has determined EV charging infrastructure are not feasible, 2) Accessory Dwelling Units (ADU) and Junior Accessory Dwelling Units (JADU) without additional parking facilities and without electrical panel upgrade or new panel installation, and 3) multi-family residential R-2 building projects with approved entitlements before the effective date of the proposed ordinance. The EV reach code requirements also align with the statewide code by allowing Automatic Load Management Systems (ALMS) to be permitted to reduce load when multiple vehicles are charging.

CONCLUSION

At this time, staff is presenting this report to the Planning Commission for information purposes only, and also seeking further public comment and feedback from the Planning Commission. The next step will be bringing the proposed Reach Codes to the Council for introduction and adoption of the proposed ordinance.

Attachments:

1. Proposed All-Electric and EV Charging Ordinance
2. City Council Study Session Staff Report 22-718
3. City Council Study Session Staff Report 21-791