California Natural
Gas Vehicle Coalition

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Submitted via Electronic Comments Docket

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RE: Informal Comments on the Advance Clean Fleet Rulemaking

The California Natural Gas Vehicle Coalition (CNGVC) appreciates the opportunity to provide further comments on the proposed Advanced Clean Fleet (ACF) regulation as presented on September 9th and in subsequent specified workshops. In addition to the remarks we made in our April 9th coalition letter, CNGVC provides the following feedback.

CNGVC is a coalition of natural gas vehicle and engine manufacturers, utilities, fuel providers and fleet operators. We support the inclusion of heavy-duty (HD) low NOx trucks fueled by renewable natural gas (RNG) in the State's clean transportation strategy. RNG-fueled low NOx trucks are immediately available, cost-effective and achieve immediate, significant reductions in short-lived climate and criteria pollutants. This technology, created with significant support from CARB, is in use today and can easily be deployed at scale to provide a 1-to-1 replacement for the current higher-emitting diesel fleet.

Draft Regulation Incentivizes the Continued Use of Diesel

The exclusion of additional clean technology fuels, lack of a suitable, workable "alternative" and avoidance of a near-term strategy will unfortunately result in the continued use of diesel as the default fuel option. Diesel cannot become the default alternative to the lack of commercially ready HD zero-emission vehicles (ZEVs). We all agree that diesel engines are a major source of harmful toxins like diesel particulate matter (DPM), nitrogen oxide, ozone and black carbon – a damaging short-lived climate pollutant that is harmful to the environment and negatively affects public health.

RNG-Fueled Trucks Should Be a Compliant Alternative During HD ZEV Build-Out

RNG-fueled trucks should be included as a compliant alternative under the ACF when a HD ZEV truck option is either unavailable or unable to meet the duty cycle requirements of the fleet. The ACF does not account for the reality that HD ZEV trucks may not be available or feasible by the identified target dates. Irrespective of the manufacturing mandate in the Advance Clean Truck

(ACT) rule, if HD ZEV trucks do not materialize in time, cannot be delivered at scale, cannot perform as needed or simply lack the infrastructure to support mass deployment, the target dates will be meaningless and the state will have failed on its promise to the millions of Californians breathing toxic, polluted air.

Governor Newsom's Executive Order requires a transition to 100 percent ZE medium- and heavy-duty trucks by "2045 where feasible." Not being able to deploy HD ZEV trucks at scale and/or at a performance capacity to ensure a one-to-one replacement with current vehicles certainly makes the transition infeasible – a few pilot trucks do not equate to a workable and achievable transition strategy[1].

The study conducted by Ramboll U.S. Consulting Inc. titled "Multi-Technology Pathways to Achieve California's Air Quality and Greenhouse Gas Goals: Heavy-Heavy-Duty Truck Case Study," concluded that "expanded implementation of zero-emission and low NOx vehicles, coupled with increased introduction of renewable liquid and gaseous fuels, can deliver earlier and more cost-effective benefits than a ZEV only approach."[2] The study also found that "near-term NOx reductions and long-term GHG goals can be achieved with a mix of advanced low-emitting trucks and renewable fuels."[3]

Additionally, the recent scientific study[4] titled "Achieving NOx and Greenhouse Gas Emissions Goals in California's Heavy-Duty Transportation Sector" found that the best pathway to reducing GHGs and criteria pollutants is to eliminate diesel through a combined zero and near zero approach that includes low NOx trucks operated on renewable fuel. The highly respected authors stated, in part, "GHG results show that very aggressive deployment of low carbon technologies is necessary to achieve 2040 emission targets…The analysis suggests that Heavy-Heavy-Duty Near-Zero Emission Vehicles should be encouraged in the near to mid term, and even long term, if operated on renewable natural gas." The authors continued by stating, "We evaluate the NO_x and greenhouse gas (GHG) emissions trends of the Heavy-Duty (HD) transportation sector in California's South Coast region, under four future scenarios with varying deployment trends of near-zero-emission vehicles and zero-emission vehicles (NZEV and ZEVs) over two decades… Analysis shows that emissions are significantly impacted by the rate of deployment of cleaner technology options...The results show accelerating the fleet turnover to be a more important NO_x control strategy than dividing the vehicle replacement between NZEVs and ZEVs."

Even though both studies have been submitted to CARB earlier this year, to date, a publicly available analysis for either has not been released. The public deserves to know what, if anything, CARB agrees/disagrees with in each study and why their conclusions are not yet incorporated into the ACF.

Goals are helpful but not a predictor of market response. The ACF must incorporate flexibility that allows fleet operators to still make a clean fuel choice until comparable HD ZEV trucks are commercially available. The compliance alternative included in the proposed draft – a "plug-in hybrid with a minimum all electric range" – is not the solution. By staff's own admission during

[1] Wayne Nastri, Executive Officer, SCAQMD, August 3, 2021 letter discussing the readiness of ZEV HD trucks.
[2] *"Multi-Technology Pathways to Achieve California's Air Quality and Greenhouse Gas Goals: Heavy-Heavy-Duty Truck Case Study."* 2021, Ramboll US Consulting, Inc., https://www.arb.ca.gov/lists/com-attach/78-sp22-kickoff-ws-B2oFdgBtUnUAbwAt.pdf
[3] Id.
[4] *"Achieving NOx and Greenhouse Gas Emissions Goals in California's Heavy-Duty Transportation Sector*," 2021, Raju, Wallerstein and Johnson, www.sciencedirect.com/science/article/pii/S1361920921001826

multiple ACT and ACF workshops, this "alternative" is not commercially available either, so how can it provide a cleaner substitute to diesel if it turns out to be just as elusive as the HD ZEV truck?

And, while staff believes the ACT regulation will solve the HD ZEV truck deployment issue and the Omnibus Rule will make diesel as clean as low NOx trucks, these assumptions are based on arbitrary time frames and unsubstantiated information that are already proving to be too ambitious as well as substantial doubts by engine manufacturers. Why do we need to press diesel engines to reach the Omnibus Regulation's .02 NOx engine requirement when low NOx trucks can already perform at that standard today. Wouldn't it be more seamless to simply utilize proven technology that is in use, readily available and supported by existing infrastructure that has been built through private investment.

Further, we continue to hear about delays in the Class 8 ZEV truck production. Early adopters have been waiting over 5 years for the Tesla semi, for example, and just recently another year delay was announced[5]. Consider the comments from Wayne Nastri, Executive Officer of the South Coast Air Quality Management District (SCAQMD), in his August 3, 2021 letter on the readiness of HD ZEV trucks:

> *"The use of zero emission technology for heavy duty class eight trucks is a reality that simply isn't available yet … Manufacturers make promises the vehicles can be ordered but cannot be delivered and put into service on anything other than a small scale pilot basis. And even if they were ready to be manufactured at large scale today, there are substantial challenges regarding whether the duty cycles for ZE class eight vehicles can meet business needs and whether a service network is available for businesses that acquire these vehicles. In addition, the cost of ZE technologies is substantially higher than non-ZE technologies, and while eventually we expect the total cost of ownership to be lower for the ZE trucks, affordability remains a significant barrier to large scale adoption. Finally, even if all these barriers were addressed, the charging/fueling infrastructure (plugs and hydrogen dispensing stations), the electrical distribution system (neighborhood transformers, substations, etc.) and the power/fuel supply to support widespread deployment will take many years to develop."*

Benefits of Low NOx Heavy-Duty Trucks

RNG-fueled low-NOx HD trucks not only significantly reduce climate pollutants immediately, they also provide relief from criteria pollutants and air toxics like DPM, nitrogen oxide (NOx), and ozone. It also provides the co-benefit of reducing methane emissions through the use of RNG. The benefits of RNG-fueled low-NOx trucks are undisputable:

[5] https://www.ccjdigital.com/alternative-power/article/15279630/elon-musk-optimistic-about-tesla-semi-production-in-2023?utm_term=VersionB&utm_medium=email&utm_content=10-12-2021&utm_campaign=CM_NL_CCJ+Daily&utm_source=CM_NL_CCJ+Daily&ust_id=d5a5ff4954b8418523391848af8776f7f56880a3&oly_enc_id=4335F3745901H7I

- NOx emissions are reduced by 90%, or better, in comparison to the diesel trucks on the road today;
- DPM is reduced 100%;
- Low NOx trucks are 90% quieter than diesel trucks;
- Low NOx trucks are commercially available, proven and supported statewide by existing fueling infrastructure built out with private investments;
- RNG fuel reduces carbon emissions by up to 400%;
- RNG fuel has already fully penetrated the California market and is readily available;
- Low NOx trucks are affordable, costing less than half the cost of other clean technology.

Every renewable natural gas engine we can put on the road to reduce SCLP (i.e., consumes captured/renewable methane) and help meet our overall reduction goals is a win. Simply allowing diesel to be the default when cleaner technology is available is a missed opportunity that delays a healthier future. Encouraging the continued use and purchase of polluting diesel trucks when a cleaner option is available is counter to the policy objective behind the ACT and the purpose of CARB. Fleet owners should not be prohibited from purchasing a cleaner vehicle simply because the technology of choice is unavailable.

Annual Commercialization Review Necessary to Determine HD ZEV Availability

CNGVC supports the recommendation to incorporate a HD ZEV truck commercialization review into the proposed rulemaking. This analysis should be performed immediately by an independent industry group that has knowledge about the clean transportation technology industry, include expertise regarding the ongoing production, piloting and deployment of HD ZEV trucks.

The analysis should be done now and no later than to establish any mandated time frames for HD ZEV truck purchases to ensure that the dates selected and the fleet vehicle percentage requirements accurately reflect market realities. Report results should be posted on CARB's website and searchable to the public. This analysis should be conducted annually throughout the entire HD ZEV transition period so that fleet owners and operators are equipped with the timeliest information about the HD ZEV truck market. It can also provide staff with empirical data to aid in evaluating the validity of fleet exemption requests. And, the data can substantiate the acceptance of RNG trucks as a compliant alternative where HD ZEV trucks are shown to be unavailable, as discussed earlier in our letter.

Infrastructure and Grid Reliability Unaccounted for Under ACT

The issue of infrastructure and the reliability of the electrical grid remains unaddressed under the ACT. There is no guarantee that the electric grid can support the widespread deployment of HD ZEV trucks as mandated, especially when combined with additional efforts to electrify other segments of the economy. Further, there does not appear to be an exemption or extension process for lack of electrical infrastructure and nothing in the draft cost assumptions for backup if the infrastructure does not work. Will there be enough power to support a fully electrified transportation sector? How will this energy be generated? How will this energy be generated and will those sources be zero-emissions? Will there be enough charging infrastructure? Will this be built out prior to the sales mandate required under the ACT? And, what if the grid goes

down, who gets back-up power and is allowed to drive? These and many other questions remain and must be resolved before we turn over the goods movement fleet and risk catastrophic consequences.

One-to-One Replacement is Necessary Consideration

As we explained in our previous coalition letter dated April 9, 2021, the ACT exemptions are largely driven by the availability of vehicles. Therefore, it is important that replacement vehicles are able to do the same duty cycles without requiring significant changes to operations. When assessing the availability of vehicles, staff must conduct a detailed analysis of whether a conventional vehicle can be replaced by a HD ZEV on a one-to-one basis. Not being able to meet this test, as we stated above, speaks to the feasibility of the fleet transition and impacts the total cost of ownership projections.

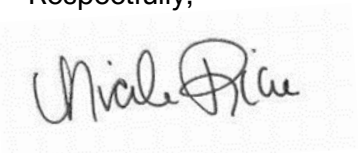
For example, Los Angeles Metropolitan Transportation Authority found that converting its fleet to plug-in battery electric buses would require an 18 percent larger fleet. Additionally, Metrans conducted an analysis of drayage operations and found that a fleet of 19 drayage trucks would have to be expanded by 70% to complete the same work if replaced with plug-in battery electric trucks.

General Points Related to Process

ACF is a substantial regulation that undoubtedly will have significant impact on almost every sector of the State's economy for decades to come. Given the number of outstanding issues still under consideration by staff, as raised by stakeholders, we urge staff to publish and release another informal draft along with an additional informal comment period prior to formal rulemaking. Not only will this provide stakeholders the option for feedback on the suggestions staff committed to consider during the ongoing public workshops, it also provides staff the opportunity to confirm their interpretation of the issues discussion. Collectively, these additional steps could aid in the Board's review when it comes to them for approval.

We respectfully offer these comments and urge staff to adopt the outlined actions. Please feel free to contact me if you have any questions.

Respectfully,



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