
SENATE COMMITTEE ON HOUSING
Senator Scott Wiener, Chair
2021 - 2022 Regular

Bill No:	AB 1738	Hearing Date:	6/13/2022
Author:	Boerner Horvath		
Version:	4/25/2022		
Urgency:	No	Fiscal:	Yes
Consultant:	Andrew Dawson		

SUBJECT: Building standards: installation of electric vehicle charging stations: existing buildings

DIGEST: This bill requires the California Department of Housing and Community Development (HCD) and the California Building Standards Commission (CBSC) to research, develop, and propose for adoption building standards for the installation of EV charging stations in existing structures during certain retrofits.

ANALYSIS:

Existing law:

- 1) Establishes the California Buildings Standards Commission (CBSC) and requires any standards adopted or proposed by state agencies to be submitted to, and approved by, the CBSC.
- 2) Requires the HCD to propose adoption, amendment, or repeal of building standards to CBSC for residential buildings, including hotels, motels, lodging houses, apartment houses, dwellings, buildings, and structures. .
- 3) Requires HCD and CBSC to actively consult with interested parties, including, but not limited to, investor-owned utilities, municipal utilities, manufacturers, local building officials, commercial building and apartment owners, and the building industry when proposing and adopting standards related to electric vehicle (EV) charging infrastructure.
- 4) Requires CBSC to publish the California Green Building Standards Code (CALGreen) in its entirety every three years along with supplement pages 18 months after each 3 year revision.

This bill:

- 1) Defines the following terms:
 - a) “Direct current fast charger” means electric vehicle supply equipment capable of supplying direct current electricity to a vehicle fitted with the appropriate connection to support recharging the vehicle’s energy storage battery.
 - b) “Level 2 or higher” means any of the following:
 - i. Direct current fast charger.
 - ii. Level 2 electric vehicle supply equipment.
 - iii. Low power level 2 electric vehicle charging receptacle.
- 2) Requires HCD and the commission to research, develop, and propose for adoption mandatory building standards for the installation of EV charging stations with Level 2 or higher electric vehicle supply equipment in existing multifamily dwellings, hotels, motels, and nonresidential developments during certain retrofits, additions, and alterations to existing parking facilities.
- 3) Requires HCD and the commission to:
 - a) Use Sections 4.106.4 and 5.106.5.3 of CALGreen as a starting point
 - b) Consult with interested parties, including, but not limited to, the State Air Resources Board, the State Energy Resources Conservation and Development Commission, investor-owned utilities, municipal utilities, vehicle and electric vehicle supply equipment manufacturers, local building officials, commercial building and apartment owners, and the building industry.
 - c) Invite the participation of the public at large in the development of those building standards.
 - d) Proposed standards that only apply to retrofits, additions, and alterations of existing parking facilities when a building permit is required and other significant construction, retrofits, or repair action is taking place.
- 4) Sets the following goals for updating the building standards related to EV charging:
 - a) There is adequate availability of charging given near-term electric vehicle charging needs.

- b) There is sufficient charging capacity to support the long-term goal of achieving 100% electric vehicles statewide.

COMMENTS:

1) *Author's statement.* "Transitioning the transportation sector to zero-emission technology is critical to achieving California's public health protection goals, minimizing air pollution exposure, and mitigating climate change impacts. As passenger vehicles alone account for more than 28 percent of California's statewide greenhouse gas emissions, deployment of light-duty ZEVs is essential. To support this transition, more electric vehicle charging stations are needed. Installation of EV charging stations is most cost-effective when it is concurrent with retrofits, additions, or alterations to parking spaces or the electric supply for an existing building. AB 1738 seeks to close the projected EV charging gap of approximately 975,000 Level 2 EV charging stations by 2025."

2) *Proposing Building Codes.* The California Building Standards Code (Title 24) serves as the basis for the design and construction of buildings in the state. California's building codes are published in their entirety every three years; intervening code adoption cycles produce supplement pages halfway (18 months) into each triennial period. Amendments to California's building standards are subject to a lengthy and transparent public participation process throughout each code adoption cycle. Through this process, relevant state agencies propose amendments to building codes, which the CBSC must then adopt, modify, or reject. HCD is the relevant state agency for residential building codes and the commission itself is for non-residential buildings.

HCD has an open, public process in proposing building codes to CBSC. They use public focus group meetings, relevant state agencies, stakeholder groups, building officials, local government agencies, construction industry representatives, environmental community representatives, building product manufacturer representatives, and others for gathering input for the proposed building standards. This bill directs HCD to propose building codes for retrofits and does not circumvent the existing process.

3) *California ZEV Mandates and Goals.* Pursuant to Executive order B-48-18, issued by Governor Brown in 2018, also referred to as the "ZEV Mandate," California aims to achieve five million zero-emission vehicles (ZEV) on the road by 2030 and 250,000 charging stations by 2025. Additionally, 15% of new cars sold in California must be ZEV or near-ZEV, according to the ZEV mandate. Pursuant to Executive Order N-79-20, the state has a goal to phase

out the sale of new internal combustion engine vehicles by 2035. According to the California Energy Commission¹, in order to achieve this goal, California will require a total of 1.2 million EV chargers to support the transition.

- 4) *Where are we in achieving our goals?* According to the California Energy Commission², there were about 650,000 light-duty ZEVs at the end of 2020, of which the vast majority are battery electric vehicles (BEV) or plug-in hybrids. ZEV sales share is about 12.5% of all car sales, but the majority of these sales are attributed to Tesla, which only produces battery electric vehicles. Presently, there are 79,000 electric vehicle chargers in California, about 55% percent of them are private chargers.
- 5) *How does this bill help in getting to our goals?* One major limitation for the switch from gas-powered cars to EVs is the availability of charging. Their price has decreased over time with some new EVs costing less than \$40,000. Their range is now up to 200 miles, which is very reasonable for commuters. However, charging stations are difficult to come by. This bill helps bring charging capability to people which may make adoption more appealing because charging would become more widely available. Research from UC Davis' National Center for Sustainable Transportation suggests that access to charging does have a positive effect on ZEV's, even though they could not tease out quantitative information.³
- 6) *Charging and installation types.* There are three different levels for charging electric vehicles. Level 1 charging uses a common household outlet, but is very slow. Level 1 charging works well for plug-in hybrids, but not for BEVs because their battery packs are much bigger. Level 2 charging infrastructure can charge a BEV from empty to full overnight, and it uses an outlet similar to an outlet for a dryer for a home. Level 3 chargers are for fast charging with few residential locations because they are very expensive and require large voltages. Charging at a level 3 station would cost more than the charging one's vehicle at home, but it is faster. Fast charging is a new technology and it remains to be seen whether home charging or fast charging stations are preferred by consumers. Consumers may prefer "filling up their tank" at a station than charging at home even if it is more expensive.

¹ Alexander, Matt, Noel Crisostomo, Wendell Krell, Jeffrey Lu, and Raja Ramesh. May 2021. *Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment: Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030 – Revised Staff Report*. California Energy Commission. Publication Number: CEC-600-2021-001-REV.

² California Energy Commission. *Vehicle Population in California dashboard*. <https://www.energy.ca.gov/data-reports/energy-insights/zero-emission-vehicle-and-infrastructure-statistics/vehicle-population>

³ Chakraborty, Debapriya, David S. Bunch, Bingzheng Xu, Gil Tal, David Brownstone (2021) Brief: Exposure to Electric Vehicle Technology at Home and Work Can Fuel Market Growth. Institute of Transportation Studies, University of California, Davis, Brief UCD-ITS-RR-21-70

There are three categories of installation. “EV Capable” means that the space can be an EV charging port (everything but the outlet). “EV ready” means that there is an outlet for level 2 charging. “EV Installed” means that there is a charging station for level 2 charging versus an outlet. This bill requires the infrastructure for “EV installed” outlets.

The Federal Department of Energy estimates the cost to be \$1,000-\$20,000 for a level 2 charger.⁴ The cost ranges vary wildly depending on the output and amount of work needed for the infrastructure (conduits, site improvements, upgrading electrical service, etc.). The higher end numbers would be for complete retrofits and construction. However, this bill applies to buildings where a retrofit is already happening and not requiring a retrofit for existing buildings.

- 7) *Existing Requirements.* There are EV charging requirements for new construction, but they are no requirements for existing buildings. In the upcoming cycle, there will be requirements for existing multifamily buildings to include EV charging. Specifically, when new parking facilities are added, or an electrical system are added or altered and the work requires a building permit, 10% of the altered spaces must be EV capable. This bill aims to go further by requiring EV installed spaces for retrofits but allows HCD and CBSC flexibility to figure out how to do it through their process. This would follow the pattern for codes for new buildings in that the first cycle required EV capable and this upcoming cycle will require some EV installed spaces.
- 8) *Keeping the EV charging bills straight.* SB 1482 (Allen, 2022) was recently passed out of this committee. It requires HCD to propose mandatory standards for level 2 charging in new multifamily dwellings. AB 2075 (Ting, 2022) will be heard today, and it requires CBSC to convene a workshop of EV charging infrastructure standards. This bill requires HCD to propose standards to level 2 charging in retrofitted multifamily dwellings, hotels, motels, and non-residential buildings.
- 9) *Opposition.* Opposition believes that it not wise to place restrictions to building standards in statute and that because the building standards are becoming more stringent with each update, there is no need for legislative action. They admit that one area that needs addressing is how to align EV charging with electrification of our building stock.

⁴ U.S. Department of Energy: Energy Efficiency & Renewable Energy. *Alternative Fuels Data Center, Charging Plug-In Electric Vehicles at Home.* https://afdc.energy.gov/fuels/electricity_charging_home.html

RELATED LEGISLATION:

AB 2075 (Ting, 2022) — requires CBSC to convene a workshop on EV charging infrastructure standards. *This bill is in the Senate Housing Committee and will be heard today.*

SB 1482 (Allen, 2022) — requires HCD to propose mandatory building standards for Level 2 EV charging in multifamily dwellings. *This bill passed out of the Senate and is now in the Assembly.*

AB 965 (Levine, 2021) — requires HCD to propose mandatory building standards. CBSC would have to research, develop, and propose for adoption codes for electric vehicle charging infrastructure for existing nonresidential development. Originally had multifamily dwellings as a part of the bill. *This bill is currently on the Senate inactive file.*

AB 684 (Levine, 2019) — would have required HCD and CBSC to research, develop, and propose building standards for electric vehicle charging infrastructure for existing multifamily dwellings and nonresidential development. *This bill was vetoed by the Governor.*

AB 1239 (Holden, 2017) — would have required HCD and CBSC to Research, develop, and propose building standards for electric vehicle parking spaces for existing parking structures located adjacent to, or associated with, multifamily dwellings and nonresidential buildings. *This bill was vetoed by the Governor.*

AB 1092 (Levine, Chapter 410, Statutes of 2013) — required HCD and CBSC to adopt, approve, codify, and publish mandatory building standards for installation of future electric vehicle charging infrastructure for parking spaces in multifamily dwellings and nonresidential development.

FISCAL EFFECT: Appropriation: No Fiscal Com.: Yes Local: No

POSITIONS: (Communicated to the committee before noon on Wednesday, June 8, 2022.)

SUPPORT:

350 Sacramento
350 Silicon Valley
California Environmental Voters
CivicWell

Cruise

Elders Climate Action, NorCal and SoCal Chapters

The Climate Reality Project: Silicon Valley

OPPOSITION:

Apartment Association of Greater Los Angeles

Building Owners and Managers Association of California

California Apartment Association

California Association of Realtors

California Building Industry Association (CBIA)

California Building Officials

California Business Properties Association

California Hotel & Lodging Association

California Rental Housing Association

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