SB0948_Electric_School_Bus_MLC_FAV.pdf
Uploaded by: Cecilia Plante
Position: FAV

TESTIMONY FOR SB0948
PUBLIC UTILITIES – ELECTRIC SCHOOL BUS PILOT PROGRAM

Bill Sponsor: Senator Kramer
Committee: Finance
Organization Submitting: Maryland Legislative Coalition
Person Submitting: Cecilia Plante, co-chair
Position: FAVORABLE

I am submitting this testimony in favor of SB0948 on behalf of the Maryland Legislative Coalition. The Maryland Legislative Coalition is an association of activists - individuals and grassroots groups in every district in the state. We are unpaid citizen lobbyists, and our Coalition supports well over 30,000 members.

This bill creates an Electric School Bus Pilot Program that will be paid for by Maryland's utility companies. School systems in each utility service area will be eligible to purchase zero-emission electric buses rather than diesel ones at no additional cost to the school system. While the utility will cover the "incremental cost" and provide the charging infrastructure, savings from operating and maintaining the buses may be retained by the school system. In exchange, the utility companies will be able to utilize the storage batteries in each school bus to access the stored electricity through vehicle-to-grid technology.

Each utility will allow for purchase a minimum of 25 electric buses and can spend up to $50 million during the pilot program, which will run 3-5 years. The utility, in consultation with participating school systems, will provide annual reports on the costs and benefits of the program to the General Assembly, the Governor and the Public Service Commission.

There are several reasons to do this. One is that school buses produce greenhouse gases, and they should be replaced with zero-emission buses in order to reduce our greenhouse gas emissions in Maryland. Additionally, school bus exhaust pipes are right at nose level for most of the children that take the buses, and they are inhaling all of that exhaust every time they take the bus. This causes health problems for them starting at a very young age. We should work hard to get this situation turned around, and this proposal seems like a very positive way to solve the problem.

We support this bill and recommend a **FAVORABLE** report in committee.

FAV SB948 Pilot EV School Bus_Berg.pdf
Uploaded by: Christine Berg
Position: FAV

SB948 - Public Utilities – Electric School Bus Pilot Program
Date: March 22, 2022
Committee: Senate Finance Committee
Position: Favorable
Christine D. Berg, M.D.
Oncologist

I urge a favorable report from the **Senate Finance Committee** on **SB948 – Electric School Bus Pilot Program**

SB948 already favorably passed in the House, creates an Electric School Bus Pilot program in each utility service area by which school districts will be eligible to purchase zero-emission buses rather than diesel buses. It is important to expand this opportunity to school districts outside of Montgomery County, Frederick County, Howard County and Prince George's County that already own or plan to own electric school buses. Importantly, an evaluation of the environmental and health benefits of the pilot program will be done.

As an oncologist with special expertise in lung cancer risk and lung cancer screening, I would like to draw the attention of this committee to the adverse health effects of diesel school buses, particularly in school children. There has been progress over the years with improvements in diesel fuel composition, changes in engines, emissions controls, and anti-idling legislation. However, there are still 7,200 diesel school buses in operation in Maryland transporting 650,000 children with various levels of adoption of these advances.

Diesel school buses emit particulates, nitrous oxides, and other harmful compounds. These compounds are inhaled and can go deeply into the airways. Diesel exhaust contributes to asthma in children Asthma is a leading cause of chronic illness in children and contributes to absenteeism of the children and also of their caretakers who must help them during acute exacerbations. Nearly one in 10 children in Maryland suffers from asthma with a higher rate in minority children. Maryland Department of Health pre-pandemic data is revealing.[1]

- *In Maryland, **7.6%** of children have asthma (2018).*
- *In 2018, there were **29,534** asthma-related emergency department visits in Maryland (age-adjusted rate of **52.4** per 10,000 residents). Among children under 5, the emergency department visit rate was **119.4** per 10,000 residents.*
- *In 2018, there were **3,113** asthma-related hospitalizations in Maryland, totalling **$27.7** billion in healthcare costs.*

Also, as can been seen in Tables 1 and 2 (from the same source) in the attachment, younger children and minorities are more at risk. Of note, there is convincing evidence that cleaner buses improve respiratory function and lower absenteeism.

1. https://health.maryland.gov/phpa/OEhfp/eh/Pages/asthma.aspx#:~:text=In%20Maryland%2C%207.6%25%20of%20children,was%20119.4%20per%2010%2C000%20residents Accessed February 8, 2022.

Addressing particulates and nitrous oxides is important, however, measures to address carbon dioxide emissions which this Electric School Bus pilot program will do is critical. If we do not limit these emissions sharply our climate change problems will worsen. School age children hopefully have long lives ahead for which we are preparing them with their education. We need to do our best to ensure that the future that they are being prepared for will be environmentally stable and one in which human health can be optimized.

A recent study, published last month in The Lancet, of 10,000 people ages 16 to 25 shows an alarming rate of pessimism about the future. As was mentioned in a New York Times report about the study, forty-five percent of respondents said worry about climate negatively affected their daily life. Three-quarters said they believed "the future is frightening." This is a very worrisome assessment of the thoughts of the young. All adults, including members of this committee, owe it to this generation of school children and future school generations of children to provide a livable planet and ease this fear.

Thank you for your consideration of **SB948**. I urge a favorable vote on this legislation from the **Senate Finance Committee.**

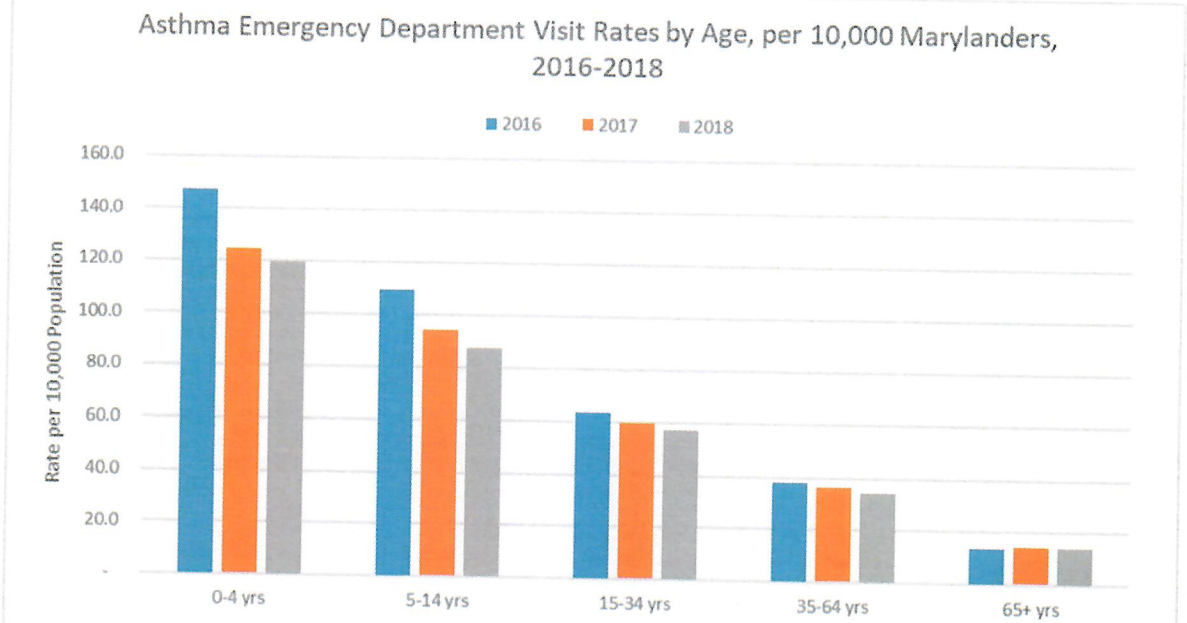
Christine D. Berg, M.D.

Christine D. Berg, M.D.
8003 Greentree Road
Bethesda, MD 20817
drchrisberg@outlook.com
301-908-0398 (cell)

2.

3. Attachment:

4. Table 1:

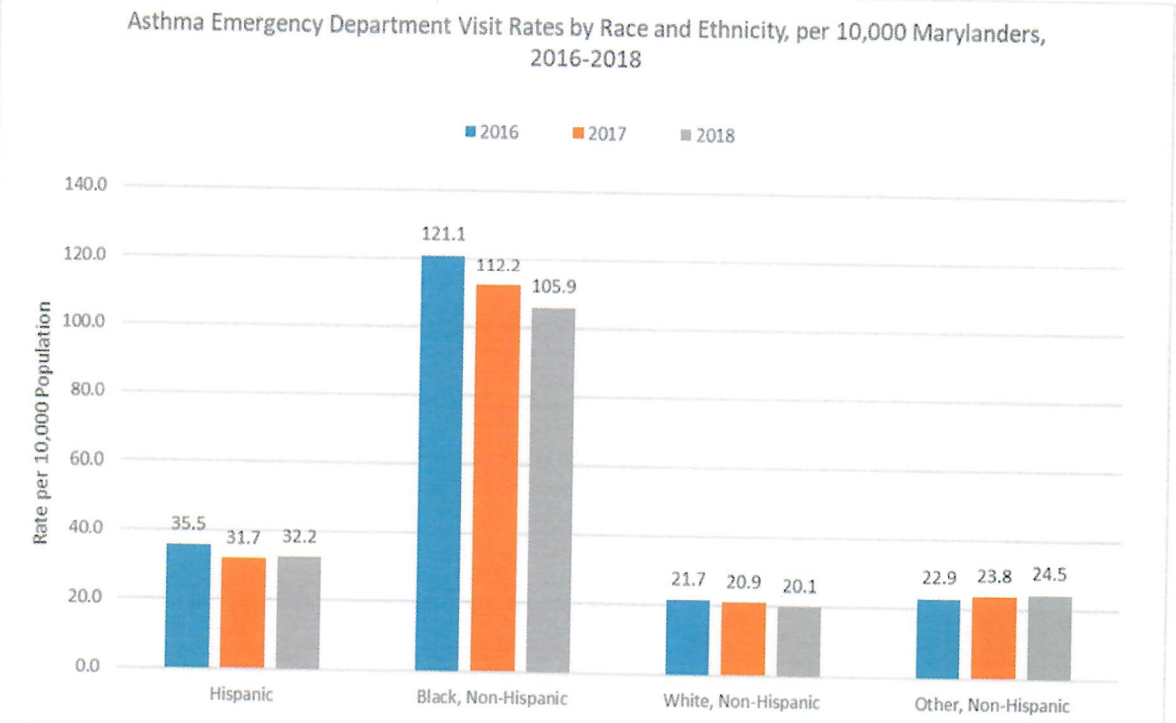


Data source: 2016-2018 Health Services Cost Review Commission (HSCRC).
Prepared by Center for Environmental, Occupational, & Injury Epidemiology on May 3, 2021

5.

6.

7. Table 2:



Data source: 2016-2018 Health Services Cost Review Commission (HSCRC).
Prepared by Center for Environmental, Occupational, & Injury Epidemiology on May 3, 2021

8.

SB948-EV School Bus Pilot - FIN-CJW-FAV.pdf
Uploaded by: Diana Younts
Position: FAV

Committee: Finance
Testimony on: SB948 - Public Utilities - Electric School Bus Pilot Program
Organization: MLC Climate Justice Wing
Submitting: Diana Younts, Co-Chair
Position: Favorable
Hearing Date: March 22, 2022

Dear M. Chair and Committee Members:

Thank you for allowing our testimony today. The MLC Climate Justice Wing, a statewide coalition of over 50 grassroots and professional organizations, urges you to vote favorably on SB948.

SB948 creates an Electric School Bus Pilot Program. Under the program, school districts in each utility service area will be eligible to purchase zero-emission electric buses rather than diesel ones. The program ensures there are no additional capital, administrative, or operational costs to the school system. And with vehicle-to-grid electric school buses that can serve as back up batteries and service the electric grid, school districts could even save money. Savings can instead go to educational programs, teachers' salaries, and assistance to students.

Diesel Bus Fumes Harm Our Children. Twice a day, five days a week, the children of Maryland must breathe in high concentrations of diesel fumes to get to and from school. A child riding inside of a diesel school bus may be exposed to as much as 15 times as many pollutants than kids not riding a diesel bus. The consequences are well understood. Diesel exhaust is carcinogenic, reduces lung function and increases asthma and pneumonia in children. Diesel tailpipes spew out more than 40 toxic substances, smog-forming nitrogen oxides and black sooty particulate matter, which lodges deep in children's lungs, creating life-threatening health problems. Children are most at risk because their lungs are still developing, and they breathe two times more air per pound of body weight than adults do. The damage can result in permanently reduced lung function and lifelong health problems.

Diesel Buses Pollute. Diesel school buses harm the environment in a number of other ways. They are a major source of greenhouse gas emissions, each bus emitting about 24 tons of CO2 per year—6 times as much as an average car. Nitrogen oxide, a major constituent of diesel exhaust, contributes to acid rain, ozone formation, and smog. Frequently, it is the most

vulnerable populations that are hit hardest by diesel and other toxic pollution. Environmental justice communities suffer higher rates of air pollution, are hospitalized more often for respiratory illnesses and are disproportionately impacted by climate change. In some environmental justice neighborhoods, 1 in 4 children has asthma.

The Electric School Bus Pilot Program is a no-lose proposition that would provide health and educational benefits to our students and improve the environment for all Marylanders.

We support this bill and recommend a **FAVORABLE** report in committee.

MLC Climate Justice Wing:

Assateague Coastal Trust
Maryland Legislative Coalition
MD Campaign for Environmental Human Rights
Chesapeake Climate Action Network
WISE
Frack Free Frostburg
Mountain Maryland Movement

Howard County Indivisible
Howard County Sierra Club
Columbia Association Climate change and sustainability advisory committee
HoCo Climate Action
CHEER
Climate XChange - Maryland
Mid-Atlantic Field Representative/ National Parks Conservation Association
350 Montgomery County
Glen Echo Heights Mobilization
The Climate Mobilization Montgomery County
Montgomery County Faith Alliance for Climate Solutions
Montgomery Countryside Alliance
Takoma Park Mobilization Environment Committee
Audubon Naturalist Society
Cedar Lane Unitarian Universalist Church Environmental Justice Ministry
Coalition For Smarter Growth

DoTheMostGood Montgomery County
MCPS Clean Energy Campaign
MoCo DCC
Potomac Conservancy
Casa de Maryland
Nuclear Information & Resource Service
Clean Air Prince Georges
Laurel Resist
Greenbelt Climate Action Network
Maryland League of Conservation Voters
Unitarian Universalist Legislative Ministry of Maryland
Concerned Citizens Against Industrial Cafos
Wicomico NAACP
Chesapeake Physicians for Social Responsibility
Chispa MD
Climate Law & Policy Project
Maryland Poor Peoples Campaign
Labor for Sustainability
The Nature Conservancy
Clean Air Prince Georges
350 Baltimore
Maryland Environmental Health Network
Climate Stewards of Greater Annapolis
Talbot Rising
Adat Shalom Climate Action
Mid-Atlantic Earth Holders
Climate Parents of Prince Georges
Echotopia

Maryland NAACP State Conference,
Environmental Justice Committee

CLPP testimony SB0948 FAVORABLE.pdf
Uploaded by: Donald M. Goldberg
Position: FAV

Climate Law & Policy Project

Committee: Finance
Testimony on: SB0948 Public Utilities - Electric School Bus Pilot Program
Submitted by: Donald M. Goldberg, Executive Director
Position: Favorable
Hearing Date: March 23, 2022

Testimony on the Benefits of Electric School Bus Utilization of Vehicle to Grid (V2G) Technology

Many schools districts all over the country — urban, suburban, and rural — have been using electric school buses with great success. New electric school buses are capable of traveling more than 150 miles on a single charge, much farther than a typical school bus route. They operate efficiently in inclement weather and can handle the roughest terrain.

A particular virtue of electric school buses is that they contain very large batteries, up to 11 or 12 times the size of electric car batteries. As explained below, these mobile batteries would be very valuable to Maryland's electricity system and to schools and other buildings that can take advantage of the enormous amounts of power stored in electric bus batteries by using technologies called "vehicle-to-grid" (V2G), "vehicle-to-building" (V2B), and sometimes "vehicle-to-everything" (V2X).

These technologies allow for bidirectional power flow, meaning that vehicles can discharge power back to the grid or a building when they are plugged in, providing demand response services, participating in energy or capacity markets, or even serving external load sources, such as buildings. The grid flexibility offered by V2G will become increasingly important as the share of intermittent renewable energy sources on the grid grows.

The grid balancing provided by vehicle-to-grid technology is a valuable asset to electric utilities, and several utility companies, including Dominion Energy in Virginia, Portland General Electric in Oregon, National Grid in Massachusetts, and Con Edison in New York, have launched successful programs to help school districts adopt electric buses. As is the case with the Electric School Bus Pilot Program created by Senate bill 948, these utilities pay for the incremental cost – that is, the difference in cost of purchasing and operating electric school buses as compared to diesel ones.

Although this concept has been around for more than a decade, pilot projects are relatively new, and results of these projects are just starting to come in. One pilot at Beverly Public Schools in Beverly, Massachusetts has demonstrated great results. A single electric school bus equipped with a V2G battery system discharged nearly 3 MWh of electricity stored in the bus to the regional electric grid over the summer. If all the school buses in Maryland were electric and performed like the Beverly school bus, they could potentially provide more than 100 GWh of power to the grid each year. That's equivalent to several days of power from Calvert Cliffs.

In addition to being an important asset for utilities, V2G can be a key component of a resiliency hub or emergency shelter, if that hub or shelter is wired to accept energy from the batteries. Typically this means having a bidirectional charger, something that likely will be commonplace as electric vehicles become more widely adopted. Electric school buses could be used to keep power on in shelters, emergency response centers or other key areas of need during a disaster. When severe weather

Climate Law & Policy Project

warnings are issued, a fleet of electric buses with V2G capability could be deployed to critical locations before transmission lines are powered down and could quickly restore power to critical infrastructure in communities that are blacked out as a result of fire or storm damage to transmission lines.

Many schools in Maryland are designated as emergency shelters. Powerful electric school bus batteries, plugged into highly efficient net-zero schools, can create self-contained emergency shelters capable of operating off the grid for days or even weeks during emergencies.

Ratepayers are likely to see significant cost savings from the deployment of electric school buses. Access to batteries, whenever and wherever they are needed (keep in mind, they are mobile), will make the grid more stable and able to accommodate more intermittent energy and distributed energy resources (DERs), which increase options that drive down electricity costs and have been shown to be inherently cheaper.

As Maryland builds more net-zero energy schools, electric buses can help generate revenue for these schools that can be used to support teacher salaries and other educational purposes. As an example, Maryland's first net-zero energy school, Wilde Lake Middle School, in Columbia, has solar panels that in the first year of operation generated twice as much energy as the school consumed. That excess electricity could be stored in electric bus batteries and sold back to the grid during peak hours, when electricity can be four or five times higher than when the electricity was captured by the batteries. It should also be noted that electric buses are much cheaper to operate, saving 60% or more on fuel and repairs.

Electric school buses and other emerging clean technologies, such as net-zero energy schools, can be an extremely valuable asset not only to Maryland's utilities but to its school districts, its communities, and to the State, as it strives to meet its greenhouse gas reduction goals.

Climate Law & Policy Project urges a favorable vote on Senate bill 948.

SB 948_CBF SUPPORT.pdf
Uploaded by: Doug Myers
Position: FAV

CHESAPEAKE BAY FOUNDATION

Environmental Protection and Restoration
Environmental Education

Senate Bill 948

Public Utilities – Electric School Bus Pilot Program

Date: March 22, 2022
To: Finance Committee

Position: **Support**
From: Doug Myers, Maryland Senior Scientist

Chesapeake Bay Foundation (CBF) **SUPPORTS** SB 948 which establishes an electric school bus pilot program through investor–owned electric companies.

CBF encourages the electrification of vehicle infrastructure throughout the state as one of the fastest mechanisms to support the development and deployment of electric charging infrastructure and decarbonization of the transportation sector. Greenhouse gas reductions have the added benefit of reducing nitrous oxide emissions, a significant bay pollutant when those air emissions fall back to the surface from rain. Developing a robust school bus electrification program may lead to full implementation of a phasing of school buses throughout the state toward electrification and in neighboring states in the Chesapeake airshed, the nine-state area from which fallout from nitrous oxide emissions become Bay pollutants.

CBF urges the Committee's FAVORABLE report on SB 948. For more information, please contact Robin Clark, Maryland Staff Attorney at rclark@cbf.org and 443.995.8753.

Maryland Office ▪ Philip Merrill Environmental Center ▪ 6 Herndon Avenue ▪ Annapolis ▪ Maryland ▪ 21403
Phone (410) 268-8816 ▪ Fax (410) 280-3513

MD Senate_Electric School bus pilot_LNS written te
Uploaded by: Elizabeth Bunn
Position: FAV

LABOR NETWORK FOR SUSTAINABILITY

A PROJECT OF VOICES FOR A SUSTAINABLE FUTURE, INC.

Labor Network for Sustainability seeks to build a powerful labor-climate movement to secure an ecologically sustainable and economically just future where everyone can make a living on a living planet.

Committee: Finance

Testimony on SB 948: Public Utilities-Electric School Bus Pilot Program

Position: Favorable

Hearing Date: March 22, 2022

Dear Chairwoman Kelley and Members of the Committee:

The Labor Network for Sustainability supports SB948 and urges a favorable report.

SB 948 creates an Electric School Bus Pilot Program by which school districts in each utility service area will be eligible to purchase zero-emissions electric buses at no additional capital, administrative, or operational costs to the district. Maryland is already a leader in the conversion to emission free school buses. Several school districts in Maryland–including Montgomery, Howard, and Prince George's Counties–already own, or plan to purchase electric school buses. This program would expand the benefits of electric school buses to every school district in Maryland within the territory of an investor-owned utility.

There are compelling reasons to accelerate the conversion of diesel school buses to zero emissions vehicles. Studies have shown that diesel pollutants concentrate inside a bus cabin, increasing the exposure to children and operators Diesel emissions are filled with carcinogens, particulate matter, and soot that increases the risk of a number of serious pulmonary and other diseases. SB 948 would take an important step in lowering the risk of chronic illnesses, like asthma. Diesel buses also harm our environment. They are a major source of greenhouse gas emissions and nitrogen oxide which contributes to acid rain, ozone formation, and smog.

SB948 is fiscally responsible. While the up-front purchase price of an electric school bus is higher than that of a diesel bus, those costs are coming down and the operating and maintenance costs are lower. The current price differential will be made up by the utility who will benefit from the Vehicle-to Grid technology provided by electric batteries.

SB948 also ensures that bus operators and maintenance employees will be trained on the new technology, thereby ensuring that the transition is smooth, just, and successful. It will be important for districts to work closely with their union partners in developing and implementing training programs.

SB948 is good for school children, school districts, school employees, and communities. The Labor Network for Sustainability urges a favorable report.

Elizabeth Bunn
Maryland State Director
Ebunn@labor4sustainability.org

SB0948 - Electric School Bus Pilot Program - Testi

Uploaded by: Joseph Jakuta

Position: FAV

Committee: Finance
Testimony on: SB 948 - "Electric School Bus Pilot Program"
Organization: Climate Parents of Prince George's
Person Submitting: Joseph Jakuta, Lead Volunteer
Position: Favorable
Hearing Date: March 22, 2022

Dear Ms. Chairwoman and Committee Members:

Thank you for considering our testimony today in support of SB 948 - "Electric School Bus Pilot Program." Climate Parents is a campaign to reduce climate change causing pollution in our schools and our group is active in Prince George's County. In particular, we are currently working directly with Prince George's County Public Schools (PGCPS) technical staff, elected officials, and other advocates to develop a Climate Change Action Plan for PGCPS as part of a focus work group created by the Board of Education.

The need to transition to zero emission school buses is vital for Maryland to meet its obligation to leave a better world to the current generation of young people and to future generations. We cannot become the zero emission society that we need to by 2045 if our school systems continue to rely on dirty 20th century transportation technologies.

Electric buses are also quite important to the health of our children. Diesel school buses produce high levels of fine particulate matter exhaust, which, when inhaled, can lead to premature death[1], impact learning[2], and exacerbate asthma, among other problems.[3] It might be hard to imagine, but every time a diesel bus door opens the exhaust flows in and through the bus – it is just like the children are breathing straight from the tailpipe.[4] And while students and drivers themselves are the most exposed, the communities that these buses traverse on their way to school also experience this harmful diesel pollution.

This approach of utilizing electric school bus batteries for grid support has the potential to make electric buses more affordable by allowing for an innovative way to finance the higher up front costs. Vehicle-to-grid (V2G) school buses will also help to both reduce the impact on reliability to the grid renewables have and to limit the time dirty peaking, often oil-fired, power plants are needed to run during hot ozone polluted summer days.

Through our work with PGCPS on the focus workgroup we saw an analysis developed by the American Council for an Energy Efficient Economy that showed first hand which communities are most affected negatively by air pollution from school buses and these are the same communities that are easiest to electrify bus routes for. We also heard directly from the PGCPS Transportation Department that they

---

[1] Liu, Norrice M, and Jonathan Grigg. "Diesel, children and respiratory disease." *BMJ pediatrics open* vol. 2,1 e000210. 24 May. 2018, doi:10.1136/bmjpo-2017-000210

[2] Costa, Lucio G et al. "Developmental impact of air pollution on brain function." *Neurochemistry international* vol. 131 (2019): 104580. doi:10.1016/j.neuint.2019.104580

[3] Sibanda, E., Makaza, N. Health effects of diesel engine exhaust emissions exposure (DEEE) can mimic allergic asthma and rhinitis. *Allergy Asthma Clin Immunol* **15,** 31 (2019).

[4] NRDC. "No Breathing in the Aisle: Diesel Exhaust Inside School Buses." https://www.nrdc.org/sites/default/files/schoolbus.pdf

are “ready for the future” and about to put their pilot electric bus funded through the Volkswagen Settlement in service.[5]

Additionally, recent recommendations transmitted from the aforementioned focus work group, recommend that 50% of PGCPS’s bus routes be electrified by 2030, 100% by 2040, expansion of training for mechanics and drivers on electric buses, and examination of V2G as a potential funding mechanism.[6] SB 948 will provide a crucial tool for meeting these recommendations and while these recommendations were developed for PGCPS, they are certainly relevant to other local education agencies in Maryland.

We also want to reinforce support for inclusion of training requirements, seat belt requirements, and requirements to work in underserved areas since these are important for successful implementation of the program and to achieve equitable safety and health outcomes.

We encourage a FAVORABLE report for this important legislation.

---

[5] PGCPS Climate Change Action Plan Focus Workgroup November 17, 2022 Meeting. https://www.youtube.com/watch?v=BW1h81xxbPY

[6] PGCPS Board of Education Climate Change Action Plan Focus Work Group. “Climate Change Action Plan (CCAP) Priority Recommendations.” https://go.boarddocs.com/mabe/pgcps/Board.nsf/c4cf1644198dfd9986257503000d636f/1487cbd08950f0ad85258809007b70c5/$FILE/PGCPS%20Climate%20Change%20Action%20Plan%20Recommendations%20-%20FINAL%20March%2015%202022r.pdf

SB948_MDSierraClub_fav - 22March2022.pdf
Uploaded by: Josh Tulkin
Position: FAV

P.O. Box 278
Riverdale, MD 20738

Committee: **Finance**
Testimony on: **SB 948 – "Public Utilities – Electric School Bus Pilot Program"**
Position: **Favorable**
Hearing Date: **March 22, 2022**

The Maryland Chapter of Sierra Club strongly supports SB 948 which would establish an electric school bus pilot program that would be funded by investor-owned electric companies. The goal of the program is to enable school districts to purchase zero-emission electric school buses instead of diesel buses at no additional cost to the school districts. Diesel buses are a major source of greenhouse gases and health-damaging toxic emissions, so they need to be replaced. The innovative program proposed in SB 948 would allow electric utilities to recover reasonable costs of the pilot program through a ratepayer adjustment, and when electric school buses are not in use, the utilities would be able to access stored energy from bus batteries when energy demand is high.

The electric school bus pilot program would be administered by the Public Service Commission (PSC) and would run for a period of three to five years. The program would involve investor-owned electric companies applying to the PSC to implement an electric school bus pilot program within the territory they serve. Each participating utility would provide electric school bus rebates to participating school systems and deploy a minimum of 25 electric school buses. Total rebates paid by each participating utility would be limited to $50,000,000.

There are approximately 7,200 diesel school buses in Maryland now that travel more than 128 million miles every year in total. Each diesel school bus emits about 27 tons of climate-damaging CO2 per year – six times as much as an average car. Diesel exhaust contains more than 40 toxic air contaminants that can cause or worsen diseases such as cancer and asthma, particularly in young children whose bodies are more susceptible to its health-damaging properties. Studies show a child riding inside of a diesel school bus may be exposed to as much as 15 times the level of toxic diesel exhaust compared to someone riding in a car. Diesel exhaust also contributes to ozone pollution, smog, and acid rain. More than 80% of Marylanders live in counties that do not meet federal clean air standards for ozone, due in large part to vehicle tailpipe emissions.

Electric school buses have lower costs of operation and maintenance than diesel school buses as they have fewer engine components and much lower fuel costs. Electricity that must be generated to charge electric vehicle batteries is increasingly coming from renewable wind and solar power sources, and the percentage of clean, renewable energy generated continues to grow. Electric school buses are also much quieter, allowing drivers to communicate more easily with students.

In summary, SB 948 proposes an innovative way to help school systems purchase electric school buses. The program would reduce the climate and health-damaging diesel school bus exhaust fumes our children and environment now endure, while providing electricity to the grid from bus batteries during the summer when electricity demand is at its highest and school buses are not in use. We urge the committee to issue a favorable report on this bill.

Brian Ditzler
Transportation Chair
Brian.Ditzler@MDSierra.org

Josh Tulkin
Chapter Director
Josh.Tulkin@MDSierra.org

Testimony for senate - Google Docs.pdf
Uploaded by: Justin Carlson
Position: FAV

Thank you, senators, for hearing my testimony on behalf of House bill 696. My name is Justin Carlson and I am currently an Intern under Mr Fraser-Hidalgo of Maryland district 15. As we know right now, the world is warming, this warming, if it continues to increase past 2 degrees Celsius, will cause damage to the Earth that could be irreversible. Changing the ***heavily polluting*** Diesel-powered school buses to electric ones will help lower the emissions from Maryland. Not only are electric buses *greener* and *safer* for the planet, but they will also save the state a substantial amount of money in diesel prices and maintenance fees.

In order to research this topic, I looked at the information provided to me by Mr Fraser-Hidalgo, which was given to him by the bus manufacturers. 1 electric bus gets 155 miles for a 220KwH charge. To compare electric buses to diesel buses, I also gave the Diesel buses a range of 155 miles. A diesel bus, in order to go 155 miles, with an average of 8.5 miles per gallon, provided by Thomas buses themselves, a diesel bus needs 18.235 gallons of Diesel. With the cost of diesel at $5.6, as it is in my neighbourhood, it will cost $102.12 for a diesel bus to go 155 miles. However, in order to cover 155 miles, an electric bus with a charge of 220 KwH in order to cover 155 miles, costs 22 dollars, as electricity prices are .10 per kWh. This is a price difference of $80.12. So we have already established that the electric bus already saves you $80.12 dollars for 155 miles. However, a diesel bus can hold between 80-100 gallons of diesel, which can get you between 680-850 miles, which is between 4 and 6 charges for an electric bus. This costs you between $448-560 to fill the tank with diesel. But for an electric bus, this only costs 88-132 dollars. Saving 360-428 dollars even though you are recharging the electric bus multiple times.

Based on my math, you would have to recharge an electric bus every 3 days. I found this by recording the distance of my bus's total route, which is 8 miles. I then multiplied this by 6 since most buses do a route for elementary school, middle school and high school, for the morning and afternoon. This comes out to 48 miles a day for one bus. So you would need to recharge or refuel the bus every 3 days if it has a range of 155 miles. Over one full school year of 180 days, or 60 refuels you save $4,483.93 on one bus. For the full 15 year lifespan of one of these buses, you save $67,259. This doesn't include buses working in the summer or doing school field trips. Which raises the amount of savings even more.

Along with being more cost-effective, electric buses are more environmentally friendly. If the bus has to be powered by non-renewable energy sources, it is much less polluting compared to diesel. Diesel produces about 22.4 lb of co2 per gallon, while the production of one KwH created .85 lb of co2 according to information provided by the EPA. For 155 miles, a diesel bus will produce 408.46 pounds of co2, while an electric bus will produce a mear 187 pounds, a difference of 221.01 pounds of co2. For a full school year, that is a difference of 13,287.6 pounds of co2. And the best thing is if these electric buses are powered by 100% renewable energy sources, then the electric bus will produce ZERO, ZERO pounds of co2. Which is a difference of 24,507.6 pounds of co2 a year. The 15 year lifetime of one of these electric buses, will save over 294,091.2 pounds of co2 from being released into the air.

Another cost associated with diesel buses is the maintenance cost(s). Based on the resources I found they say that it costs on average $1.53 per mile for maintenance of a diesel bus. Electric buses still require maintenance, but they are *significantly* cheaper, at $.55 per mile. A cost difference of $.98 cents, which can build up over time. For a diesel bus, it costs $14,229 a year on maintenance. While an electric bus only costs $5,115. A difference of over $9,114. Over its 15-year life span that is a saving of over $136,710. This price doesn't even include engine breakdowns, crashes, and other unknown expenses. This just covers the cost of things like tire replacement, engine/motor maintenance, and battery replacement.

One of the things people are wary of at first is the high upfront cost of an electric bus. This cost is $355,000 USD according to the information provided to me by Mr. Fraser-Hidalgo. This costs more than the standard diesel bus at around $180-200,000. However, according to the math I did, not only will you pay the bus off within its 15-year lifespan but it will also save upwards of $48,969 USD but could also save even more if gas prices continue to rise. If you replace all 7,300 buses in Maryland, you would save over 357,473,700 dollars over a 15 year period. I believe that this is the best option for Maryland to help us work to net-zero carbon emissions and help save Maryland schools' system money.

Feel free to email me with any questions you have about my testimony!
If you need to email me, my email is Jecarlson17@gmail.com

2022-SB948 EV BUS- PHI FAV.pdf
Uploaded by: Katie Lanzarotto
Position: FAV

March 22, 2022

112 West Street
Annapolis, MD 21401

FAVORABLE - Senate Bill 948
Public Utilities –Electric School Bus Pilot Program

Potomac Electric Power Company (Pepco) and Delmarva Power & Light Company (Delmarva Power) support **Senate Bill 948 Public Utilities – Electric School Bus Pilot Program**. Senate Bill 948 would establish the Zero Emission School Bus Pilot Program beginning in October 2024 for a period of three to five years for the deployment of not less than 25 electric school buses with rebates that do not exceed $50 million. The bill also permits investor owned utilities to utilize the storage batteries of the electric school buses in order to access the stored electricity through vehicle to grid technology when the school buses are not in use. Furthermore, it allows the investor owned electric utility to deploy, own and operate electric charging infrastructure capable of supporting vehicle to grid operations in order to meet the charging requirements to support electric school buses deployed in the program.

In July 2020, Maryland signed a Memorandum of Understand (MOU) with 15 states and the District of Columbia in a commitment to phase out fossil fuel-burning medium to heavy duty truck and bus sales by 100% by 2050, with a target for 30% of new truck and bus sales to be zero-emission by 2030.[1] As part of this process, Maryland is working with stakeholders to develop both a regional and Maryland specific action plan that will outline how the state and the region will achieve the goals of the MOU. Electric vehicle deployment contributes to many of the state's environmental and transportation goals and deployment on school buses is among the most obvious platforms to advance the technology as these buses are usually located in centralized fleet locations where charging infrastructure can be effectively installed.

Encouraging the expansion of public-school transit EV options is critically important because transportation is the largest contributor to greenhouse gas emissions in Maryland. For the above reasons Pepco and Delmarva Power respectfully request a favorable report on Senate Bill 948.

Contact:
Katie Lanzarotto
Senior Legislative Specialist
202-428-1309
Kathryn.lanzarotto@exeloncorp.com

[1] Multistate-Truck-ZEV-MOU-Media-Release-20200714 (2).pdf (maryland.gov)

MCAF Testimony on SB 948.pdf
Uploaded by: Larissa Koehler
Position: FAV

March 21, 2022

Testimony on SB 948
Public Utilities – Electric School Bus Pilot Program
Finance Committee

Position: Favorable

Moms Clean Air Force submits this testimony to express strong support for Senate Bill (SB) 948, which would require the state's Public Service Commission to implement and administer an electric school bus pilot. By passing this bill, Maryland would be furthering its environmental leadership and addressing harm to one of the state's most vulnerable populations - children.

Every day, our children ride approximately 7,200 diesel-powered school buses to and from school. Despite a significant push to electrify school buses, largely spearheaded by Montgomery County, Maryland still has only committed to electrifying 332 buses as of the end of 2021[1] - a small fraction of the polluting school buses on Maryland's roads. I know from personal experience that the reach of electric buses does not yet go far enough - my children go to elementary school in Montgomery County, and currently still ride dirty diesel buses every day.

The emissions emanating from these vehicles - which includes greenhouse gases, particulate matter, and nitrogen oxide emissions - present a staggering problem. Since school buses travel through residential communities, the pollution emitted from these tailpipes contributes significantly to respiratory and cardiovascular illnesses, among other diseases – in other words, the dirty air impacts health. Moreover, the primary users of these buses – children – are at greater risk than the general population. Given their still-developing lungs, children are more vulnerable to school bus emissions, which are 4-12 times higher in the cabin of the bus compared to ambient levels. In addition, wheelchair access is often closest to the tailpipe, putting children who may be even more vulnerable at an extra risk. And, children from low-income families, are more likely to be breathing in diesel exhaust from school buses.[2] Studies

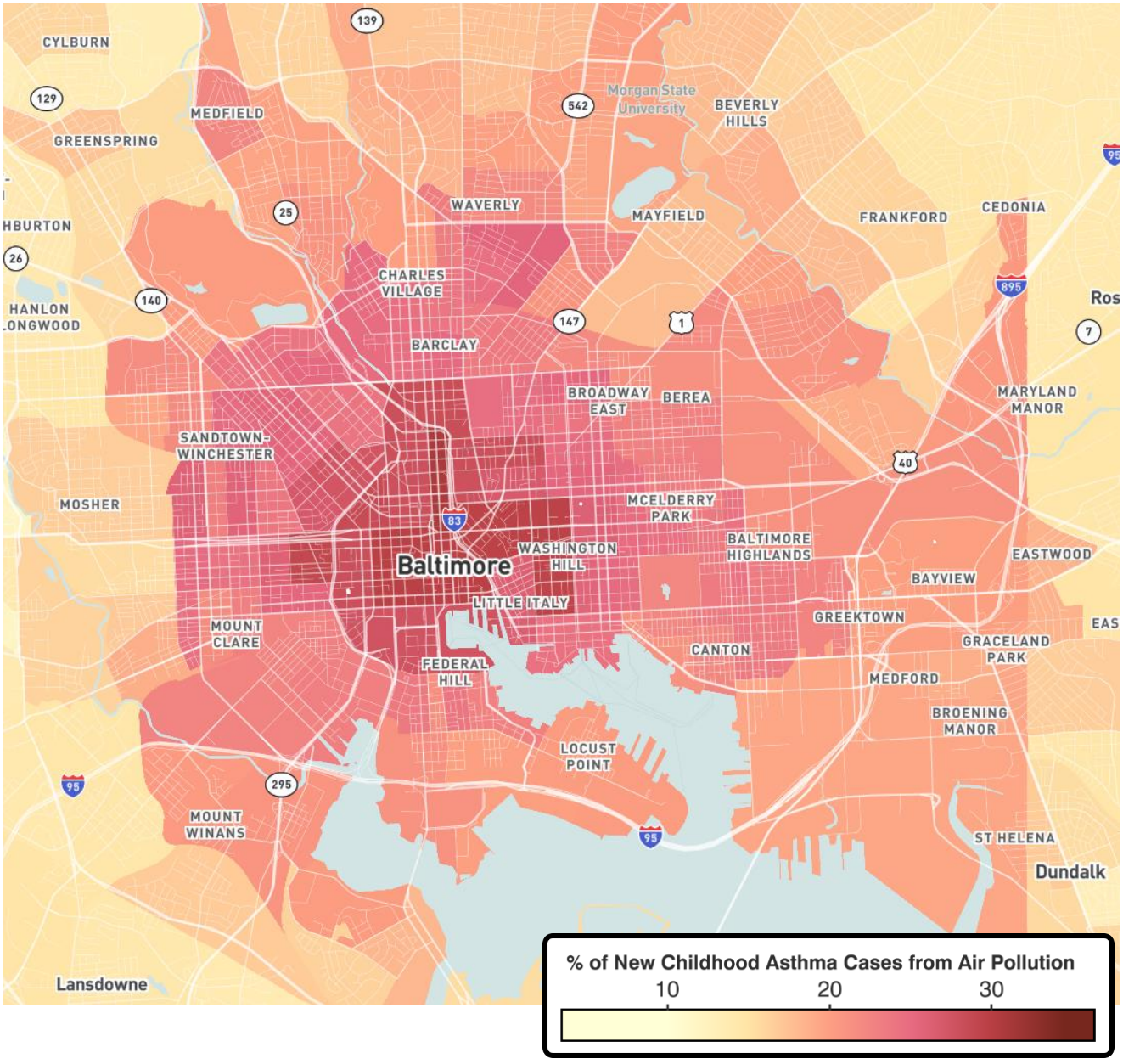
[1] World Resources Institute, *The State of Electric School Bus Adoption in the US,* https://www.wri.org/insights/where-electric-school-buses-us.
[2] *Id.*

have shown that a transition to clean school buses can result in fewer missed school days, as a result of reductions in lung inflammation and asthma episodes.

One need only look at the appended map, which shows rates of pediatric asthma in Baltimore, to see how dire the situation is for children in certain areas of the state; diesel buses are surely a contributor to those health impacts.

SB 948 can move the needle forward by requiring the formulation of a program that will reduce the upfront cost of electric buses, one of the predominant barriers preventing school districts from transitioning to zero-emission school buses. As well, providing fair payment for vehicle-to-grid services will bolster the lifetime savings of electric buses, bolstering the scalability of these vehicles. In other words, this bill can go a long way in ensuring our children are safe and healthy – and that we see increasing numbers of zero-emission school buses on the road. For the aforementioned reasons, Moms Clean Air Force urges a **favorable** report for Senate Bill 948.

Appendix A: Childhood Asthma in Baltimore



- In Baltimore, nitrogen dioxide pollution contributes to **more than 1,300 new childhood asthma cases** every year.
- In some areas of the city, as many as **1 in 4 new childhood asthma cases are attributable to pollution** – across Baltimore, approximately 15% of cases, on average, are attributable to pollution.

Map and estimates based on methodology described in:

SC Anenberg, A Mohegh, DL Goldberg, GH Kerr, M Brauer, K Burkart, P Hystad, A Larkin, S Wozniak, L Lamsal. Long-term trends in urban NO2 concentrations and associated paediatric asthma incidence: Estimates from global datasets. The Lancet Planetary Health Volume 6, Issue 1, 2022, Pages e49-e58. https://doi.org/10.1016/S2542-5196(21)00255-2.

testimony.pdf
Uploaded by: Lindsay Howard
Position: FAV

Good afternoon everyone.

Thank you for allowing me to express why the Electric School Bus Pilot Program bill must be enacted within the state of Maryland. Particulate matter levels inside school buses are greater than levels outside the bus due to the engine crankcase and the tailpipe emissions. As a result, children and bus drivers are more exposed to harmful toxins contained within particulate matter. These toxins cause aggravated asthma and childhood cancer. Not only does particulate matter promote a pro-inflammatory environment in the airways of children, but it also is a transport carrier for COVID-19. Recent studies have shown the disproportionate impacts of school buses as 60% of students from low-income families ride these toxic buses to school, compared to 45% of students from families with higher incomes. In contrast, studies have found that electric vehicles improve lung functions in children due to the reduction in diesel tailpipe emissions. Not only have studies shown that electric vehicles lower the health costs that children endure, but they also reduce the financial costs of transportation. Electric vehicles require less expensive and less frequent maintenance than gasoline and diesel-powered vehicles because there are fewer components that need replacement and lubrication, and air filters are not needed. Additionally, while gasoline prices fluctuate, electricity prices remain relatively stable. Not only is the current school bus transportation system a public health and economic problem, but it also factors as an environmental problem. Diesel-fueled transportation accounts for at least 14% of global greenhouse gas emissions, roughly eight billion tons of carbon per year. In contrast, if electric school buses replaced diesel-fueled buses than U.S. carbon emissions would be cut by more than 5 million tons. Overall, the implementation of the Electric School Bus Pilot Program will solve public health, environmental, transportation, and economic issues. Thank you for your time.

SB948 M_LaPorte_FAV testimony.pdf
Uploaded by: MARIE LAPORTE
Position: FAV

Committee: **Finance Committee**

Testimony on: **SB948/HB696 – The Electric School Bus Pilot Program**

Position: **Support**

Hearing Date: **March 22, 2022**

I am writing as a Maryland resident requesting a favorable review of SB948, The Electric School Bus Pilot Program.

Almost 20 years ago, my daughter, who was then a student at Franklin Elementary in Reisterstown, had her first asthma attack. Neither my husband nor I had any history of asthma in our families and little experience with this terrifying respiratory ailment. The first incident occurred on a warm summer day after my daughter was running around playing with friends.

For people who have not experienced this, it is truly is terrifying watching your young otherwise healthy child suddenly struggle severely to breathe. Over the years, these attacks occurred more frequently and in unexpected places. A trip to Oriole Park triggered one such attack. Perhaps it was the grills outside the park or the general air pollution, but even a day at the ballpark was unsafe for my daughter without the aid of her inhaler.

While my daughter was a student, she rode the bus each day. We live on the edge of a rural area and the ride was about 40 minutes to get to our neighborhood. At the time, Baltimore County did not allow students to carry any medication, *including a rescue inhaler* with them. So for about an hour every day my daughter was vulnerable to having a potentially deadly attack, just trying to get to school and back. I feel it's important to mention that my daughter had mild to moderate asthma, yet it was pretty routinely traumatic for her and us even with expensive medication and careful management.

In Maryland, about 1 in 10 children suffer from asthma and 1 in 5 in Baltimore. For these children, sometimes even a modest reduction in their exposure to pollution can be the difference between getting by or having an asthma attack that day. If a bus holds 65-74 children, roughly 6 to 15 children will likely be impacted by asthma on that bus. We know that diesel school buses can generate harmful levels of particulate matter (PM 2.5) triggering these attacks, shouldn't we protect our most vulnerable and help to improve their air quality? In the long run it will save money and lives.

I respectfully request a favorable report on SB948/HB696.

Sincerely,

Marie LaPorte, Reisterstown, MD

SB0948-FAV-DTMG-3-22-22.pdf
Uploaded by: Olivia Bartlett
Position: FAV

Olivia Bartlett, DoTheMostGood Maryland Team

Committee: Finance

Testimony on: SB0948 – Public Utilities – Electric School Bus Pilot Program

Position: Favorable

Hearing Date: March 22, 2022

Bill Contact: Senator Benjamin Kramer

DoTheMostGood (DTMG) is a progressive grass-roots organization with more than 3000 members across all districts in Montgomery County as well as a number of nearby jurisdictions. DTMG supports legislation and activities that keep residents healthy and safe in a clean environment and which promote equity across all our diverse communities. DTMG strongly supports SB0948 because riding in clean electric buses will result in healthier children in Maryland and reduce greenhouse gas emissions that cause climate change.

Diesel bus fumes harm our children. Twice a day, five days a week, the children of Maryland must breathe in high concentrations of diesel fumes to get to and from school. A child riding in a diesel school bus may be exposed to 15 times as many pollutants as kids not riding a diesel bus. The consequences are well understood. Diesel exhaust is carcinogenic, reduces lung function, and increases asthma and pneumonia in children. Diesel tailpipes spew out more than 40 toxic substances and black sooty particulate matter, which lodges deep in children's lungs, creating life-threatening health problems. Children are most at risk from diesel fumes because their lungs are still developing and they breathe two times more air per pound of body weight than adults do. Damage from diesel fumes can result in permanently reduced lung function and lifelong health problems.

Diesel buses also pollute our air and contribute to global warming. Diesel school buses harm the environment in a number of ways. They are a major source of greenhouse gas emissions, with each bus emitting about 24 tons of CO2 per year— 6 times more than an average car. Nitrous oxide, a major constituent of diesel exhaust, contributes to acid rain, ozone formation, and smog. Frequently, our most vulnerable populations are hit hardest by diesel and other toxic pollution. Environmental justice communities suffer higher rates of air pollution, are hospitalized more often for respiratory illnesses, and are disproportionately impacted by climate change. In some environmental justice neighborhoods, 1 in 4 children has asthma.

SB0948 addresses these serious problems by creating an Electric School Bus Pilot Program. Under the program, school districts in each utility service area will be eligible to purchase zero-emission electric buses rather than diesel busses. The program ensures there are no additional capital, administrative, or operational costs to the school system. In addition, with vehicle-to-grid electric school buses that can serve as back-up batteries and service the electric grid, school districts

could even save money that could be used for educational programs, teachers' salaries, and assistance to students.

The Electric School Bus Pilot Program is a win-win proposition that will provide health and educational benefits to our students and improve the environment for all Marylanders. Therefore, DTMG strongly supports SB0948 and urges a **FAVORABLE** report on this bill.

Respectfully submitted,

Olivia Bartlett
Co-lead, DoTheMostGood Maryland Team
oliviabartlett@verizon.net
240-751-5599

SB948_FAV_Sign-On_35 groups.pdf
Uploaded by: Ramon Palencia-Calvo
Position: FAV

March 22, 2022

Committee: Senate Finance Committee
Testimony: SB948, Public Utilities - Electric School Bus Pilot Program
Position: FAVORABLE
Hearing Date: March 22, 2022

Dear Chairwoman Kelley and Members of the Committee:

The undersigned 35 groups strongly support SB948 and urge a favorable report.

SB948 creates an Electric School Bus Pilot Program where school districts in each utility service area will be eligible to purchase zero-emission electric buses rather than diesel ones at no additional cost to the school districts. Investor-owned utilities may recover reasonable costs of the pilot program through a ratepayer adjustment. Each investor-owned utility that implements the program will provide rebates to school districts for a minimum of 25 electric buses; the rebates are capped at $50 million during the pilot program, which will run 3-5 years. The utility, in consultation with participating school districts, will provide annual reports on the environmental, health, and other costs and benefits of the program to the General Assembly, the Governor, and the Public Service Commission.

Every day over 650,000 children in Maryland ride to school on one of the State's approximately 7,200 diesel school buses. Every year, school buses in Maryland travel more that 128 million miles. Studies have shown that diesel pollutants concentrate inside a bus cabin, increasing children's exposure. A child riding inside of a diesel school bus may be exposed to as much as 15 times the level of toxic diesel exhaust as someone riding in a car.[1] Diesel emissions are filled with carcinogens, particulate matter and soot that increases lifetime risk of cancer, incidence of asthma and heart disease. These effects are even more dangerous to children, whose lungs, heart, and other organs are still developing.[2]

In Maryland, approximately one in ten children suffer from asthma, and this rate is higher among minority groups.[3] Asthma is a leading chronic illness among children in the United States, and it is also one of the leading causes of school absenteeism.[4] In Maryland, 19.2 percent of parents reported that their child missed 1-2 days of school because of asthma and 9.7 percent said their child missed over seven days due to asthma.[5] Children riding in zero-emission buses experience reduced exposure to air pollution, less pulmonary inflammation, more rapid lung growth over time and lower absenteeism compared to children riding in diesel buses, particularly those with asthma.[6]

Diesel school buses harm the environment in a number of ways. They are a major source of greenhouse gas emissions, each bus emitting about 27 tons of CO2 per year—6 times as much as an average car.[7] Nitrogen oxide, a major constituent of diesel exhaust, contributes to acid rain, the formation of ground-level ozone, which is a known respiratory irritant and trigger for asthma, and the formation of smog.

In the past, the high upfront cost of purchasing electric buses put them out of reach for many school districts. But costs have come down, and recent innovations, such as vehicle-to-grid (V2G) technology, coupled with the lower costs of operating and maintaining electric buses, have made them financially attractive for schools. One estimate puts the cost of operating electric school buses at about 19 cents per mile, compared to the 82 cents per mile cost of diesel buses.[8]

V2G technology uses bus batteries to provide electricity to the grid when it is needed to stabilize imbalances and meet peak demands. School buses are ideally suited for this function, as they are equipped with very large batteries and only operate for small parts of the day. In the summer, when electricity demand is at its highest, most school buses do not operate at all.

Electric school buses are already being deployed in Maryland. Montgomery County, Frederick County, Howard County and Prince George's County already own, or plan to own, and operate electric school buses. School bus routes are typically less than 40 miles, whereas today's electric

---

[1] https://www.ehhi.org/reports/diesel/dieselintro.pdf, https://www.sciencedirect.com/science/article/abs/pii/S0167629611000701
[2] https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health
[3] https://health.maryland.gov/phpa/OEhfp/eh/Pages/asthma.aspx#:~:text=In%20Maryland%2C%207.6%25%20of%20children,was%20119.4%20per%2010%2C000%20residents
[4] https://www.cdc.gov/healthyschools/asthma/index.htm
[5] https://health.maryland.gov/phpa/mch/Documents/Asthma%20in%20Maryland%202012.pdf
[6] https://www.atsjournals.org/doi/pdf/10.1164/rccm.201410-1924OC
[7] https://bellwethereducation.org/sites/default/files/Bellwether_WVPM-YellowToGreen_FINAL.pdf
[8] https://uspirg.org/sites/pirg/files/reports/US_EL%20buses%202021%20scrn.pdf

school buses can travel 120 miles or more on a single charge, which for some buses can be accomplished in only three hours.

SB948 provides the opportunity to expand the benefits of electric school buses to every school district in Maryland within the territory of an investor-owned utility. The program ensures there are no capital, administrative or operational costs to the school district. Rather, in addition to the substantial health benefits of the buses, each participating school district can expect to see estimated cost savings of thousands of dollars per year per bus, dollars that can go to educational programs, teachers' salaries, and assistance to needy students.

SB948 is a no-lose proposition that would provide substantial health and educational benefits to Maryland's students and improve the environment for all of Maryland's communities.

The undersigned groups urge a favorable report on SB948.

Alliance of Nurses for Healthy Environments
Katie Huffling

American Academy of Pediatrics, Maryland Chapter
Michael Ichniowski, MD
Chairperson, Environmental Health and Climate Change Committee

Audubon Naturalist Society
Denisse Guitarra, Maryland Conservation Advocate

Blue Water Baltimore
Alice Volpitta, Baltimore Harbor Waterkeeper

Chesapeake Bay Foundation
Robin Clark, Maryland Staff Attorney

Chesapeake Climate Action Network Action Fund
Victoria Venable, Maryland Director

Chesapeake Physicians for Social Responsibility
Gwen L. DuBois MD, MPH, President

Children's Environmental Health Network
Kristie Trousdale, Deputy Director

Chispa Maryland, Maryland League of Conservation Voters
Ramon Palenica-Calvo, Program Director

Climate Justice Wing of Maryland Legislative Coalition
Laurie McGilvray, Co-Chair

Climate Law & Policy Project
Donald M. Goldberg, Executive Director

Climate XChange Maryland
Wandra Ashley-Williams, Regional Director

Elders Climate Action Maryland
Frances Stewart, Chapter Co-Leader

Environmental Defense Fund
Larissa Koehler, Senior Attorney

Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
Nanci Wilkinson, Co-Leader

Greenbelt Climate Action Network
Lore Rosenthal, Program Coordinator

Howard County Climate Action

Liz Feighner, Steering Committee

Indivisible Howard County
Richard Deutschmann/Facilitator Climate Action Team

Labor Network for Sustainability (LNS)
Elizabeth Bunn, Maryland State Director

Maryland Campaign for Environmental Human Rights
Nina Beth Cardin, Director

Maryland Catholics for Our Common Home
Robert M. Simon, Member, Organizing Committee

Maryland League of Conservation Voters
Kim Coble, Executive Director
Maryland Legislative Coalition
Cecilia Plante, Co-Chair

Maryland Public Health Association
Erica Weiss, Co-Chair, Advocacy Committee

Maryland Sierra Club
Lindsey Mendelson, Transportation Representative

NAACP Maryland State Conference
Staci Hartwell, Chair, Environmental and Climate Justice

Northeast Catholic Community Peace/Justice Committee
Nancy Conrad, Chairperson

Oncologists United for Climate and Health
Christine D. Berg, M.D., Bethesda, Maryland

St Anthony of Padua, St Dominic & Most Precious Blood Church (Baltimore)
Rev. Ty Hullinger, Pastor

Takoma Park Mobilization Environment Committee
Diana Younts, Co-Chair

Transit Choices
Robin Budish, Director

Union of Concerned Scientists
Kevin Shen, Northeast Policy Analyst

Unitarian Universalist Environmental Justice Ministry
Lee McNair, Co-Leader

Unitarian Universalist Legislative Ministry of Maryland
Phil Webster, Lead Advocate for Climate Change

WISE
Monica O'Connor, Legislative Liaison

SB948_IndivisibleHoCoMD_FAV_PeterAlexander.pdf
Uploaded by: Richard Deutschmann
Position: FAV

SB948 Public Utilities - Electric School Bus Pilot Program
Testimony before
Senate Finance Committee
March 22, 2022
Position: Favorable

Madame Chair, Mr. Vice Chair, and members of the Committee, my name is Peter Alexander and I represent the 750+ members of Indivisible Howard County. I am writing in support of SB948, The Electric School Bus Pilot Program, which was submitted during the 2021 session as HB832 which passed but no further action was taken after it's hearing in Senate Finance. It's crossfile HB696 has passed Third Reader in the House.

SB948 would establish through the Public Service Commission (PSC) a three-to-five-year program allowing certain investor-owned electric companies to offer electric buses and charging infrastructure to interested school districts. Other provisions (1) require training in the operation of the buses, charging equipment, and related infrastructure, (2) encouraging applicants to seek federal funding through the Infrastructure and Investment Jobs Act, and (3) encouraging applicants to produce or procure electricity for the program from renewable sources. This program will complement several other electric vehicle programs currently being considered by the Maryland General Assembly. We are grateful for the leadership of Senator Kramer for sponsoring this bill.

Transportation is Maryland's number one generator of greenhouse gas emissions which are causing global climate change, and tailpipe emissions which contribute to ozone and particulate (PM2.5) pollution result in failure to meet federal clean air standards for more than 80% of Maryland residents.

Compared to conventional diesel buses, each zero-emission bus can eliminate almost 1,700 tons of carbon dioxide, ten tons of nitrogen oxides, and 350 pounds of diesel particulate matter over a 12-year period.

Fossil fuel-powered and hybrid electric buses, are significant sources of pollutants other than greenhouse gases. Diesel exhaust contains more than 40 toxic air contaminants that in some cases can lead to decreased lung function and can cause and/or worsen diseases such as asthma and cancer. The concentration of these contaminants inside and surrounding school buses can be higher because of the diesel fuel they use, ***meaning that school children and bus drivers are almost constantly exposed to these air-borne toxins while waiting for, waiting in, and riding/driving diesel school buses.***

Electric buses are more cost-efficient in the long term than diesel buses because of their lower operational and maintenance costs. Electricity that must be generated to charge electric bus batteries increasingly is coming from renewable wind and solar power sources, and the percent of clean, renewable energy generated will continue to increase over time.

We respectfully urge a favorable committee report.

Peter Alexander, PhD
Woodbine, MD

BGE - SB 948 Public Utilities - Electric School Bu

Uploaded by: Charles Washington

Position: FWA

bge
AN EXELON COMPANY

Position Statement

SUPPORT
Senate Finance
3/22/2022

Senate Bill 948 - Public Utilities - Electric School Bus Pilot Program

Baltimore Gas and Electric Company (BGE) strongly supports *Senate Bill 948 – Public Utilities - Electric School Bus Pilot Program*. Senate Bill 948 would establish an electric school bus pilot program, administered by the Maryland Public Service Commission (Commission), which would jumpstart the use of electric school buses by providing incentives to offset costs borne by school systems to deploy electric school buses and would also allow the energy stored in school bus batteries to be deployed to meet regional electricity demands when the buses are not in use for transportation needs.

Electric vehicle deployment contributes to many of the state's environmental and transportation goals and deployment on school buses is among the most obvious platforms to advance the technology as these buses are usually located in centralized fleet locations where charging infrastructure can be effectively installed. Secondly, school buses have very defined routes with predictable usage and return to the central location on an established schedule, easing the ability to recharge the onboard batteries. Lastly, school buses are idle much of the time and the energy stored in their batteries can be deployed during times of electricity shortages or other emergencies. This is particularly true during extreme weather events in any season, when the buses likely will not be in use to transport students.

The program to be established by Senate Bill 948 will enable Investor-Owned electric companies to apply to the Commission to implement an electric school bus program which would provide rebates to participating school systems and also would allow the utility to use the energy stored in the school bus batteries when the buses are not in use during potential power outages and certain emergencies.

The Electric School Bus Pilot program will advance the use of electric vehicles, provide a benefit to participating school systems, and provide for additional electricity to be available to mitigate potential power outages.

Attached are amendments that clarify certain provisions of the bill to provide regulatory certain during the application process. With these amendments, BGE supports Senate Bill 948 and requests a favorable committee report.

Sandy Grace | Charles Washington | Allyson Black | 410.269.5281

Requested Amendments

On page 3, in line 4, after "**THE**" insert "**DEMONSTRABLE**".

On page 4, strike beginning with "**AND**" in line 14, down through "**FACILITIES**" in line 16; in line 17, strike "**EQUIP**" and substitute "**ENSURE**"; and in the same line, after "**BUS**" insert "**IS EQUIPPED**"; in line 20, strike "**PROVIDE**" and substitute "**ENSURE**"; and in the same line, after "**BOARD**" insert "**IS PROVIDED**"; and in line 33, strike "**RATE APPLICATION**" and substitute "**MECHANISM**".

On page 5, strike in their entirety lines 1 through 6, inclusive.

SB0948_Amendment_583129-01
Uploaded by: Senator Kramer
Position: FWA

SB0948/583129/1

AMENDMENTS PREPARED BY THE DEPT. OF LEGISLATIVE SERVICES

17 MAR 22
18:02:44

BY: Senator Kramer
(To be offered in the Finance Committee)

AMENDMENT TO SENATE BILL 948
(First Reading File Bill)

On page 3, in line 4, after "**THE**" insert "**DEMONSTRABLE**".

On page 4, strike beginning with "**AND**" in line 14 down through "**FACILITIES**" in line 16; in line 17, strike "**EQUIP**" and substitute "**ENSURE**"; in the same line, after "**BUS**" insert "**IS EQUIPPED**"; in line 20, strike "**PROVIDE**" and substitute "**ENSURE**"; in the same line, after "**BOARD**" insert "**IS PROVIDED**"; in line 30, strike "**(1)**"; and in line 33, strike "**RATE APPLICATION TO BE**" and substitute "**MECHANISM THAT IS**".

On page 5, strike in their entirety lines 1 through 6, inclusive.

SB0948 LOI.pdf
Uploaded by: Tyler Abbott
Position: INFO

Maryland
Department of
the Environment

Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor

Ben Grumbles, Secretary
Horacio Tablada, Deputy Secretary

March 22, 2022

The Honorable Delores G. Kelley, Chair
Finance Committee
Miller Senate Office Building, 3 East
Annapolis, Maryland 21401

Re: Senate Bill 948- Public Utilities-Electric School Bus Pilot Program

Dear Chair Kelley and Members of the Committee:

The Maryland Department of the Environment (MDE or the Department) has reviewed SB 948- *Public Utilities-Electric School Bus Pilot Program* and would like to provide some information related to this bill.

Maryland has been a key supporter of reducing school bus emissions. In 2009, MDE began an aggressive school bus retrofit program with the purpose of retrofitting existing Maryland school buses with new advanced emission technology. Under this program, MDE retrofitted over 200 buses with new advanced emission control technology and reduced emissions by over 60%. While these retrofits were the best option for reducing emissions from school buses at the time, technologies have progressed along with the school bus program. To reflect these advances, 2 years ago MDE announced a school bus electrification pilot program, which is funded with settlement funds received from Volkswagen and Fiat-Chrysler. Under this program, MDE is using these settlement funds to implement multiple electric school bus programs throughout the state, cover the incremental cost to purchase an electric school bus, and cover the cost to install the required charging infrastructure. Currently, MDE has pilot programs underway with four Maryland counties and is working to develop several more. These types of pilot programs allow counties and schools to gain important experience, so when implemented on a large scale, they can make the right purchase decisions and take into account costs, charging infrastructure, and maintenance experience for the long term success of conversion to an electric school bus fleet. Based on our early experience with these pilot projects, MDE is seeing an incremental cost of approximately $250,000 for an electric school bus compared to a diesel-powered school bus, with an approximate cost of $70,000 to purchase and install the required charging infrastructure to support each bus.

In addition to the school bus electrification pilot program, on July 14, 2020, Maryland signed onto the Medium Heavy Duty zero emission vehicle memorandum of understanding (MHD ZEV MOU). Maryland was one of 15 states and Washington, D.C. to sign on to the MOU. The goal of the MOU is to work with both private and public stakeholders to identify and address the issues that impact the wide spread electrification of the MHD sector. In addition to this work, the MOU establishes a goal of achieving a 30% sales share of MHD ZEV by 2030, and 100% MHD ZEV sales by 2050. As part of this process, Maryland is working with stakeholders to develop a regional Action Plan that will outline how Maryland and the region will achieve the goals of the MOU. The draft regional Action Plan was released on March 10, 2022, and will be finalized in June 2022. Maryland's ability to expand the use of ZEVs in the MHD sector will play an important role in helping Maryland achieve its ambitious and achievable climate change and air quality goals. The current Greenhouse

Gas Reduction Act (GGRA) was signed into law by Governor Hogan in 2016, and has a goal of a 40% reduction in emissions from 2006 levels by 2030.

Thank you for your consideration. We will continue to monitor SB 948 during the committee's deliberations, and I am available to answer any questions you may have. Please feel free to contact me at 410-260-6301 or tyler.abbott@maryland.gov.

Sincerely,

Tyler Abbott

cc: The Honorable Benjamin F. Kramer
George "Tad" Aburn, Director, Air and Radiation Administration