Written Testimony Before the U.S. House of Representatives, Select Committee on the Climate Crisis

"Solving the Climate Crisis: Cleaning Up Heavy Duty Vehicles, Protecting Communities"

July 16, 2019

Chairwoman Castor, Ranking Member Graves, and Members of the Select Committee, on behalf of Proterra, thank you for the opportunity to testify at today's hearing focused on "Solving the Climate Crisis: Cleaning Up Heavy Duty Vehicles, Protecting Communities."

I am Ryan Popple, CEO of Proterra, a leader in the design and manufacture of zero-emission, heavy-duty electric transit buses and technology solutions to power other heavy-duty, electric applications such as school buses and coach buses. Our vision, one that I am passionate about, is to provide clean, quiet transportation for all. Today, Proterra has received more than 700 awards of buses from communities in 36 states, District of Columbia, and 2 Canadian provinces, and we have delivered more than 300 Proterra electric buses. Our buses are deployed in traditional red states and blue states, urban areas and suburbs, big cities and small communities, and even rural areas. Proterra products are proudly designed, engineered and manufactured in the United States and we currently employ more than 500 employees in our three offices in Silicon Valley, Greenville, South Carolina and Los Angeles.

I am honored to appear before you today to discuss the urgency of reducing greenhouse gas emissions caused by heavy-duty transportation. In order to properly address the world's climate crisis and improve public health it is critical that we prioritize electrifying heavy-duty vehicles in the United States and make zero-emission, battery-electric technology available to all U.S. communities. We have begun to achieve these goals today with American-made, zero-emission heavy-duty public transit buses and can make significant strides by expanding electric powertrains into adjacent sectors, such as school buses and over-the-road motor coaches.

Transportation is widely considered the number one contributor to U.S. carbon emissions. According to the EPA[1], greenhouse gas emissions from transportation account for approximately 29 percent of total U.S. greenhouse gas emissions, making it the largest contributor of U.S. GHG emissions. According to the same report, between 1990 and 2017, GHG emissions in the transportation sector increased, in absolute terms, more than any other sector. It is critical that we begin to reduce this dangerous level of transportation pollution.

Communities across the United States struggle to address the harmful effects of air pollution. Exposure to particulate matter is linked to a range of severe health issues, including premature death for those suffering from heart or lung disease, heart attacks, irregular heartbeat, aggravated asthma, decreased lung function and increased respiratory symptoms (EPA[2]). According to the American Lung Association, more than four in 10 people in the United States live in counties that have unhealthy levels of ozone or

[1] "Sources of Greenhouse Gas Emissions." United States Environmental Protection Agency, last updated on 29 April 2019, www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#transportation

[2] "Health and Environmental Effects of Particulate Matter (PM)." United States Environmental Protection Agency, last updated 20 June 2018, www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm

particle pollution, which is around 141.1 million Americans[3]. Children and teenagers are among the most vulnerable populations.

We know that there are areas that bear a disproportionate share of the air pollution burden. Some communities are often exposed to higher levels of air pollution because they are located near freight centers and heavily traveled roadways and residents often lack the resources to relocate. According to a recent Union of Concerned Scientists report that analyzed air pollution from vehicles in California, on average, African American, Latino, and Asian Californians are exposed to more particulate matter pollution from cars, trucks and buses than white Californians. Further, the lowest-income households in the state live where particulate matter pollution is 10 percent higher than the state average, while those with the highest incomes live where particulate matter pollution is 13 percent below the state average. Not surprisingly, households earning less than $20,000 a year and people who don't own cars suffer vehicle pollution levels about 20 percent higher than the state average.[4]

Beyond air pollution, Americans are also suffering from noise pollution. Constant traffic noise can lead to greater stress, anxiety, high blood pressure, heart disease, depression and compromised sleep quantity and quality.[5]

Electric transit buses serving our communities, airports and universities are making a significant difference in addressing all of these issues. Every time a Proterra electric bus with zero tailpipe emissions replaces a diesel bus, greenhouse gas emissions are reduced by approximately 230,000 pounds and noise pollution is lessened. To date, Proterra vehicles in revenue service have displaced more than 49 million pounds of greenhouse gas emissions. Additionally, transit customers save money on fuel and maintenance.

Vehicle powertrain technology is undergoing a transformational shift away from the internal combustion engines of the past to battery-electric technology. In just a few short years we have seen the growth of electric transit buses globally. In 2017, around 13 percent of the total global municipal bus fleet was electric[6]. The United States is poised to be a global leader in this emerging market, bringing the next wave of transit innovation directly to communities across the U.S. But this movement is not just about protecting the environment. It is about creating good-paying jobs and boosting the clean energy economy. Electric vehicle technology is creating the manufacturing and engineering jobs of today and tomorrow, such as electricians, advanced manufacturing factory workers, EV service and maintenance workers, and battery technicians. Further innovation by EV companies positively impacts adjacent industries. For example, Proterra partners with TPI Composites to manufacture our pioneering composite body for Proterra transit buses. TPI recently opened a factory in Newton, IA and added

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[3] "State of the Air® 2019." American Lung Association, 2019, https://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2019-full.pdf

[4] "Inequitable Exposure to Air Pollution from Vehicles in California." Union of concerned Scientists, February 2019, https://www.ucsusa.org/clean-vehicles/electric-vehicles/CA-air-quality-equity

[5] "Environmental Noise Pollution in the United States: Developing an Effective Public Health Response." Monica S. Hammer, Tracy K. Swinburn, and Richard L. Neitzel, 2014. Environmental Health Perspectives 122:2 CID: https://doi.org/10.1289/ehp.1307272

[6] "Electric Buses in Cities: Driving Towards Cleaner Air and Lower CO2." Bloomberg New Energy Finance, 29 March 2018.

headcount to support the growing demand of electric buses. Additionally, by investing in battery-electric technology, America will lessen its dependence on foreign oil and leverage its innovative spirit to develop clean, green technology that outperforms traditional diesel vehicles.

As you can tell, I am an EV and public transit enthusiast. It is why I took this job more than 4 years ago. It is critical that we reduce harmful emissions that are intensifying the world's climate crisis. We have a viable, market-driven solution that can help drive change right now and, when deployed at scale, will positively impact our environment and our public health.

But we could use additional help.

In my opinion, the single biggest accelerant in this space has been the Federal Transit Administration's Low or No Emission Vehicle Program (LowNo), which has been responsible for funding hundreds of electric transit buses. But the funding has been limited. LowNo was funded at $55M per year in the last surface transportation reauthorization bill, the Fixing America's Surface Transportation (FAST) Act. We are grateful that the House and Senate Appropriations Committees have provided supplemental funding for this program over the last two fiscal years. If we are serious about delivering cleaner mobility solutions to all communities, we should significantly increase appropriations for this program in particular and make this a national priority. Let's ensure that there is increased funding to enable all Americans to ride in an emission-free and quiet electric vehicle.

In addition to the above, we respectfully request that this Committee consider other actions to help all communities transition to a cleaner mobility future:

I. **Surface Transportation Bill Reauthorization.** The Fixing America's Surface Transportation (FAST) Act expires at the end of Fiscal Year 2020. We urge Congress to reauthorize the surface transportation bill and, specifically, reauthorize the LowNo Program at higher amounts due to increasing demand, thus ensuring that the grant awards are sufficient for meaningful EV deployments and distributed in diverse regions throughout the country. This might be the perfect vehicle to fold in the Green Bus Act, which would require all new buses purchased with FTA funds be zero-emission beginning on October 1, 2029 and give preference under the LowNo Program to transit agencies that have completed full fleet transition plans to zero emission vehicles. Thank you for your leadership on this initiative Congresswoman Brownley.

II. **Comprehensive Infrastructure Bill.** We're pleased that both the Administration and Congress have indicated that infrastructure is a priority. We call on Congress to put forth a comprehensive infrastructure bill that includes funding for heavy-duty electric vehicle fleets and the accompanying EV infrastructure.

III. **Incentivize Transit Agencies to Transition to Zero-Emission Buses**. Under current funding levels, the federal government will pay up to 85% of the cost of a new bus, which include buses that run on fossil fuels. We suggest that Congress keep the existing federal share for zero-emission transit buses, but reduce it for diesel (40%), CNG (50%) or diesel-hybrid buses (60%).

IV. **Grant Programs For Other Heavy-Duty Vehicles.** Senator Kamala Harris and colleagues recently introduced the Clean School Bus Act to accelerate electrification of school bus fleets. The bill authorizes grants of up to $2 million to replace diesel school buses with electric school buses, invest in charging infrastructure and support workforce development. The bill would also give priority to applications that serve lower-income students, replacing

the most polluting buses. We support it and urge Congress to pass it and appropriate funding.

V. **Expansion of the ATVM Loan Program.** The Advanced Technology Vehicles Manufacturing Loan Program is administered by the Department of Energy. One of its goals is to improve the use of advanced technologies in cars and components manufactured in the United States. But manufacturers of heavy-duty vehicles – such as electric public transit buses – are ineligible to apply for the low-interest loans. My understanding is that there is approximately $16B remaining in this Program, having successfully helped companies such as Tesla, Nissan and Ford. Congress should amend this Program to allow companies like Proterra to be able to apply for loans that will help them invest in R&D and product development.

Thank you for the opportunity to testify before you today. I look forward to answering any questions that you may have.