



SWTCH Energy Inc.
Greentown Labs
444 Somerville Ave
Somerville, MA 02143
swtchenergy.com

March 1, 2024

The Honorable Brian Feldman
Chair, Senate Education, Energy, and the
Environment Committee

The Honorable Marc Korman
Chair, House Environment and
Transportation Committee

Submitted electronically

Re: SWTCH testimony in SUPPORT with AMENDMENTS:
[SB 0695](#) / [HB 0889](#): **Building Code – Construction and Significant Renovation of
Housing Units – Electric Vehicle Parking Spaces**

Dear Chairs Feldman and Korman and Committee Members:

SWTCH is pleased to offer this testimony in SUPPORT with AMENDMENTS of the
companion bills SB 0695 and HB 0889.

About SWTCH

SWTCH is a leading provider of electric vehicle (EV) charging and energy management solutions for multifamily, commercial, and workplace properties across North America. SWTCH's end-to-end solution optimizes EV charging usage and manages load to benefit drivers, property owners, and the grid. SWTCH has deployed more than 10,000 charging stations, with a particular focus on ensuring equitable access to EV charging. SWTCH's charging management platform is built upon a foundation of open communication standards and interoperability to ensure future flexibility, scalability, and innovation even after purchase and installation.

Comments

Maryland's clean transportation policy leadership

For many years now, Maryland has been a leader in clean transportation policy. Last year, the State continued to set the bar high when it adopted the Advanced Clean Cars II (ACCII) Rule. This Rule requires automakers to deliver an increasing percentage of light-duty zero-emission or hybrid vehicles with each model year beginning with Model Year (MY) 2027, culminating in 100% ZEV or hybrid deliveries by MY2035. These and other policy actions matter because policy shapes the market for EVs and charging.

Zero-emission vehicle ("ZEV") mandates and other policy goals such as the ACCII Rule – while eminently worthy – are insufficient in and of themselves to bring about the changes they envision. Indeed, without a host of complementary actions, the achievement of high-level policy mandates and goals are likely to fall short. EV-ready construction requirements are among such complementary actions. For residents of apartments and condominium buildings in particular, EV-ready requirements are imperative – not only for the state to keep pace with its overall EV adoption targets, but to keep pace in an equitable way that helps shrink the disparity between those who live in single-family homes and those who don't.

The value of EV-ready construction requirements

Establishing minimum EV-ready construction requirements matter because they enable more widespread and equitable EV adoption by driving down the cost of charging infrastructure. It is far less expensive – generally 4 to 8 times less expensive – to plan, engineer, design, and install EV charging infrastructure during new construction than to retrofit an already-built building.

More than 30% of all U.S. households live in multifamily apartment and condominium buildings. Multifamily properties are an underserved segment when it comes to EV charging for a host of reasons, cost being a major one. By driving down the cost of charging infrastructure, EV-ready construction codes will help expand equitable access to charging among multifamily households, as well as enable the corresponding savings that accrue to those who are able to charge at home. This is especially important because multifamily households are disproportionately low- and moderate-income, and face an above average transportation energy burden.

Charging infrastructure costs

In SWTCH’s experience, the typical cost to install a commercial-grade Level 2 EV charger at an existing multifamily property ranges from \$5,000 to \$10,000. This range is consistent with industry experience. The National Renewable Energy Laboratory (NREL)’s “2030 National Charging Network” included a meta-review of literature and reported a range from \$4,400 to \$10,600 (Note “commercial” in the table below is the category that includes multifamily properties”):

Table 5. EVSE Capital Cost Assumptions

Charger Hardware		Unit Cost per Port	Install Cost per Port ^a	References
L1 residential	Low: High:	\$0 \$0 ^b	\$100 \$1,000	(Fixr.com 2022; Courtney 2021; HomeAdvisor 2022)
L2 residential	Low: High:	\$400 \$1,200	\$500 \$1,700	(Borlaug et al. 2020; Fixr.com 2022; Courtney 2021; HomeAdvisor 2022)
L2 commercial	Low: High:	\$2,200 \$4,600	\$2,200 \$6,000	(Nicholas 2019; Nelder and Rogers 2019; Borlaug et al. 2020; Bloomberg New Energy Finance 2020; Pournazeri 2022)

Source: National Renewable Energy Laboratory. (2023). The 2030 National Charging Network.

NREL’s meta-review is consistent with Maryland’s own experience as reflected in BGE’s August 2023 Semi-Annual Report to the Public Service Commission. BGE’s experience installing chargers at multifamily properties indicates an average cost of \$9,662 per charger, installed.

4. **Actual costs of implementation at each site. Discuss the overall costs, broken down by cost categories and charger type (including capital costs and annual operations and maintenance costs). Also include incentive costs and any “make ready” costs such as distribution system upgrades.**

Average Multifamily Program Costs per EV Charger Port Jan 1, 2023 – Jun 30, 2023	
Equipment Cost	\$ 3,953
Install Cost	\$ 5,673
Other Cost*	\$ 1,242
Total Average	\$ 9,662

* Other Cost average based only on properties who reported applicable project costs that were not qualified under equipment or installation costs. 91% of properties did not report other costs associated with residential EV charger installation.

Source: BGE. (August 2023). Semi-Annual Report to the PSC, Case No. 9478. Page. 18.

Note that in all three of these examples – SWTCH, NREL, and BGE – the installation and supporting infrastructure comprise the bulk of the cost; the chargers themselves are generally between \$1,000 to \$2,000. These cost estimates are all for installing chargers in existing buildings. Importantly, if Maryland adopts EV-ready construction requirements, the costs to install chargers will be far less.

Recommended Amendments

1. The proposed EV-ready requirements in this bill, while forward-looking, are relatively modest. SWTCH encourages stronger provisions that align with the current working draft of the International Energy Conservation Code (IECC), which requires a minimum of 20% EVSE Installed, 5% EV Ready, and 75% EV Capable spaces for R-2 occupancies.
2. SWTCH encourages consideration of language that any EV-ready requirements in this bill would be superseded by the IECC if the IECC's requirements are more stringent.

In Closing

SWTCH supports the goals of these companion bills and respectfully encourages favorable consideration with amendments.

Thank you for your consideration of these comments. If you have questions or if I can provide more information, please contact me at josh.cohen@swtchenergy.com or 202.998.7758.

Respectfully,



Josh Cohen
Head of Policy