NGVAMERICA
Natural Gas Vehicles for America

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Liane M. Randolph, Chair
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95814

RE: NGVAmerica Comments on the CA Low Carbon Fuel Standard

Chair Randolph:

Natural Gas Vehicles for America (NGVAmerica), the national trade association for the natural gas vehicle industry, respectfully submits the following comments on the need to continue to incentivize the lowest carbon fuels available to the transportation market. As Governor Newsome recently stated to the California Air Resources Board (CARB), more immediate and impactful action is needed to combat climate change in California. NGVAmerica strongly endorses the use of all low carbon renewable fuels now, while zero emission vehicles (ZEV) are being developed. California can no longer wait for a chosen single technology to be commercialized before they take strong action to lower emissions. The California Air Resources Board (CARB) has shown that it understands that to promote a cleaner environment effectively and quickly RNG is an essential component of the Low Carbon Fuel Standard (LCFS) program and NGVAmerica appreciates CARB leadership in this.

NGVAmerica endorses strategies that support the use of zero emission vehicles (ZEV), near-zero emission vehicles and a transition to low and net negative carbon transportation fuels such as renewable natural gas, and eventually hydrogen. There is **no one solution** to the pressing environmental issues facing the transportations sector. CARB should move quickly to deploy those technologies and solutions that are readily available, maximize cost-effective emission reductions, and provide a real pathway to carbon neutral or carbon-negative emissions.

Converting medium- and heavy-duty (M/HD) vehicle transportation networks to low NOx trucks operated on RNG provides a readily available, proven and cost-effective solution to accelerate the transition to a low-carbon transportation future. Further, dedicating program resources to cleaner alternative fuel technologies that are available now will significantly and immediately benefit all communities by maximizing the displacement of older, higher emitting diesel trucks and buses, including those higher emitting vehicles that operate in communities that are underserved by current transportation options.

Near-zero engines operated on RNG produce at least 90% *less* NOx than the cleanest diesel engines and operate at virtually zero NOx emissions (0.02 g/bhp-hr or less). In California RNG is used to fuel low NOx vehicles providing reduced life cycle emissions of greenhouse gases (GHG) that in some cases can be net zero or even carbon negative (as shown from CARB's own carbon intensity data from its LCFS program at https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities).

NGVAmerica believes that CARB must continue to include and promote the use of RNG low NOx trucks for the near term and beyond to reduce emissions from the transportation sector, especially in disadvantaged communities that have been relegated to diesel solutions while we wait on the EV industry to commercially mature. Some of the issues with M/HD ZEVs include:

- Vehicles can be ordered, but cannot be delivered
- Small-scale pilot service basis only today
- Substantial challenges whether duty cycles can meet business needs
- Limited service networks
- Cost of ZEV technologies substantially higher than non-ZEV technologies
- Affordability remains a significant barrier to large-scale adoption
- Little charging/fueling infrastructure exists
- Electrical distribution system upgrades required
- Power/fuel supply to support widespread deployment will take many years to develop

Low NOx vehicles with the potential of carbon net zero and even carbon negative emissions with RNG are:

- Commercially demonstrated and available today
- Sufficient fueling infrastructure that is largely funded by the private sector
- 90% cleaner than diesel trucks on NOx (without requiring after-treatment apparatus)
- 100% elimination of diesel particulate matter emissions
- When fueled by RNG, can provide substantial GHG emissions reductions
- More cost-effective than ZEV trucks, allowing limited incentive funds to stretch further
- Addresses elements of the transportation sector that are hard to electrify
- Enables a diversity of effective technology/fueling solutions
- Fueled with RNG that is produced from domestic, renewable, plentiful feedstock
- Supports sustainability goals of organizations and fleets

Real World Experience

Amazon has ordered thousands of Classes 6 through 8 trucks, choosing low NOx vehicles because they would not buy diesel trucks and could not buy electric trucks now or in a reasonable timeframe. UPS, WM, Republic Services, Fort Collins Transfort Buses, Denver International Airport Buses and equipment, Los Angeles World Airports Buses, City of Los Angeles, City of Fresno Transit, LA Metro Transit, New York's Hunts Point fleet Industries and many other fleets have chosen low NOx trucks as the only available non-diesel heavy-duty truck that outperforms other alternative technologies in all aspects of vehicle operation.

To support low NOx markets in the United States, Asia, Europe, South America and elsewhere, Cummins has initiated a worldwide low NOx engine division to fulfill the demands for immediate diesel alternatives across the world. In addition to 3 heavy duty low NOx engines, they are bringing forward a new heavy-duty 15L engine that provides the power and performance of diesel and that is 500 pounds lighter and more efficient. Also, Hyliion is in the final stages of field testing its plug-in hybrid electric/CNG Class 8 truck that is scheduled to be commercially available in 2023.

As is evidenced in the above paragraphs, low NOx vehicles are growing in the M/HD truck market, especially as new technology is introduced, EV technology is delayed, cleaner engines are mandated and diesel prices continue to climb. It should be noted that using the AFLEET calculations, low NOx trucks are truly virtually zero since it takes only 1.05 low NOx trucks to equal the NOx tailpipe emissions reductions of a battery electric (BE) short-haul truck. When the range/duty cycle issues are factored in (may take more than one BE truck/bus to replace a diesel or low NOx truck/bus), the cost-effectiveness of using electric vehicles is a significant issue.

Investments in RNG-fueled trucks and transit buses accessing ports, cities, and densely-populated neighborhoods are the most immediate and fiscally-responsible investment to clean our air and combat climate change. Communities get more clean vehicles having greater clean air and climate impact for the money with RNG than with any other alternative fuel option, especially electric. No other transportation fuel is as sustainable, adaptive, and competitive across all applications and vehicle classes. And heavy-duty low NOx trucks are not demonstration science projects; they are proven, scalable, and on U.S. roads today. We will not meet emissions reductions goals or timeframes without using RNG.

Reduce Emissions Now and in the Future

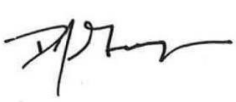
More than four of every ten Americans live in communities with dangerously dirty air. According to the American Lung Association, over 135 million people are living in places with unhealthy levels of ozone or particle pollution. And the burden of living with unhealthy air is not shared equally; people of color are over three times more likely to be breathing the most polluted air than white people.[1]

Low NOx engines are proven, cost-effective and available today for medium- and heavy-duty vehicles. Moreover, because RNG is used, life cycle greenhouse gas emissions from low NOx vehicles are reduced further. Fueling with RNG also creates new economic development for energy created from wastewater treatment, landfills, animal waste and other methane sources and significantly increases air quality by reducing the amount of methane released.

NGVAmerica strongly believes that RNG-operated low NOx vehicles should not just be "allowed" but must be **promoted** in the CARB LCFS program if emissions reductions are to occur in any reasonable timeframe. The current performance based assessment of fuels in the LCFS should be maintained to encourage and incentivize vehicles that operate on low and carbon negative fuels. Statutory requirements are pressing on California and CARB needs solutions that work now to decarbonize and clean California's environment. Therefore, we request that RNG-operated low NOx trucks be prominent in CARB's strategies as an immediate pathway to a zero emission future.

Thank you for your consideration, and please contact me or Sherrie Merrow at smerrow@ngvamerica.org or 303.883.5121 with any comments or questions.

Sincerely,



Daniel J. Gage
NGVAmerica President

[1] American Lung Association, *State of the Air Report*, April 2021.