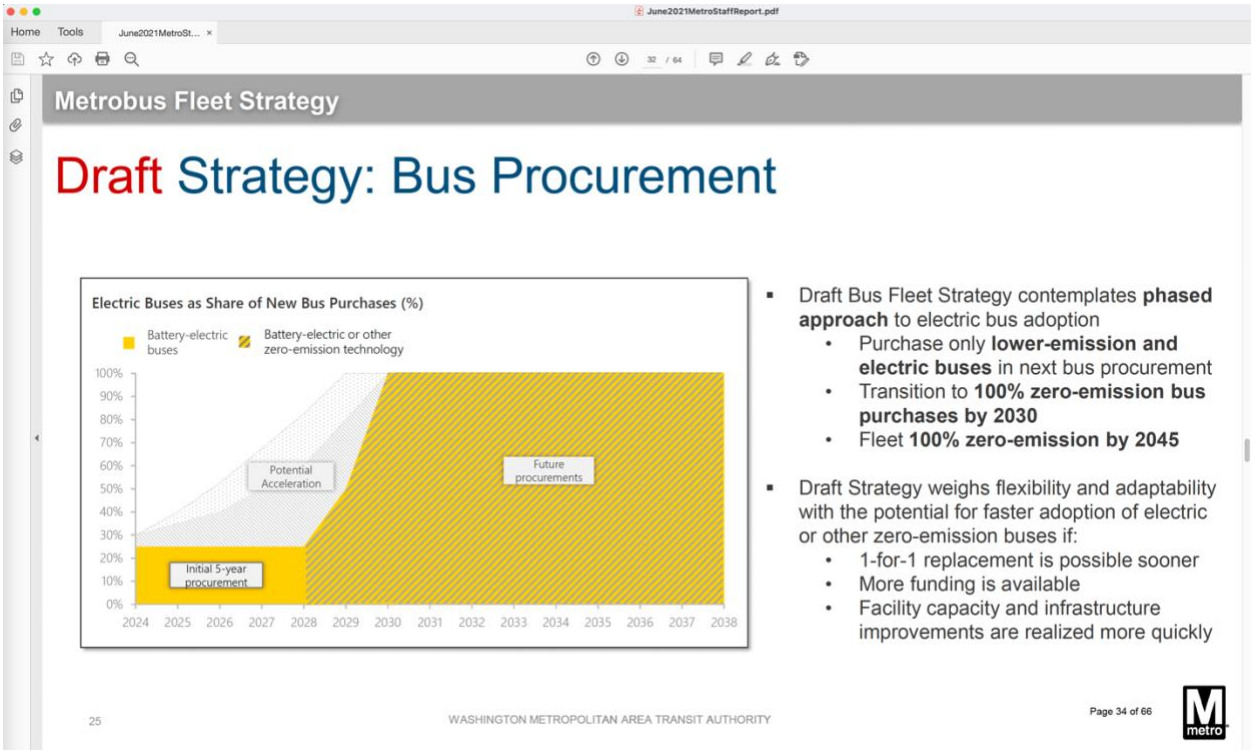
Memo to: Metro Board of Directors
From: Metro Electric Bus Coalition
Re: Revising 2021 Metrobus Fleet Plan
Date: April 13, 2022

On June 24, 2021, Metro Executive Vice President for Capital Planning Tom Webster presented the Metro Board the Metro staff's proposed Metrobus Fleet Plan for transitioning to zero-emission buses, which the Metro Board Executive Committee had already approved on June 10. The entire board approved the plan, which set 2045 as the target date to decarbonize Metro's 1,590-bus fleet—the sixth largest bus system in the country—years after comparable and larger metropolitan bus fleets plan to be fully electric.

An analysis of the plan by the Metro Electric Bus Coalition (member organizations listed below) found significant inaccuracies and outdated data, indicating that the staff did not provide the Metro Board the information it needed to make an informed decision about the future of the Metrobus fleet. We are calling on the current board to reconsider the plan in light of the facts presented below and accelerate Metrobus's transition to an all-electric fleet.

Metro's Procurement Plan Lags Behind Peer Transit Agencies (Slide 25)



The plan the Metro Board approved calls for purchasing a combination of fossil fuel buses (conventional diesel and compressed natural gas (CNG)) and electric buses in the next five-year procurement cycle running from 2024 through 2028. During that five-year period, only 25 of the 100 buses Metro plans to buy annually will be electric, so by 2028, only 138 (125 plus 12 pilot project buses plus the one it now owns) of Metro's 1,590 buses—9 percent—will be electric. The

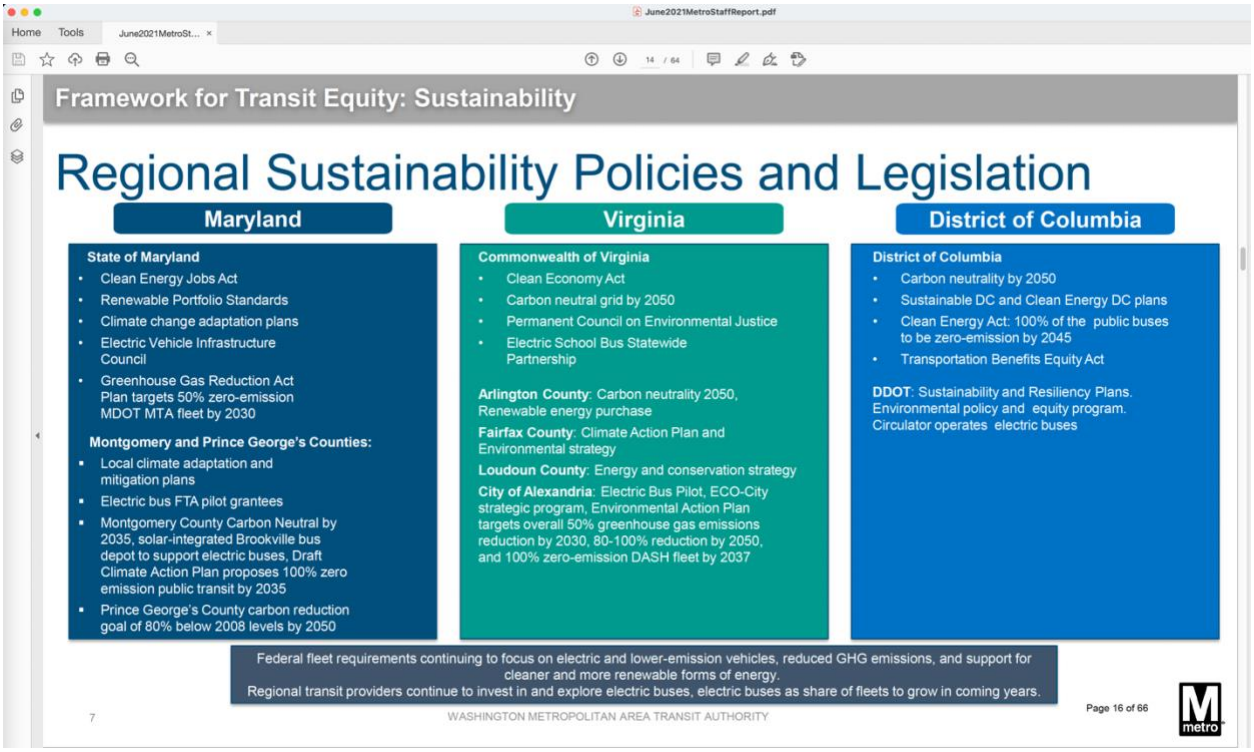
rest will be all CNG. (Metro refers to them as "lower-emission," but they are no different than the types of buses it has been buying for some time.)

In 2029, Metro plans to buy 50 electric buses and in 2030, it plans to buy 100 electric buses. So by 2030, it will have no more than 288 electric buses in its fleet—18 percent. That is when Metro plans to begin buying only electric buses. If Metro waits until 2030 to purchase only electric buses, it will not reach a 50-percent, electric fleet until 2035.

Metro's target date for a 100-percent, electric bus fleet is 2045. By contrast, both the Los Angeles County Metropolitan Transportation Authority, which has 2,320 buses, and Houston Metro, which owns more than 1,230 buses, plan to have an all-electric fleet by 2030. Their timetable coincides with the Biden administration American Jobs Plan goal to electrify 50,000 transit buses by then, which would cover approximately 80 percent of the public transit buses in the United States. Other major transit agencies also have adopted a more ambitious timetable than Metro for electrifying their fleets. King County (Seattle) Metro (1,600 buses) has targeted 2035, while the Chicago Transit Authority (1,864 buses) and New York City Metropolitan Transportation Authority (5,920 buses) fleets are scheduled to be all-electric by 2040.

The Metro staff included a slide in its presentation (Slide 38) of the current fleet composition of "peer agencies," including those in Chicago, King County, Los Angeles, Maryland and New York City. Four of the fleet size numbers displayed for those five transit agencies are incorrect. More important, the staff failed to mention that these five agencies are moving much more quickly than Metro to decarbonize their fleets.

Metro Staff Failed to Provide Complete Picture of Regional Sustainability Efforts (Slide 7)



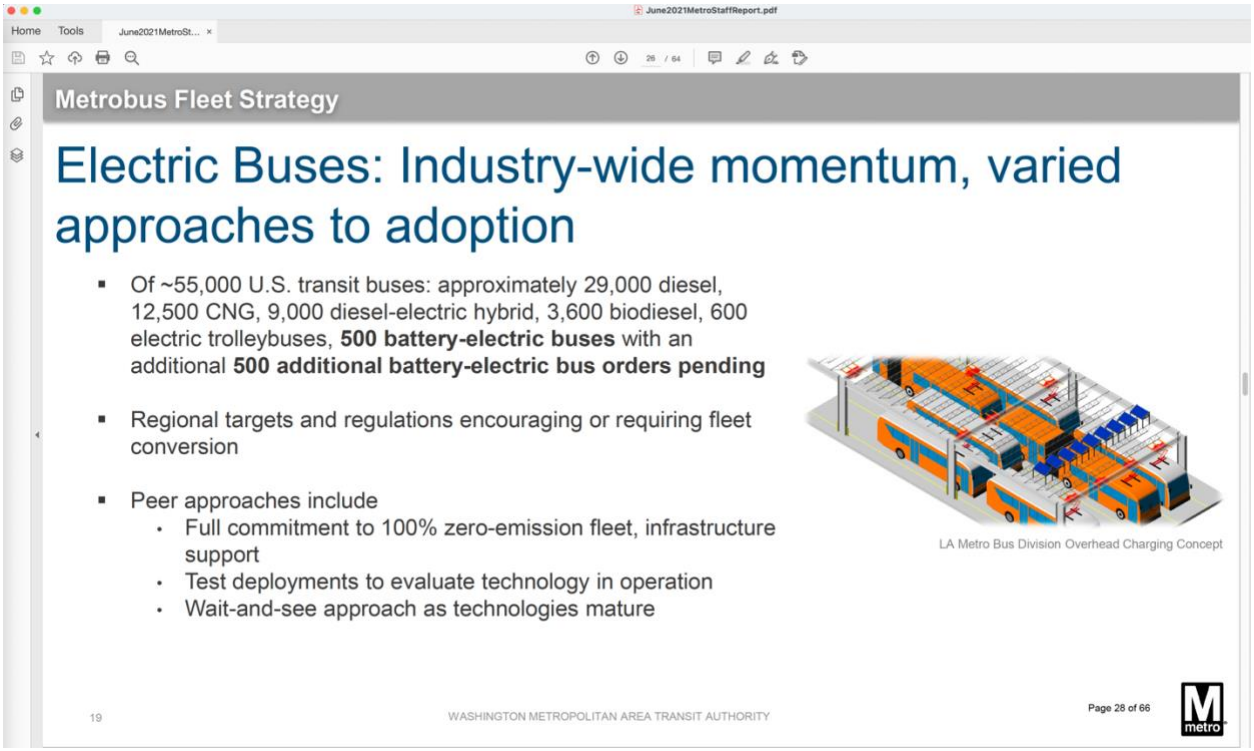
By leaving out specific details and other examples of what regional bus authorities are doing to reduce toxic pollution and address the climate crisis, the Metro staff failed to communicate just how far Metro is lagging behind smaller transit agencies in our region.

Maryland: Beginning in 2023, the Maryland Transit Administration will buy only electric buses and plans to convert half of its 760-bus fleet to electric by 2030. (Conversely, Metro plans to continue to buy fossil fuel buses until 2030 and, if it sticks to its schedule, will not electrify half of its fleet before 2035.) Montgomery County, meanwhile, plans to electrify its 1,300 school buses and 218 Ride On buses by 2035.

Northern Virginia: Alexandria's DASH bus system plans to be completely electric by 2035, not 2037. DASH will only buy electric buses after 2025. Fairfax County will stop buying diesel buses after 2024 and its entire vehicle fleet will be electric by 2035.

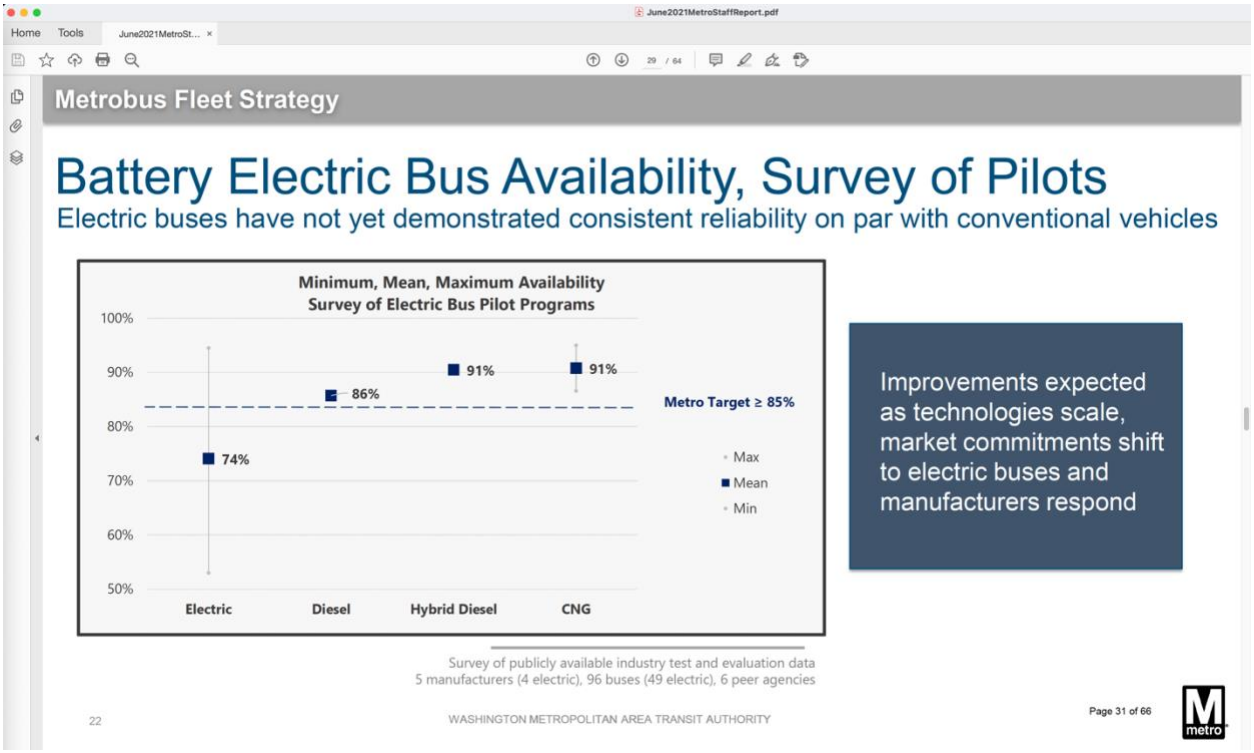
The District: More than 50 percent of the D.C. Circulator bus fleet will be electric by this summer. Its entire fleet will be electric by 2029.

Metro Staff Cited Outdated Data on the Number of Electric Buses Nationwide (Slide 19)



Slide 19 states that there are 500 electric buses in service today with an additional 500 on order. According to Calstart, at the end of 2020, there were 2,703 battery-electric buses on U.S. roads or on order. At the end of 2021, Calstart reported there were 3,364 battery electric buses on the road or on order. Lowballing the number of electric buses in service and on order falsely implies that transit agencies are showing little interest in them.

Metro Staff Understated Electric Bus Reliability (Slide 22)



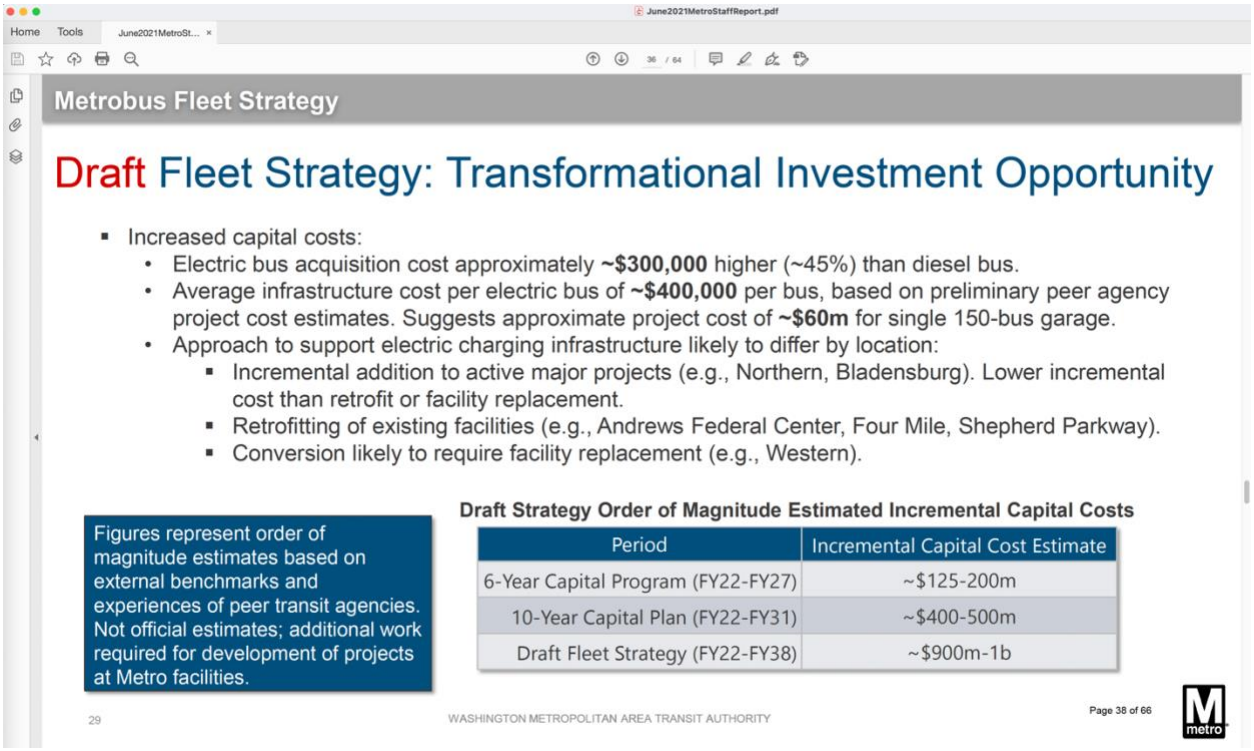
It is difficult to evaluate the data the Metro staff presented in Slide 22 because it came from pilot projects, when transit agencies were dealing with unfamiliar, new technology. To compare pilot project data to data from fossil fuel technologies that have been in service for decades is an apples to oranges comparison. There is also no indication of how old the data is, and electric bus technology has been improving rapidly.

A recent study, published by the Department of Energy's National Renewable Energy Laboratory (NREL) in June 2021, reviewed the performance of 2014 and 2016 model year electric buses owned by Foothill Transit in Southern California. Foothill Transit bought its first electric buses in 2010, making it the first public transit agency to offer electric bus service. NREL found that, on average, Foothill's 2014 35-foot electric buses were available 80.6 percent of the time and its 2016 40-foot electric buses were available 76.1 percent of the time. Both averages exceeded what the Metro staff reported. The per-bus availability for Foothill's electric buses ranged from 67 percent to 88 percent, the high end putting them on par with what the Metro staff found for the conventional diesel bus average. It is important to keep in mind that although the NREL study came out last June, the buses that provided the data were built in 2014 and 2016. A new electric bus is better than one from six or eight years ago.

In any case, it turned out that general maintenance problems, not bus electrical systems, were the main culprit undermining the Foothill electric buses' reliability. "Most of the issues causing downtime," NREL found, "were general bus issues not related to the propulsion system." Slide 22 does not distinguish among the issues that can affect reliability.

Metro Staff Grossly Overstated the Cost of Electric Bus Infrastructure (Slide 29)

The Metro staff contended that it will cost about $400,000 *per bus* for charging infrastructure. A fast charger, which costs about $495,000 according to the National Renewable Energy Laboratory, can serve a number of buses over the course of a day, not just one. Meanwhile, a depot charger, typically used for overnight charging, costs $50,000, according to NREL. While transit agencies can use a depot charger for one bus, platooning techniques would enable them to charge more than one.



Metro Staff Overstated CNG Benefits to Justify Expanding CNG Bus Fleet (Slides 36 & 46)

Metro is planning to spend untold millions to construct new CNG fueling infrastructure at its Shepherd Parkway garage and reconstruct and expand existing CNG fueling infrastructure at the Bladensburg garage to enable it to increase the percentage of CNG buses in its fleet, despite the fact that CNG buses do not provide more environmental or public health benefits than conventional diesel buses. Like other major transit agencies, Metro should dedicate that money to electrifying its fleet and steadily retire its CNG, diesel and diesel-electric hybrid buses.

Metro currently has two CNG fueling facilities, one at the Bladensburg garage in the District and another at the Four Mile Run garage in Arlington. Shepherd Parkway would be its third CNG fueling facility. Metro has not publicly revealed the latest projected cost of the new CNG fueling infrastructure at Shepherd Parkway or the reconstructed CNG fueling infrastructure at Bladensburg. Metro's FY 2021 budget stated that the Shepherd Parkway CNG fueling facility would cost $5.3 million, but the following budget—for FY 2022—did not list the facility

separately. We estimate that the cost of the reconstructed CNG fueling infrastructure at Bladensburg, part of a garage-wide rehabilitation project, will cost more than $5.3 million, because it will have more capacity than the planned Shepherd Parkway CNG fueling depot. Metro expects the entire Bladensburg renovation, which is scheduled run from FY 2022 through FY 2027, to cost $311.6 million.

In early February, we asked Metro about the status of the CNG project at Shepherd Parkway. On February 10, Metro Board Program Manager José Reyes replied in an email: "Metro has combined the Shepherd Parkway CNG facility with the larger Bladensburg Bus Garage Replacement project to support efficient contract packaging and project delivery. The Shepherd Parkway CNG design work is scheduled to begin March 2022 and construction is expected to be completed in September 2023. The CNG facility at Shepherd Parkway will serve as a substitute for Bladensburg facilities as they are taken offline for the replacement project."

The December 2021 Metrobus Fleet Plan indicates that the size of Metro's current CNG fleet—currently housed at Bladensburg and Four Mile Run—is 481 buses. It plans to increase its CNG fleet to 704 buses in FY 2023 when the new infrastructure at Shepherd Parkway is completed, and then to 741 buses when the Bladensburg rehab is completed in FY 2027, bringing the percentage of CNG buses in the fleet to nearly 50 percent. But the Fleet Plan also indicates the number of CNG buses is scheduled to peak at 764 in FY 2027 and then decline shortly after the completion of the CNG fueling facilities at Shepherd Parkway and Bladensburg. In other words, Metro is planning to spend scarce capital dollars on CNG fueling infrastructure that will be increasingly underutilized (and eventually unnecessary) before the end of its useful life.

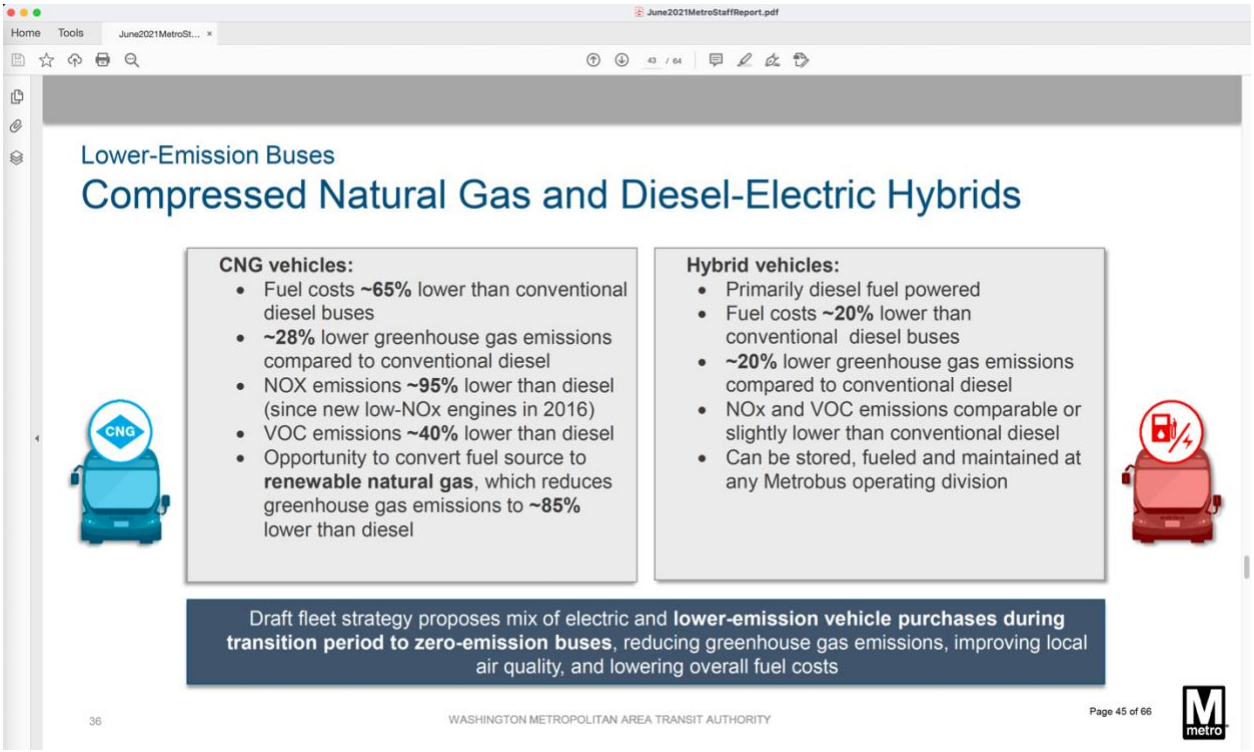
Why is Metro planning to increase the percentage of CNG buses in its fleet when other major transit agencies are steadily replacing their CNG and diesel buses with electric buses?

The Metro staff asserted in its June 2021 presentation that increasing the percentage of CNG buses would *lower* overall Metrobus greenhouse gas (GHG) emissions. In slides 36 and 46, the Metro staff claimed that CNG buses emit approximately 28 percent less greenhouse gas (GHG) emissions than conventional diesel buses. Left unsaid was that calculation pertained to tailpipe and other operational (including braking) emissions—what Metro calls "local emissions"—not lifecycle emissions. A lifecycle analysis, also called a well-to-wheel analysis, assesses overall global warming emissions from a specific fuel, including each stage of its production and use.

According to Andrew Burnham, principal environmental scientist at the Department of Energy's Argonne National Laboratory, his lab's "data show that a fossil compressed natural gas transit bus has about 6 percent lower [lifecycle] GHG emissions versus diesel." Burnham also verified that CNG buses emit nearly the *same level* of lifecycle carbon emissions as conventional diesel buses in many circumstances, as the Washington Post reported last August, due to "methane leakage and relative fuel economy."

Argonne calculated that an electric battery bus is responsible for 64.6 tons of lifecycle greenhouse gas emissions annually, a CNG bus is responsible for 131.41 tons, and a conventional diesel bus is responsible for 140.3 tons. Thus, as Burnham said, a CNG bus emits

only 6.4 percent less lifecycle GHG emissions than a diesel bus, while an electric bus on average emits 51 percent less than a CNG bus and 54 percent less than a conventional diesel bus.



The Metro staff's June 2021 presentation not only failed to provide lifecycle data, it also falsely asserted that Metro will buy "lower-emission" buses to reduce GHG emissions and improve air quality, despite the fact the fossil fuel buses it plans to buy are no different than buses it already has in its fleet.

Battery electric bus lifecycle GHG emissions range from 29 to 87 percent lower than diesel buses and 19 to 85 percent lower than CNG buses depending on the power source, according to a 2018 analysis by the Union of Concerned Scientists (UCS) based on 2016 Environmental Protection Agency power plant emissions data. UCS found that in the Washington, D.C., metro area, electric buses are responsible for 70 percent lower lifecycle GHG emissions than diesel buses, 65 percent lower than CNG buses, and 60 percent lower than diesel-electric hybrids. Electric grids are now cleaner than they were in 2016, so lifecycle electric bus GHG emissions in the D.C. area are likely about 5 percent lower.

Likewise, CNG buses are no better than conventional diesel buses when it comes to toxic local emissions. They still pose a threat to public health. (As you know, electric buses do not emit any carbon monoxide, nitrogen oxides, hydrocarbons or volatile organic compounds. They don't have a tailpipe!)

A 2016 study comparing CNG with diesel buses conducted under actual traffic conditions, for example, found that, compared to conventional diesel buses, CNG buses emit 90 percent less nitrogen oxides but 71 percent more carbon monoxide and 2,320 percent more hydrocarbons, including methane. (It also found that CNG buses emit 11 percent *more* carbon dioxide.)

Similarly, Argonne Laboratory calculated that CNG buses emit 95 percent fewer nitrogen oxides and 37 percent fewer volatile organic compounds than diesel buses, but 1,050 percent more carbon monoxide.

Reducing nitrogen oxides but dramatically increasing carbon monoxide and hydrocarbons at the same time will not improve air quality. And although CNG buses emit less nitrogen oxides, the methane they emit also contributes to the formation of ground-level ozone, or smog.

It makes no sense for Metro to spend tens of millions of dollars on new CNG buses, fueling facilities and related infrastructure when doing so would not cut toxic pollution nor appreciably lower lifecycle carbon emissions. Regardless, Metro plans to purchase new CNG buses as stated in both the outdated 2017 Fleet Management Plan as well as the recent December 2021 Fleet Management Plan to boost the percentage of CNG buses in the fleet from 30 percent to 50 percent. As depicted in the table below from the December 2021 Plan, Metro plans to purchase 75 CNG buses from FY 2024 through FY 2028 and 50 in FY 2029. In other words, Metro will add 425 CNG buses to its fleet that will emit toxic pollution and greenhouse gases, and build new CNG fueling stations that will soon become stranded assets.

Table C-1: Bus Procurement Scenarios Summary, by Fiscal Year

Scenario	Fuel Type	FY24–FY28	FY29	FY30–FY33	FY34–FY38
Baseline	Diesel	50	50	50	50
	CNG	50	50	50	50
	Electric	0	0	0	0
2021 Metrobus Fleet Management Plan	Diesel	0	0	0	0
	CNG	75	50	0	0
	Electric	25	50	100	100

Tables C-2 through C-4 depict the comparative cost impacts of the analyzed scenarios.

Renewable Natural Gas is Not a Realistic Solution

The Metro staff plan also relies on renewable natural gas (RNG), or biomethane, as a low-emission fuel for its CNG buses and assumes that the agency could reduce 80 percent of its GHG emissions through 2030 by using CNG and RNG. More than 90 percent of the reduction would ostensibly come from RNG.

However, relying on RNG, which would not reduce toxic local emissions, is problematic for two major reasons:

First, there's a limited supply: According to a 2019 American Gas Foundation (AGF) study, even after ramping up production, RNG—which comes from municipal solid waste landfills, wastewater treatment plants, livestock farms, food production facilities and organic waste management operations—could only replace 6 to 13 percent of total natural gas demand. It

would never be able to replace the methane currently used in homes, buildings and power plants, much less expand the amount of CNG used as transportation fuel, and Metro would be competing with others for relatively small quantities.

"By marketing RNG as a 'renewable' solution to greenhouse gas emissions, the gas industry is drumming up excitement for a product it cannot deliver," the Sightline Institute pointed out in a March 2021 article. "The industry aims to create the illusion that our gas system can be decarbonized by introducing a new fuel that can offset today's gas demand, when in reality, it would offset only a small portion of that demand."

California has the largest potential of any state in the country to generate biomethane from waste. However, according to a 2017 Union of Concerned Scientists (UCS) analysis, "if biomethane were captured from all potential sources of organic waste in California, the resulting supply would meet approximately 3 percent of the state's [annual] demand for natural gas."

Second, it's expensive: According to the AGF report, RNG would be at least two to five times more expensive than fracked gas.

The Metro staff plan offered no details about its plans for RNG. It noted that the agency has no contract for RNG. It did not provide an estimate of the quantity that would be required based on Metro's evolving bus fleet composition. It did not cite a price for the RNG, which will cost more than CNG. It did not provide a start date for RNG delivery, and the longer the delay, the less time Metro would have to claim offsets. And it did not mention the source of the RNG. In any case, different RNG sources have different offsets because not all RNG provides the same climate benefit.

As the 2017 Union of Concerned Scientists analysis of biomethane concluded: "Increasing consumption of natural gas in the transportation sector is not a solution for significantly reducing climate emissions."

Methane Leaks Undermine CNG's Potential Benefits

Methane leaks, which a 2021 study estimated at 3.3 to 4.7 percent from well pads to urban gas customers, offset the potential benefits of CNG over diesel. At all points during natural gas's extraction, distribution and use, leaks pose a significant climate risk because methane is more than 80 times more potent a global warming gas than carbon dioxide during the first 20 years after its emitted.

Leakage is so common from methane flares, coal mine shafts and CNG engines that the U.S. Department of Energy recently awarded $35 million in grants to projects investigating ways to reduce it. Nearly 40 percent of the money will go to improving CNG engines.

Leaks are widespread in D.C. Beyond Gas DC, a coalition spearheaded by the Sierra Club, recently found nearly 400 methane leaks across all eight wards over a 24-hour period. More than a dozen of them were "potentially explosive."

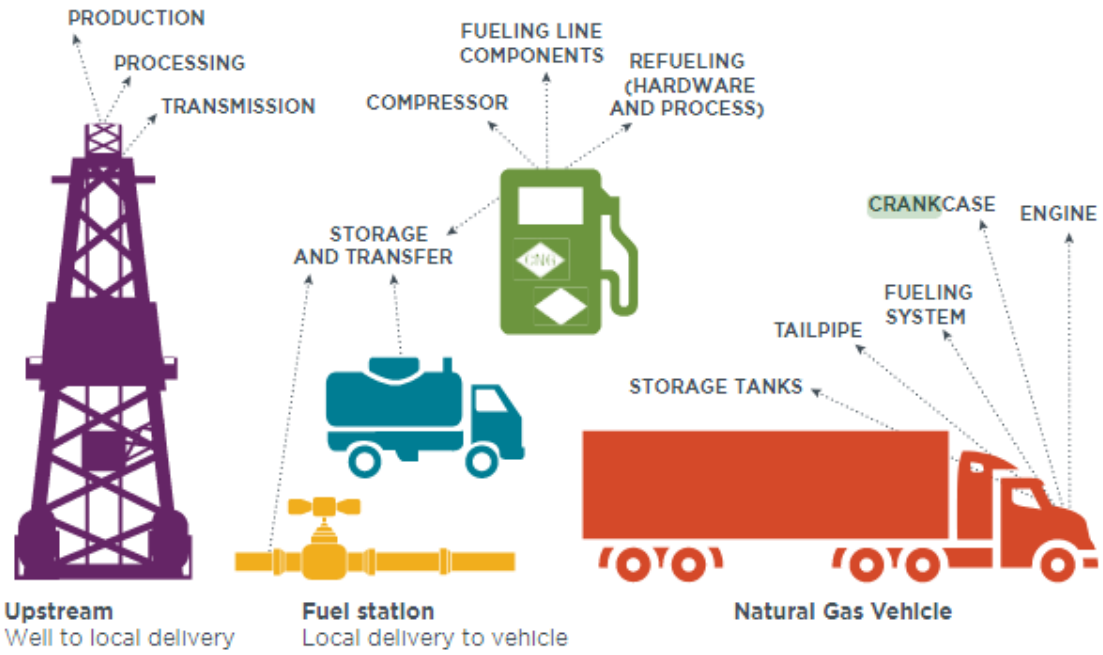


Figure 1. Methane emissions across the natural gas value chain

Washington Gas methane accounts for 23 percent of D.C.'s total greenhouse gas emissions, according to the coalition report, which cited a D.C. Department of Energy and Environment estimate that upgrading current pipeline infrastructure would cost as much as $4.5 billion.

Denver, New York, San Francisco, Seattle and other major U.S. cities have either enacted or proposed measures to ban or discourage the use of natural gas for home heating and cooking because of its oversized impact on climate change. Given the gravity of the situation, it makes no sense for Metro to be heading in the opposite direction.

Current Electric Capacity Exists to Power a Fully Electric Fleet

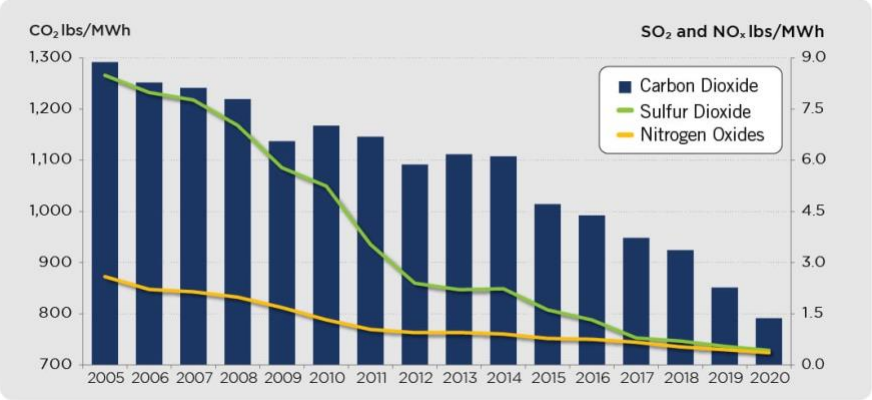
The Metro Board's concerns about the agency's ability to procure the electricity needed to operate an electric bus fleet, and to do so with clean, renewable energy, are overblown.

First, there is ample capacity today to power a fully electrified Metro bus fleet. In fact, as of two years ago—before the Metro staff presented its plan—there was more than enough capacity to electrify *all* of the country's public transit buses. According to a December 2020 CalStart report, "If all of America's 65,000 transit buses are electrified, this would draw 3,342.85 MW [megawatts]. In 2019, average power draw for the United States was 471,105.25 MW, and the United States has 1.1 million MW of utility-scale electrical generation capacity. As a result, the United States has enough generation to power these buses."

Pepco filed an electrification study in August 2021 with the Public Service Commission that found that if the District's decarbonization goals are met largely through new electrification initiatives across all sectors, including transportation, peak demand will grow at an average

annual rate of 1.4 percent between 2021 and 2050. Given that the company managed annual peak demand growth rates in its D.C system between 1950 and 2020 well in excess of 2 percent annually, it is confident that it will be able to handle the load growth from electrifying Metro's bus fleet.

Second, the electricity that would power a fully electrified bus fleet is currently cleaner than operating diesel hybrid or CNG buses, and will only get cleaner in the near future. The jurisdictions in which Metro operates all have forward-looking renewable electricity procurement commitments, or renewable portfolio standards, which dictate the percentage of clean energy that powers local electricity service. In the District, the 2018 CleanEnergy DC Act requires electricity suppliers to buy 100 percent of their power from renewable sources by 2032, including 5 percent from local solar. In Maryland, the 2019 Clean Energy Jobs Act requires that 50 percent of the state's electricity comes from renewable sources, including 14.5 percent from in-state solar, by 2030. While Virginia's Clean Economy Act differentiates between two groups of utilities, the law calls for a phased renewable electricity requirement that averages 35 percent by 2030, 50 percent by 2035, and nearly 100 percent by 2045. Furthermore, average electric utility emissions within the PJM grid operator's regional planning territory—which includes D.C. and Maryland, Virginia and 11 other states—have dropped dramatically over the past 15 years and will continue to decline. Across PJM's territory, emissions of carbon dioxide, nitrogen oxides and sulfur dioxide plunged 39 percent, 86 percent and 95 percent respectively. Between 2019 and 2020 alone, carbon dioxide emissions declined by 7 percent, while nitrogen oxides fell by 20 percent and sulfur dioxide by 21.8 percent.



Metro Should Not House Diesel Buses at the Northern Bus Garage Again

The Metro staff's June presentation mentioned its plans for the Northern Bus Garage, which has been closed for renovation since May 2019, only in passing, but last September Metro confirmed that it will build its first all-electric bus garage at the site. The renovation, according to Metro, will take four to four-and-a-half years, so the earliest it will reopen would be in late 2026, and more likely not until mid-2027. The press release Metro issued in September also acknowledged that the garage "will open with a mix of the current Metrobus fleet [diesel and/or diesel-electric hybrids] and new battery-electric vehicles, transitioning to 100 percent electric as Metrobus' electric bus fleet expands."

It appears that Metro is planning to spend millions of dollars on new diesel bus-related infrastructure that will become a stranded asset and, at the same time, subject the surrounding neighborhood to years of diesel bus noise and toxic pollution.

Located in a residential neighborhood on 14th Street NW, the renovated garage will house at least 150 buses, but according to the board-approved plan, Metro will own at most 113 electric buses by mid-2027 when the Northern Garage reopens—the one it now owns, the 12 it will buy for its pilot project (which it will run out of the Shepherd Parkway garage), and the 25 that it will buy every year from 2024 through 2027. That means at least 37 of the buses at Northern will be diesel and/or diesel-electric hybrids when it reopens, but only if Metro decides to preliminarily house all of its electric bus fleet at Northern.

To service diesel and diesel hybrid buses at the renovated Northern Garage, Metro plans to spend an estimated $5 million to $8 million on new infrastructure, including storage tanks that can hold 1,000 to 25,000 gallons of oil, diesel fuel, transmission fluid or antifreeze. Given Metro will own 138 electric buses in 2028 and 188 electric buses in 2029, according to the procurement schedule the Metro Board approved last June, it could hypothetically house 150 electric buses at the Northern Garage no later than 2029, just two years after reopening it. Does Metro plan to house fewer than 40 diesel and/or diesel hybrid buses at Northern for only two years after spending as much as $8 million on infrastructure that would become a stranded asset?

Conversely, if Metro plans to house its growing fleet of electric buses at multiple garages—and the agency has committed to installing charging equipment at its Bladensburg garage and will install charging equipment at the Shepherd Parkway garage to service the pilot project buses—there is no guarantee that the community surrounding the Northern Bus garage will have only two more years of toxic pollution.

If Metro sticks to its plan, it should hold off reopening the Northern Garage for at most two years until it can fill it completely with electric buses. Conversely, if Metro only purchased electric buses going forward, it could easily fill it with 150 electric buses when it reopens in mid-2027.

Has Metro Aggressively Sought Funds From Federal Programs? (Slide 20)

Metro can and should utilize its existing capital budget to immediately begin buying only electric buses. To the extent that Metro can obtain additional funding to accelerate its electric bus purchases, it should take advantage of those opportunities. On slide 20 of the June presentation, the Metro staff indicated that it was "reviewing potential opportunities for funding support of electric bus technology adoption, including federal programs and grants." However, there is no indication that Metro has obtained any funding earmarked for bus electrification other than the grant that is funding its 12-bus pilot project. On March 7, the White House announced a $5.5 billion expansion of the Low- and No-emission Transit Vehicle Program, and the Department of Transportation announced $1.1 billion in funding for 2022 and an additional $372 million under its bus and bus facilities programs. The deadline for applying for funds is this May, so Metro should immediately begin preparing an application and aggressively seek these funds for buses, facilities and infrastructure, as well as for workforce training.

How Should the New Metro Board Revise the Metrobus Fleet Plan?

After James Ports Jr. replaced Maryland Metro Board member Gregory Slater in January, only two members of the current Metro Board of Directors were directly involved in discussions that led to the Metrobus Fleet Plan the board approved last June. In light of the fact that the board was misinformed when it approved the plan, our coalition is asking the newly constituted board to direct the staff to revise the agency's electric bus procurement schedule, which—as it now stands—would condemn the D.C. region to decades of bus carbon and toxic pollution.

Our coalition recommends the following changes to the Metrobus Fleet Plan:

1. After the last of the fossil fuel buses are delivered from its 2018 contract with New Flyer, Metro should stop buying fossil fuel buses. It should move expeditiously to complete its electric bus pilot project and then, during its next five-year procurement cycle, from FY2024 through FY2028, Metro should buy only buy electric buses. If Metro purchased 100 electric buses annually beginning in FY2024, 45 percent of its fleet would be zero-emission by 2030 and 100 percent would be zero-emission by 2039, which would be more in line with Metro's peer transit agencies' plans.

   Besides the organizations that make up our coalition, more than 50 federal, state and local elected officials—including four members of Congress and more than 30 Maryland state legislators—have called on Metro to transition at least half its fleet to electric buses by 2030 in a May 2021 letter to Metro General Manager Paul Wiedefeld and the board.

   More recently, the D.C. Council unanimously adopted a resolution calling on Metro to stop buying fossil fuel buses after its current contract with New Flyer is fulfilled and commit to "electrifying at least 50 percent of its bus fleet by 2030, 75 percent by 2035, 90 percent by 2040, and 100 percent by 2045." "Going forward," the February 1 resolution states, "WMATA must buy only electric buses."

   According to a 2020 Sierra Club report, electrifying half of Metro's bus fleet by 2030 would save the transit agency hundreds of millions of dollars in lifetime bus operating and maintenance costs, slash its fleet's annual carbon pollution by more than 58,000 tons, and dramatically reduce the toll toxic air pollution has on our region's most vulnerable residents. The report also calculated that D.C. area residents would save more than $8 million per year in health care costs once the entire fleet is electrified.

2. Regardless of what the newly constituted Metro Board decides to do about the bus fleet electrification schedule, Metro should cancel its ill-advised plan to 1) increase the percentage of CNG buses in its fleet, 2) build a new CNG fueling facility at the Shepherd Parkway garage, and 3) expand the Bladensburg garage's capacity to fuel more CNG buses. It should keep Bladensburg's current CNG fueling infrastructure in place for the time being (and complete the renovation around it). If the board accelerates Metro's electric bus procurement schedule, it would steadily replace its CNG buses—and diesel buses—with electric buses.

Elected officials in the region also oppose expanding Metro's reliance on natural gas. Their May 2021 letter states that "Metro should immediately halt plans to install additional natural gas fueling infrastructure." The D.C. Council resolution was even more specific. It states that "WMATA should cease investment in diesel and compressed natural gas fueling infrastructure that risks becoming a stranded asset, including abandoning current plans to install compressed natural gas fueling apparatus at the Shepherd Parkway Bus Division in Southwest D.C."

3. Metro should cancel plans to install new diesel-related storage tanks and infrastructure at the Northern Bus garage and only house electric buses there after the renovation is complete.

   The D.C. Council resolution states: "When WMATA finishes refurbishing its Northern Bus Garage on 14th Street NW, it should no longer house diesel buses there, running only electric buses at that site."

4. Metro should be planning for and installing electric bus charging infrastructure at its bus garages in all three jurisdictions to accommodate the purchase of 100 electric buses annually beginning in FY2024. The D.C. Council resolution states: "Any future upgrades to WMATA bus garages or fueling infrastructure must include electric bus ready designs."

5. Metro should include in its plan a dedicated electrification program for its MetroAccess fleet, and make a commitment to electrify all of its fossil fuel vehicles, which it could charge with the infrastructure Metro installs for its electric bus fleet.

6. Metro should initially deploy electric buses at its garages in low-income and environmental justice neighborhoods to ensure the buses benefit area residents who are disproportionately harmed by smog and other transportation-related air pollution. That would include the Northern Bus garage in Northwest D.C., which Metro is currently renovating.

7. Metro may have to simplify its bus routes and revise its schedules to integrate electric buses into the system. Electric buses also may require charging at route turnaround points. (See the D.C. Policy Center's "Four ways to build a better bus system.")

Major transit agencies across the country, as well as smaller ones in our region, are facing similar challenges as Metro to replace their fossil fuel fleets with electric buses. But unlike Metro, bus authorities in Chicago, which is colder, Houston, which is hotter, Seattle, which is wetter, and San Francisco, which is hillier, are addressing those challenges head on and have ambitious plans to transition as quickly as possible. There is no reason why Metro cannot do the same.

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The Metro Electric Bus Coalition includes: ANS (formerly Audubon Naturalist Society), D.C. Environmental Network, Earthjustice, Electric Vehicle Association of Metropolitan Washington, Faith Alliance for Climate Solutions, Green Latinos, Greenpeace USA, Loudon Climate Project, Maryland Legislative Coalition, Moms Clean Air Force, Northern Bus Barn Neighbors, Northern Bus Garage Community Environment Committee, Sierra Club D.C. Chapter, Sierra Club Maryland Chapter, Sierra Club Virginia Chapter, and Union of Concerned Scientists.