

**DOCKETED**

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**BUSINESS OF THE COUNCIL OF THE CITY OF HALF MOON BAY**

**AGENDA REPORT**

For meeting of: **December 7, 2021**

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**TO:** Honorable Mayor and City Council

**VIA:** Bob Nisbet, City Manager

**FROM:** John Doughty, Public Works Director  
Veronika Vostinak, Sustainability Analyst

**TITLE: ELECTRIC VEHICLE AND PHOTOVOLTAIC SYSTEM REACH CODES FOR 2019 ENERGY CODE**

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**RECOMMENDATION:**

Conduct a public hearing, waive first reading, and introduce an ordinance repealing and replacing Chapter 14.04.040 (“Energy Code”) and Chapter 14.04.120 (“Green Building Standards Code”) of the Half Moon Bay Municipal Code to expand the requirements for PV in new non-residential buildings, require pre-wiring for back up battery storage, and expand EV charging requirements in new residential buildings.

**FISCAL IMPACT:**

The fiscal impact to the City is unknown at this time. The provisions of the ordinance will apply to new City buildings including the City’s proposed Corporation Yard.

**STRATEGIC ELEMENT:**

This action supports the Infrastructure and Environment and Healthy Communities and Public Safety Elements of the Strategic Plan.

**BACKGROUND:**

California continues to lead the fight against climate change. The effort to fight climate change is delegated to State agencies, regional planning/transportation agencies and local governments like Half Moon Bay and San Mateo County.

The State legislature and Governor(s) have created legislation, rules and executive orders to create a framework for ambitious statewide greenhouse gas (GHG) reductions. The following is a list of some of the more prominent guiding policy documents:

- Assembly Bill 32 (AB 32) - established the goal of reducing GHG emissions to 1990 levels by 2020

- Senate Bill 32 (SB 32) - established the goal of reducing GHG emissions 40% below 1990 levels by 2030
- Executive Order (EO) B-55-18 - established the goal of achieving carbon neutrality by 2045 at the latest and maintaining net negative emissions from that point forward
- Senate Bill 100 (SB 100) - requires a 100% clean electric grid by 2045
- EO N-79-20 - requires all new cars and passenger trucks sold in California be zero emission by 2035

The City is currently in the process of preparing its first Climate Action and Adaptation Plan (CAAP). This plan will provide an inventory of emissions, estimates of future unmitigated emissions and policies/implementation measures to reduce GHG emissions into the future. Notably, energy use for buildings represents approximately 49% of the GHG emissions in Half Moon Bay, which is the greatest proportion of the City's total GHG emissions. Closely following building energy, 45% of the GHG emissions generated in Half Moon Bay are generated from transportation, including gas-powered vehicles.

Local jurisdictions may contribute to the reduction of statewide GHG emissions by adopting the California Building Standards Code combined with more stringent local policies. The City Council has previously indicated a desire to proceed with adoption of a local ordinance that goes beyond statewide standards.

Every three years, the State of California develops and adopts revisions to the State model building and related codes, which are found in Title 24 of the California Code of Regulations and referred to collectively as the California Building Standards Code ("State Building Codes"). The State Building Codes include the Energy Code and Green Building Standards Code, among others. In January 2020, the City Council adopted the most recent State Building Codes (dated 2019), and the next State Building Codes are expected to be introduced in 2022. The State has provided local jurisdictions the authority to adopt amendments to the State Building Codes that exceed Statewide standards. In order to adopt such amendments, local governments must make findings of reasonable necessity based on local topographical, geological, or climatic conditions.

In addition, in the case of local amendments to the Energy Code (Title 24, Part 6), the California Energy Commission (CEC) requires that local governments make a determination that the amendments are cost-effective, and file that determination with the CEC. It is required that the City adopt a determination that the standards are cost-effective and do not represent an unreasonable burden to the non-residential and residential applicants. The CEC must also find that the standards will require buildings to be designed to consume no more energy than is permitted by the state Energy Code. Neither a cost-effectiveness study nor an energy consumption finding is required for amendments to the Green Building Code (Title 24, Part 11).

## **DISCUSSION:**

To help curb GHG emissions generated within the City, work toward a cleaner environment, and assist the State in reaching SB32 goals, staff has prepared an Ordinance that would:

- Require new single-family, duplexes, triplexes, and accessory dwelling units (ADUs) to pre-wire for the installation of back-up battery storage
- Expand Photovoltaic (PV) System installation requirements for new Non-Residential Buildings
- Expand electric vehicle (EV) charging requirements for Residential New Construction

Each of these provisions is outlined in more detail below. All of these provisions apply to new construction projects only and would not apply to any existing buildings, including remodels.

### **Pre-Wire for Back-Up Battery Storage in New Residential Buildings**

The current Energy Code requires PV installation on new construction of single-family and multi-family homes up to three stories high, based on square footage. However, there is no requirement in the Energy Code to install or pre-wire for stationary battery back-up storage. The proposed amendment would require that any new single-family, duplex, triplex and accessory dwelling units pre-wire for stationary battery back-up storage.

Back-up battery storage allows for clean self-generation, storage, and resiliency during planned and unplanned power outages. Pre-wiring for these systems at the time of construction is most cost-effective and provides freedom for the current or future homeowner to decide if they would like to install a battery depending on their specific needs.

### **PV Installation in New Non-Residential Buildings**

Unlike residential buildings, the current state Energy Code does not require that new non-residential buildings install PV systems at the time of construction. The proposed amendment would require that new non-residential buildings install a solar PV system equivalent in size to 15 percent of the roof area, and new hotels/motels new non-residential buildings install a solar PV system equivalent in size to 5 percent of the roof area.

Expanding the PV requirements to include non-residential buildings would provide greater local GHG-free energy. Installing PV systems at the time of construction is likely to decrease the overall costs as compared to retrofitting a building later with PV. Furthermore, installing a PV system results in energy cost savings derived monthly.

### **Expanded EV Charging Requirements for Residential Buildings**

The State of California has established the goal to require all new cars and passenger trucks sold in California to be zero emission by 2035. The EV charging infrastructure needs will greatly increase as more individuals switch to EVs. Access to charging infrastructure is one of the main barriers behind price preventing individuals from purchasing an EV. A market research survey conducted by PCE in 2020, found that 36% of those surveyed did not have access to a convenient charging location near their home, work or school.

The current state Green Building Standards Code includes requirements to install EV charging. However, these requirements are unlikely to keep pace with expected EV growth looking towards 2030. Staff has proposed using the provisions for residential buildings suggested by Peninsula Clean Energy and Silicon Valley Clean Energy to remain consistent with other municipalities throughout San Mateo and Santa Clara Counties. The current suggestions do not include non-residential buildings, due to the unique needs and space challenges of non-residential buildings in Half Moon Bay, particularly in the downtown area.

The provisions of the proposed EV changes compared to the current state Green Building Standards Code are outlined in the table below.

Building Type	Current State Green Building Standards Code	Proposed Changes	Exceptions
Single-Family, Duplex, Townhome with dedicated garage, ADUs with dedicated parking space	(1) Level 2 EV Capable for one parking space per dwelling unit	(1) Level 2 EV Ready circuit per dwelling unit; and (1) Level 1 EV Ready circuit per dwelling unit	<ul style="list-style-type: none"> <li>• Dwelling Units with only one parking space shall install a Level 2 EV Ready Space</li> <li>• ADUs without a dedicated spot when there is no panel upgrade</li> </ul>
Multi-family (<20 dwelling units)	(1) Level 2 EV capable for 10% of parking spaces	(1) Level 2 EV Ready for each dwelling unit	N/A
Multi-family (>20 dwelling units)	(1) Level 2 EV capable for 10% of parking spaces	(1) Level 2 EV Ready for first 20 dwellings, then: <b>25%</b> Level 2 EV Ready, <b>75%</b> are Level 1 EV Ready	Affordable Housing (After first 20 dwellings): <ul style="list-style-type: none"> <li>• <b>10%</b> Level 2 EV Ready</li> <li>• <b>90%</b> Level 1 EV Ready</li> </ul>

Requirements to install new EV infrastructure in new residential buildings at the time of construction is an opportunity to expand EV access as adoption continues to expand. 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 buildings have ample EV charging capability will reduce long-term costs of EV infrastructure installation, while helping to increase EV adoption and decrease transportation-related greenhouse gas emissions. The proposed amendments are more in-line with local EV adoption trends, while providing flexibility for the builder and keeping construction costs as low as possible.

**ATTACHMENTS:**

Attachment 1: Ordinance

Attachment 2: Cost Effectiveness Study for Non-Residential Buildings