

Summary of the E-School Bus Program: National Conference on Sustainable Development

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I attended the National Conference on Sustainable Development (NCS D) webinar program on electric buses (e-buses) that was held as a 3-hour virtual event on May 27. The Conference was hosted by LiveGreenct.org. The program was recorded and should be available for viewing. This document summarizes the webinar.

The Conference was opened by one of the world's leading environmental scholars and co-founder of 350.org, Bill McKibben, who explained the importance of the momentum in transitioning to e-buses as part of the solution to the climate crisis. McKibben highlighted lessons we have learned from the Covid19 pandemic and described three corollaries between the pandemic and carbon reduction actions. First, humans must fully grasp that "physical reality is real;" physics and chemistry do not negotiate. No matter how inconvenient behavior modifications may be, the spread of the Covid19 virus and its harm to human health cannot be denied, which correlates with the principle of the reality that words and good intentions cannot overcome the impacts of carbon emissions. The bright line rules of physics and chemistry provide that the continued release of carbon into the atmosphere will warm the planet to perilous levels. Second, the speed in responding to a physical crisis is crucial. Just like the pace at which we responded to implementing social distancing and use of personal protective equipment, either hastened or halted the spread of the Covid19 virus, so too it is with reducing carbon emissions to halt global warming. McKibben observed that the last 30 years of carbon emissions that have accumulated in the atmosphere are akin to the recent February when we began to grasp the harm Covid19 posed to public health. McKibben says we are now in the February of climate disruption. We must act with the urgency that we have learned is needed based on our understanding of the physics and chemistry that govern the physical world. Third, social solidarity is important, we need to work cooperatively to avoid collective harm. The Covid19 virus has also reminded us that our lungs are a vital organ needed for our survival. Damaging the lungs of those who ride in fossil fuel buses, and those who breathe the air in their vicinity leaves such people vulnerable to respiratory virus and disease. McKibben closed his remarks by stressing that the rapid transition to e-buses is important to prepare children for the future, to prepare them as leaders, and that we take control of our future by not being stuck in the past by sheer inertia.

Next, the conference had a panel that explained an Electric School Bus Tool Kit. The toolkit is essentially a 6-week workshop for e-bus stakeholders to learn about the variables in decision making toward the purchase of electric school bus. The toolkit also serves as a library of resources. The topics include e-bus vendors and bus specifications, funding sources—including how to leverage utility contributions—and overcoming resistance born of fear of change, fear of risk, and managing upfront costs. Several panel members described the very positive community response that flowed from a public show and tell of an electric school bus that was featured in an event hosted by Lion bus company. The take-away from this panel was that, "where there's a will, there's a way".

The second panel addressed legislative solutions to funding the higher upfront purchase price of an e-bus. This panel featured Virginia State Delegate Kaye Kory, who served on a Board of Education before being elected to the Virginia legislature. She explained that Virginia is preparing for a big ribbon cutting ceremony in December where they will be inaugurating 50 electric school buses that are funded in large part through a legislative initiative that brought a commitment from [Dominion Energy](#) to cover the incremental costs above the usual purchase price of a fossil fuel bus. Delegate Kory emphasized that e-buses “need champions to get the ball rolling.” She also stressed that the first purchase is important because it moves the process from hypothetical to a reality. New Jersey State Senator Patrick J. Diegnan, Jr. also spoke on this panel. He explained that in New Jersey, there is strong support for e-buses, but the implementation and financing are the sources of friction in the process. New Jersey is looking to legislative levers to adjust utility rates to help fund e-bus projects.

The third, and final, panel consisted of e-school bus managers, including Sergio Alfonso, who is the Transportation Supervisor in the White Plains School District where they have 5 Lion e-buses. Tim Shannon was also on this panel; he manages the Sacramento fleet, which is the largest e-school bus fleet in the country. Sacramento has 30 e-buses now, with 27 more on the way. The panel included Dave Meeuwssen, Transportation Director Zeeland Public Schools, Michigan (where they are tapping into \$4 million from the VW Settlement fund for 20 e-buses), and Jennifer Wallace-Brodeur, Director Transportation Efficiency at Vermont Energy Investment Corp. (who managed the integration of e-buses in Massachusetts). Collectively, they were overwhelmingly positive in their experiences. Their comments about e-buses included:

- Considering the health and well-being of students, going with electric school buses was “a no-brainer.”
- Our e-buses brought immediate cleaner air for our kids and community.
- Our community, kids, and staff love them.
- The energy and fuel savings were very positive.
- Using a managed charge program (e.g., programming the charging schedule to charge when electricity is inexpensive) optimizes savings.
- Lion buses “are great.”
- Lion buses are the “Cadillac of e-buses.”
- Sending RFPs got the “vendors to sharpen their pencils” - bringing concessions in bidding.
- E-bus transition has been “very successful so far.”
- School Board Members remarked that e-buses are “quite something.”
- E-buses have brought “nothing but great PR.”
- It’s been awesome, paying about 8¢ per kWhr, or about 15¢ per mile to run, compared to 40¢ per mile to run a diesel bus.
- Drivers love them.
- Storing buses outside in the Northeast did not lower range, although cold weather has resulted in lower driving range.

- Sacramento had 5%-10% reduced range on very hot days due to air conditioning use, they charge their buses mid-day during peak solar production.
- Buses perform “very well” on hills.
- Benefits to hill driving is “hyper-miling” because batteries charge on the downhills due to regenerative breaking.
- E-buses bring “enormous benefits, especially to kids who are riding them everyday.”
- Responses from drivers, community and administrators- “all positive.”

The conference closed with an encouraging message from Matthew Goetz, Senior Associate & Program Manager, Georgetown Climate Center. This Center seeks to advance effective climate and energy policies in the United States and serves as a resource to state and local communities that are working to cut carbon pollution and prepare for climate change. Goetz inspired conference attendees to continue the groundwork to help transition to zero emission school buses.