

# CHESAPEAKE PSR

## PHYSICIANS FOR SOCIAL RESPONSIBILITY

**Committee:** Economic Matters

**Testimony on:** HB832 “Public Utilities – Electric School Bus Pilot Program”

**Position:** Support

**Hearing Date:** February 18, 2021

The Chesapeake Physicians for Social Responsibility (CPSR) is statewide evidenced-based, organization of over 700 physicians, other health professionals and supporters, that addresses the existential public health threats to life on this planet: the climate crisis and the presence of nuclear weapons, we advocate for public policy that addresses these threats informed through the lens of racial justice and equity. As an organization founded by physicians, we understand that prevention is far superior to treatment in reducing costs; death, illness, injury, and suffering.

The CPSR submits this testimony in support of HB832, which will establish a pilot program through which investor-owned utilities (IOUs) may collaborate with appropriately selected school districts in the IOU’s service territory to partly offset the cost of purchasing a limited number of school buses powered by rechargeable electric batteries, and be allowed to use the storage capacity of those batteries when the buses are not in use, or in specified emergencies, to feed stored electricity into the grid to meet high demand or offset intermittency or other variability of electric power in their service areas.

One important aspect of the proposed program is that it does not add expense to the state’s budget, using private sector financing to support the transition to zero emission electric school buses. Beyond this obvious advantage, we find this bill to be a win-win-win for Maryland: it will help reduce the direct health threat of diesel exhaust to schoolchildren and others, address climate change by reducing carbon pollution from diesel buses, and support an innovative partnership between electric utilities and school districts to modernized energy economy in ways that serve both the transportation sector and the energy sector. The sections below offer more detail on each of these positive results.

**Reducing the health threat of diesel emissions from school buses** – Diesel emissions are the unhealthiest kind of transportation emissions; while important progress has been made in reducing the health-harming nature of diesel fuel and improving the efficiency and reducing pollution from heavy diesel vehicles, diesel exhaust fumes still have higher levels of health-harming substances, including particulate matter and nitrogen oxides, than other transportation fuels.<sup>1</sup> Most of the particulate matter in diesel soot is of “ultrafine” size - the most harmful type of particles because their microscopic size allows them to enter deep into the lungs and actually penetrate cell walls to enter the circulation. Particulate matter is strongly associated with pulmonary and cardiovascular risk and with long-term mortality. Nitrogen oxides from fossil fuel combustion, including diesel exhaust, are still the major precursors of ground level ozone, which is an important trigger of asthma attacks. The California Environmental Protection Agency’s Office of Environmental Health Hazard Assessment found that

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<sup>1</sup> Union of Concerned Scientists, *Diesel Engines and Public Health*; <https://www.ucsusa.org/clean-vehicles/vehicles-air-pollution-and-human-health/diesel-engines>, 2019

“long-term exposure to diesel exhaust particles poses the highest cancer risk of any toxic air contaminant evaluated.”<sup>2</sup>

Children are more susceptible to these health effects – The developing lungs of children make them especially sensitive to the harmful effects of diesel exhaust exposure<sup>3</sup> The high prevalence of asthma in young children increases this susceptibility, and asthma attacks are important causes of school absence and of medical care-seeking for school-age children. Existing evidence indicates that diesel school buses can actually produce direct exposure of children to exhaust emissions that would be otherwise avoidable. Yale University researchers found that fine particulate matter pollution concentrations measured on buses were as much as 5-10 times higher than pollution levels measured at fixed-site pollution monitoring stations.<sup>4</sup> Another study comparing pollution levels in school buses with those in surrounding traffic determined that a child riding inside a diesel school bus may be exposed to as much as 4 times the level of diesel exhaust as someone riding in a car ahead of it.<sup>5</sup> If an average school bus ride lasts 30 minutes each way, a child will spend about 180 hours each year exposed to this health risk. Across our state, Maryland children will spend an estimated total of 80 million hours each year on school buses. This is a consequential health issue for our children.

**Reducing greenhouse gas emissions from diesel school buses** – Transitioning to all-electric school bus fleets would avert 5.3 million tons of greenhouse gas emissions each year across the U.S.<sup>6</sup> This pilot program would allow Maryland and local school districts to begin transition from our present fleet of diesel buses in a cost-effective way. As of 2020, every major manufacturer of school buses offers electric versions, and electric school buses are now available in every capacity category.

**Using an innovative win-win partnership of IOUs and school districts to make the clean energy transition** – The initial cost of an electric school bus is substantially greater than a diesel bus. HB832 will establish mutually advantageous partnerships between IOUs and selected school districts to make the cost of electric buses essentially equal to the replacement cost of a diesel bus. Through this partnership, IOUs can subsidize the additional cost of electric buses and of the ancillary charging/grid connection equipment. In return, the IOU can use the buses’ batteries to store electricity during times of low demand, and draw on that electricity when the buses are not operating – which is most of the day and often most of the summer. This storage and demand management provides the energy management service that free-standing battery storage would provide, with the advantage of providing carbon- and pollution-free transportation for schoolchildren. Moving to electric buses will also provide substantial further savings to school districts: the U.S. Public Interest Group (US PIRG) determined that the lifetime fuel, operation, and maintenance savings of electric school buses compared to diesel buses are around \$170,000;<sup>7</sup> the average life of a school bus is over 15 years. This type of IOU/school district electric bus partnership is already operating through Portland General Electric in Oregon, Con Edison in New York, and most recently Dominion Energy in Virginia.<sup>6,8</sup>

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<sup>2</sup> California Environmental Protection Agency, Office of Environmental Health Hazard Assessment and American Lung Association of California, *Health Effects of Diesel Exhaust*; 2001 (updated 2019)

<sup>3</sup> Liu, NM and Grigg, J, *Diesel, Children, and Respiratory Disease*; British Medical Journal (BMJ Paediatrics Open), 24 May 2018

<sup>4</sup> Wargo, J, *Children’s Exposure to Diesel Exhaust on School Buses*; Environment and Health; February 2002

<sup>5</sup> National Resources Defense Council Coalition for Clean Air, *No breathing in the aisles — diesel exhaust inside school buses*; <https://www.nrdc.org/sites/default/files/schoolbus.pdf>, January 2001

<sup>6</sup> Environment America and U.S. PIRG Education Fund, *Accelerating the Transition to Electric School Buses*; February, 2021

<sup>7</sup> US PIRG, *Paying for Electric Buses Financing Tools for Cities and Agencies to Ditch Diesel*; 30 October 2018

<sup>8</sup> Virginia Business, *Dominion launches electric school bus program*; October 28, 2020

Virginia anticipates expanding their program to have 50% of all diesel school bus replacements in Dominion Energy's footprint to be electric by 2025 and 100% by 2030. We see the partnership proposed under HB832 to be an innovative, feasible, future-oriented approach that addresses several health, climate, and energy transition challenges at once. We strongly urge favorable action by the Committee on HB832.

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