



October 22, 2021

Submitted via Electronic Comments Docket

Ms. Rajinder Sahota
Deputy Executive Officer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

**RE: Comments on Proposed Pathway Scenario Modeling Assumptions
2022 Scoping Plan Update
Scenario Inputs Technical Workshop – September 30, 2021**

Dear Ms. Sahota,

The California Natural Gas Vehicle Coalition (CNGVC) appreciates the opportunity to comment on the Proposed Pathway Scenario Modeling Assumptions presented at the September 30th Scenario Inputs Technical Workshop on the 2022 Scoping Plan Update.

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 NO_x trucks fueled by renewable natural gas (RNG) in the State's clean transportation strategy. RNG-fueled low NO_x 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 be easily deployed at scale to provide a 1-to-1 replacement for the current higher-emitting diesel fleet.

RNG-fueled HD trucks are a viable solution to California's need for immediate reduction in greenhouse gases (GHG), short-lived climate pollutants (SLCP), nitrogen oxide (NO_x), carbon monoxide (CO) and diesel particulate matter (DPM) to advance California's climate goals and improve air quality that will have a measurable impact on furthering public health.

The proposed modeling assumptions support CNGVC's long-standing position that California's transition to cleaner transportation has been years in the making and is built on renewable biofuels. True commercialization of the medium- and heavy-duty (MHD) zero emission product is still years away and could remain stalled until advancements, adequate infrastructure and power supply become available and supply chain delays are resolved. Therefore, it is imperative that the Air Resources Board (CARB) model a Scoping Plan strategy that includes renewable fuels in the HD sector to achieve greater GHG emission reductions today as well as in the future. We offer these comments to support and guide that work.

Electrification Goals Should Be Consistent with Governor Newsom’s Executive Order N-79-20.

Governor Newsom’s Executive Order (EO) N-79-20 should be the starting place for any proposed modeling assumptions. Any GHG modeling alternative that pushes ahead of the EO deadlines and conditions and proposes statewide carbon neutrality by 2035 in the MHD sector should be rejected. Additionally, the EO’s 2045 MHD truck electrification goal should not be pursued until a feasibility study is performed to demonstrate the commercialization of zero emission vehicles (ZEV) and their ability to perform the duties for the vehicle class and type they seek to replace, as condition and required by the EO.

Section 1 of the Governor Newsom’s ZEV EO states in part:

*“It shall be a goal of the State that 100 percent of in-state sales of new passenger cars and trucks will be zero-emission by 2035. It shall be a further goal of the State that 100 percent of medium- and heavy-duty vehicles in the State be zero-emission by 2045 for all operations **where feasible** and by 2035 for drayage trucks. It shall be further a goal of the State to transition to 100 percent zero-emission off-road vehicles and equipment by 2035 **where feasible**.”* [emphasis added]

Section 2 continues, in part, that the “*State Air Resources Board, to the extent consistent with State and federal law, shall develop and propose:*”

*“Medium- and heavy-duty vehicle regulations requiring increasing volumes of new zero-emission trucks and buses sold and operated in the State towards the target of 100 percent of the fleet transitioning to zero-emission vehicles by 2045 everywhere **feasible** and for all drayage trucks to be zero emission by 2035.”*

“In implementing this Paragraph, the State Air Resources Board shall act consistently with technological feasibility and cost-effectiveness.” [emphasis added]

These sections reflect the Governor’s acknowledgment that achieving 100 percent zero emissions in the MHD sector by 2045 may not be possible if the product can’t be produced or meet the duty cycles needed. CNGVC believes that any replacement MHD ZEV that cannot be a 1:1 replacement in terms of duty cycle is not a ‘feasible’ replacement, which is why we urge staff to perform a feasibility study before such requirement is imposed.

CARB Must Consider Additional Alternative Scenarios that Prioritize Immediate Emission Reductions.

In response to the question posed on Slide 13 from the September 30th workshop slide – “Do They Need to Consider Alternative Scenarios?”, CNGVC offers a resounding YES!

We urge staff to model scenarios that prioritizes immediate emission reductions in SLCPs (like black carbon and methane) that are damaging our environment. We cannot wait any longer to transition away from diesel trucks. Mobile sources in California account for 50% of GHG emissions as well as 80% of smog-forming NOx and more than 95% of DPM emissions. The Scoping Plan

update must include a near-term strategy that prioritizes immediately deploying the cleanest truck technology commercially available today – carbon negative RNG HD trucks. Getting these near-term reductions today are key to achieving the State’s carbon neutrality goals and California should not abandon these reduction opportunities.

CARB’s’ own Low Carbon Fuel Standard (LCFS) data shows that RNG used in California has a life cycle carbon score of -16.57 gCO₂e/MJ and it has been predicted that by January 2024, California-produced RNG will have an average energy weighted CI of -101.74 gCO₂e/MJ. This means that one natural gas truck fueled by California RNG will completely offset the GHG emissions of two diesel trucks¹. This score comes from the prevention of the uncontrolled release of methane. The capture and control of methane is a foundational policy of the State’s SLCP strategy and therefore should be modeled and encouraged in this Scoping Plan Update.

If we are to realize immediate reductions in harmful criteria and damaging climate pollutants, the choice is clear – RNG-fueled HD trucks are a win-win and should be, not only modeled, but encouraged in the Scoping Plan. Otherwise, the scenarios will not be comprehensive and will skew any economic analysis conclusions related to cost effectiveness, economic impact and emission reduction outcomes.

Responses to Proposed Pathway Scenario Modeling Assumptions:

We offer the following comments on the assumptions proposed for the identified industry sectors contained on the “Proposed PATHWAYS Scenario Modeling Assumptions” document:

Section | Truck ZEV – Assumptions:

None of the Alternatives presented under this section account for the reality that zero-emission (ZEV) MHD trucks may not be available or feasible by the identified target dates. Even with mandates, if ZEVs do not materialize in time, cannot be delivered at scale, cannot perform as needed or simply lack the infrastructure to support mass deployment, the dates you’ve identified will be meaningless and the state will have failed on the promises made to millions of Californians currently breathing polluted air. The absence of a near-term strategy combined with the exclusion of other clean alternative fuels will result in the continued use of diesel as the default fuel option. That is the problem with simply identifying end points dates.

As discussed above, the Governor’s EO states we are to transition to 100 percent ZEV MHD trucks “where feasible.” Availability is an indicator of feasibility, but the concepts are not synonymous; a few pilot trucks do not equate to a workable and achievable transition strategy². Feasibility will still be dictated by scale, performance, replacement ratios, infrastructure, and cost effectiveness, to name a few. Goals are helpful but not a predictor of market response.

Diesel cannot become the default alternative to ZEV. As we stated above and in our comment letter dated September 22, 2021, diesel engines are a major source of black carbon, a damaging SLCP and smog-forming pollution that are harmful to the environment and negatively affect public health. The best way to reduce SLCPs in the transportation sector is to reduce diesel use. Therefore, the Scoping Plan update must include a strategy

¹ Gladstein Neandross & Associates, “An Assessment: California’s In-State RNG Supply for Transportation 2020-2024,” July 2020.

² Wayne Nastri, Executive Officer, SCAQMD, August 3, 2021 letter discussing the readiness of ZEV HD trucks.

that prioritizes the immediate displacement of HD diesel trucks with the cleanest technology commercially available – RNG-fueled low-NOx HD trucks. Not only will this switch significantly reduce climate pollutants immediately, it will also provide relief from criteria pollutants and air toxics like DPM, nitrogen oxide (NOx), and ozone. Further, it provides the co-benefit of reducing methane emissions through the use of RNG. The benefits of RNG-fueled low-NOx trucks are undisputable:

- 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 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.

The looming Truck and Bus rule deadline makes the need for a clear policy signal even more urgent. Absent a strategy that preserves and prioritizes the use of RNG trucks, operators will be forced to continue the status quo use of diesel once the pre-2010 model year (MY) diesel truck engine is outlawed in California on January 1, 2023. Class 8 HD ZEV trucks are not currently available to replace the thousands of trucks impacted by the rule's prohibition. We already see this taking place at the ports with South Coast AQMD estimating that the majority of MY pre-2010 diesel trucks have already been replaced with MY 2014 or newer diesel trucks to achieve the port's Clean Air Action Plan requirements. New or used, diesel trucks are still vastly more polluting than RNG trucks. And, while it is true that by 2027, diesels sold in the State will be "mandated" to a cleaner status, it remains to be seen whether they can meet that requirement. What is certain is that inaction will result in lost opportunity to increase the use of carbon negative vehicles on the road.

Section | Port Operations – Assumptions:

Because Alternatives 1 and 2 are inconsistent with Governor Newsom's EO deadline and conditions, these Alternatives should be excluded for the reasons we stated above. While Alternatives 3 and 4 are consistent with the target dates identified in the EO, the pathway scenarios fail to consider either a near-term strategy for achieving immediate emission reductions at the Ports or the use of another cleaner, renewable fuel option, like RNG-fueled low NOx trucks, when there is no ZEV option available by the target date. We urge staff to incorporate both these options in Alternatives 3 and 4. This will ensure the suggested paths are consistent with the EO "feasibility" requirement.

Section | Low Carbon Fuels for Transportation – Assumptions:

CNGVC urges staff to reject Alternative 1. It is a non-starter for all the reasons we previously discussed as it fails to consider the possibility that ZEVs may not be commercialized by the target date, thereby leaving diesel to become the default alternative.

Further, it is naïve to focus exclusively on a pervasive EV adoption and deployment strategy when staff continues to hear testimony from public and private fleet owners at this and other workshops that ZEVs are not fit for all MHD vehicle applications and operations. Instead, fleet owners should be allowed flexibility to purchase cleaner RNG-fueled low NOx trucks in the near-term until there is another cleaner alternative commercially available, and we should disincentivize the use of diesel as an alternative in the immediate when there is another cleaner renewable fuel option in low NOx trucks.

CNGVC supports the scenarios proposed under Alternatives 2-4 that continues to incentivize investments in the capture and use of fugitive methane.

Section | Low Carbon Fuels for Building and Industry – Assumptions:

The only driver in California for continued and increased investment in fugitive methane capture and use is the LCFS. This program continues to be CARB’s best and most proven policy in reducing carbon emissions from the state’s mobile sources. The LCFS is targeted at transportation fuel use which accounts for the growth in supply, but no investment driver exists to produce RNG for commercial and residential buildings and hard-to-electrify industries absent such an incentive.


Without the credits, it simply does not make financial or economic sense to continue to invest in these fuels. If investments wain, we forfeit necessary carbon reductions. The highest and best immediate use for RNG still remains in the transportation sector and this fact has even been acknowledged by former CARB Board Chair Mary Nichols on many occasions. Further, the electric and hydrogen industry are strong supporters of expanding low carbon fuel standards to other states as this policy also helps zero emission strategies work.

Section | Non-Combustion Methane Emissions Section – Assumptions.

CNGVC urges staff to reject Alternative 1. Again, it is a non-starter that will result in the elimination of the LCFS – the only incentive driving the continued and increasing production of RNG in California. Currently, the LCFS is targeted at the transportation sector, which is why we hold firm that the highest and best immediate use of RNG is in the transportation sector. When you eliminate biofuel consumption, you remove the incentive for production and terminate investments in any future RNG production for all use throughout the economy.

Feel free to contact me at nicolerice@cngvc.org if you have any questions regarding our position.

Respectfully,



Nicole Rice, President
California Natural Gas Vehicle Coalition