February 21, 2024

Testimony on **HB 889**
Building Code - Construction and Significant Renovation of Housing Units - Electric Vehicle Parking Spaces
Environment and Transportation Committee
Position: Favorable

The undersigned organizations urge a favorable report on HB 889.

We encourage you to support the bill and consider the principles and best practices below in order to maximize access to equitable home charging for multi-family building residents, while minimizing cost and complexity of construction, management, and enforcement of these buildings and codes.

Maryland's adoption of Advanced Clean Cars II (ACCII) is expected to bring 1.8 million electric vehicles[1] to consumers by 2035 and $6.6 billion worth of emissions reductions, cleaner air, and societal benefits by 2050.[2] Currently, most electric vehicle (EV) owners charge at home for its affordability and convenience, but home charging is not as accessible an option for those in multi-family homes, especially low-income households who tend to be overburdened by pollution and transportation costs and could benefit the most from switching to EVs.

This bill's EV-ready requirements seek to future-proof housing to reduce barriers to home charging. The cost of retrofitting an existing building with charging supply equipment is up to twelve times more expensive than the cost at new construction.[3] The largest expenses when retrofitting are related to demolition, breaking and repairing walls, and asphalt and concrete trenching.[4] On the other hand, adding the necessary conduit,

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[1] Maryland Energy Administration, *Multifamily Residential EV Study* (Jan. 2024), https://energy.maryland.gov/Reports/Multifamily%20Residential%20EV%20Study.pdf at 6.
[2] Sierra Club, *New Reports Warn of Deadly Effects of Vehicle Pollution in Maryland* (June 23, 2023), https://www.sierraclub.org/press-releases/2023/06/new-reports-warn-deadly-effects-vehicle-pollution-maryland.
[3] Energy Solutions, *Electric Vehicle Infrastructure Cost Analysis Report for Peninsula Clean Energy (PCE) & Silicon Valley Clean Energy (SVCE)* (Nov. 20, 2019), https://bayareareachcodes.org/wp-content/uploads/2020/03/PCE_SCVE-EV-Infrastructure-Report-2019.11.05.pdf
[4] The Solar Foundation, *EV Ready Cost Comparison*, https://www.usdn.org/uploads/cms/documents/ev_ready_cost_comparison.pdf.

reserved capacity, wiring, dedicated circuit, and receptacle to support charging at the time of construction adds only an estimated 0.1-0.2% to overall building development cost.[5]

An EV-ready building code should seek to limit marginal cost of compliance, balanced with the savings of potential avoided retrofits. Including renovated buildings in this bill is important to address inequality of housing opportunities. However, the definition of renovation that triggers EV-ready requirements should be based on the costliest endeavors of retrofitting to limit the incremental cost borne solely by EV-ready compliance in an otherwise unrelated alteration of a building. In other words, where renovation projects are already planned, EV-ready compliance should not add an additional significant cost. The current definition of "significant renovation" – "electrical panel upgrades that increase the capacity of the panel" – is not directly related to the most burdensome costs of retrofitting. Although trenching of parking spaces is appropriate, it can accompany, for example, renovations "where the work area exceeds 50 percent of the original building area" to acknowledge triggers that may more closely relate to demolition and trenching.[6]

Requirements for new construction should be as high as possible to meet the future charging needs of all residents and capitalize on the savings of futureproofing. Maryland is already in the top ten states nationally for EV adoption with registrations doubling every year since 2020; ACCII will only expand and accelerate the transition.[7] The best time to invest in strong EV-ready building codes is now rather than attempting to predict market growth in five or ten years. Instead of a low percentage EV-ready requirement, other jurisdictions utilize a mixture of EV-capable and EV-ready totaling 100%. In EV-capable, only conduit and reserved capacity on the panel is required but no wiring, which reduces up-front costs while still avoiding the cost of demolitions and trenching of future retrofits.

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[5] California Air Resources Board, *EV Charging Infrastructure Nonresidential Building Standards: 2019/2020 Intervening Code Cycle: CARB Staff Technical and Cost Analysis* (Nov. 15, 2019), https://ww2.arb.ca.gov/sites/default/files/2020-08/CARB_Technical_Analysis_EV_Charging_Nonresidential_CALGreen_2019_2020_Intervening_Code.pdf.

[6] 2022 Denver Energy Code, available at https://denvergov.org/files/assets/public/v/6/community-planning-and-development/documents/ds/building-codes/2022-denver-building-and-fire-code.pdf at 305.

[7] Maryland Department of Transportation/Motor Vehicle Administration Electric and Plug-in Hybrid Vehicle Registrations by County as of each month end from July 2020 to December 2023, available at https://opendata.maryland.gov/Transportation/MDOT-MVA-Electric-and-Plug-in-Hybrid-Vehicle-Regis/qtcv-n3tc/about_data

To limit costs while expanding equitable access to charging, full power to every EV-ready space can be restricted. The minimum 40-ampere circuit required per EV-ready parking space is an excessive amount of power for one vehicle's daily, most often overnight use. Instead, EV-ready could be alternatively defined as providing Low Power Level 2 charging,[8] a minimum 20-ampere, 208/240-volt circuit that would still provide 3.8 kilo-watts of power, or approximately 10-20 miles of range per hour, more than enough overnight for daily driving needs. A further option is energy management systems with load sharing to allow for safe and efficient simultaneous charging on the same circuit. Energy management optimizes energy consumption, leveraging utility rates to minimize charging costs and reduce demand on building capacity and the grid.

Those living in EV-ready multi-family homes should have access to the same cost savings and conveniences of home charging as those in single-family homes. EV spaces should be directly wired to individual meters where possible to ensure access to low-cost residential utility rates and incentives (such as off-peak pricing, where available), and the resilience benefits of future vehicle-to-home battery bidirectionality. Cost savings can be achieved by prioritizing installation of receptacles rather than commercial EV supply equipment (EVSE-installed), which tend to charge higher electricity rates, surcharges, and subscription and idling fees. EV-capable spaces should also have prominent signage for those looking to upgrade to EV-ready.

In addition to residential buildings, this Assembly can also consider the second most popular location for EV charging, workplace charging, and other non-residential locations in general – particularly those with "long dwell times" – to take advantage of lower-cost, low-powered charging options. Commercial EV readiness can provide the infrastructure for more robust public charging, for those without off-street parking; it can also assist businesses in electrifying their fleets – including warehouses that rely on diesel vehicles that disproportionately pollute the air, especially in communities of color and low-income communities – that can use the same charging infrastructure as passenger vehicles. Abundant, accessible, and affordable charging infrastructure is consumers' top priority in considering an EV and it is incumbent on policymakers to explore every opportunity to expand access.

Signed,

Environmental Defense Fund
EV Charging for All Coalition
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[8] Cal. Code Regs. Tit. 24 Part 11 §202