



Highland Electric Fleets, Inc.

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-Via Electronic Filing-

Will Seuffert
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350 St. Paul, MN 55101

RE: 2023 TRANSPORTATION ELECTRIFICATION PLAN DOCKET NO. E002/M-23-452

Dear Mr. Seuffert:

Highland Electric Fleets, Inc (Highland) submits these comments regarding Xcel Energy's (Company) 2023 Transportation Electrification Plan (TEP). As an electrification-as-a-service (EaaS) provider and the largest buyer of electric school buses in the United States, Highland appreciates the opportunity to comment on TEP Topic #7 – The Company's proposed Electric School Bus Demonstration. More specifically, Highland respectfully asks the Commission to approve the Company's proposed electric school bus vehicle-to-grid (V2G) demonstration.

Vehicle-to-grid technology, allows an EV to both draw energy from the grid (typically during periods of low cost and low demand) and discharge energy back to the grid (during periods of higher cost and high demand). This proposed demonstration is timely because the school buses, charging infrastructure and associated software are mature enough for commercially viable V2G projects. As an example of how this technology is being used today, in the summers of 2021 and 2022, Highland participated in National Grid's Connected Solutions demand response program in partnership with BorgWarner, Thomas Built Buses and Synop to pilot V2G technology in battery storage from electric school buses—10+ MWh was discharged to the Massachusetts grid across 158 hours, generating \$23k in revenue.

As school bus electrification becomes more prominent across Minnesota, the Company's proposed demonstration will establish a pathway for school districts and bus operators to access the economic and resiliency benefits of using electric school buses (ESBs) as distributed energy resources (DERs).

Highland does not currently have recommendations regarding Topic #7 questions A-D. However, based on our experience leading commercially viable school bus V2G projects we suggest the following principles be considered during the implementation of the demonstration:

1. The demonstration should leverage and build upon the real-world learnings of existing demand response and vehicle-to-grid projects currently in operation across the country.
2. The primary function of the electric school bus must be for pupil transportation. Long term success and scalability of V2G projects will not be possible if the buses are not first and foremost used as daily route buses. To ensure route-readiness and functionality each bus in the pilot must maintain a minimum state-of-charge during the V2G demonstrations as agreed by the school district and project partners.
3. The demonstration should operate in conjunction with vehicle dwell times that are amenable to the daily route needs. Typically, the most advantageous times for V2G events are during the summer months when school buses sit idle and there is high energy demand.
4. The demonstration should leverage the expertise of stakeholders who have a demonstrated track record of executing V2G projects.



5. Current and past V2G projects have shown that school districts and their electrification partners are willing to own EVSI on the customer side of the meter. This ownership structure encourages longer-term customer participation in V2G and limits the burden on the respective utility partner. The demonstration should enable installation of EVSI through make-ready rebates.

About Highland Electric Fleets

Highland provides electric school buses (ESBs) to school districts and/or their third-party managed fleet contractors through an electrification-as-a-service (EaaS) model. EaaS is a contractual mechanism offered by several companies, including Highland, that provides ESBs, along with some combination of planning, financing, charging equipment, infrastructure, training, and other support and operational services. The EaaS model enables ESB acquisition and operation at a cost equivalent to or better than traditional diesel total cost of ownership. The EaaS provider makes that possible by leveraging volume purchasing; asset depreciation; fuel and maintenance savings; grant, rebate, and utility programs; and other values ESBs can provide. As a result, EaaS is the only ESB acquisition model available today that drives project costs down and fundamentally reduces the amount of incentive funding necessary per bus to reach affordability.

Furthermore, the model allows the school district to benefit from the expertise of the EaaS company, which takes on all the activities involved in electrifying the fleet and assumes any associated technology risk. While EaaS has only been available to school districts for a few years, the market has responded rapidly, given its benefits. Over the past two years, roughly a third of all ESBs put under contract in the United States were in EaaS contracts.

With over 600 ESBs under contract, Highland is the largest provider of EaaS services. We are working with districts across the United States and Canada on electrification projects, including the largest project in North America, which is serving Montgomery County Public Schools (MCPS) in Maryland. Highland is also partnering with Red Lake School District #38, Minnesota's only school district located within a sovereign tribal nation, to implement their rebate award from the first round of the EPA Clean School Bus Program. In addition to leading scalable electrification projects, Highland continues to support V2G pilots across the country including Vermont, Colorado, Maryland, Michigan, and Illinois among other states.

I appreciate the opportunity to comment on the 2023 TEP filing, and I welcome providing additional comments if the Company files a TEP supplement with an expanded school bus offering. Please contact me if you have any further questions.

Sincerely,

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