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The Honorable Liane Randolph
Chair, California Air Resources Board
1001 I Street
Sacramento, CA 95814

July 11, 2022

RE: Draft Advanced Clean Fleets Regulation

Dear Chair Randolph:

The **41 undersigned organizations** represent multiple industries and many stakeholders who are leaders in the effort to achieve climate change and clean air goals. We urge adoption of an Advanced Clean Fleets regulation that provides flexibility, minimizes undue burdens on fleet owners, and maximizes near-term NOx and greenhouse gas emissions reductions by prioritizing low NOx trucks over diesel truck purchases. Please consider the following comments which address the shortcomings of the current draft Advanced Clean Fleets (ACF) regulation (“Draft ACF”.)

ZEV Unavailability Exemption

We highly question the Draft ACF’s general approach or assumption that medium- and heavy-duty Zero Emission Vehicles (ZEVs) will be available on January 1, 2024 in all classes of vehicles, for all duty-cycles, for all commercial sectors, and for all geographic regions of the State. We understand this is an assumption based on the prospect of technology advancement, yet staff has not produced any analysis that supports such a conclusion.

Further, inflationary impacts, lack of needed component materials and processing capacity, and serious supply chain and chip shortage issues have stalled expanded production of ZEVs, especially medium- and heavy-duty versions still in development stage. Rather, staff has adopted the philosophy of “all in,” with limited exemptions when a regulated party can show that it is not technologically feasible to purchase a HD ZEV. This equates to a reverse rulemaking, whereby regulated entities are required to prove technological infeasibility AFTER rule adoption, rather than CARB determining technology feasibility PRIOR to adoption.

We agree that a ZEV Unavailability Exemption is necessary, in part because heavy-duty ZEVs are not expected to become commercially available on a wide scale for at least a decade or more. In fact, the requirement that all new vehicle purchases be a ZEV or Near-Zero Emission Vehicle (NZEV, as defined in the Draft ACF) beginning January 1, 2024, does not align with even the low compliance percentage in the first five years of the Advanced Clean Trucks Regulation for heavy-duty trucks sold to be a ZEV or NZEV. The requirement also does not align with the Omnibus Regulation which requires engines to meet a 0.02g NOx standard starting with model year 2027, nor the draft Scoping Plan which supports continued incentives for biofuels in the Low Carbon Fuel Standard. It also is not in alignment with requirements under SB 1383 to reduce Short-lived Climate Pollutants and divert 75% of organic waste from landfills by 2025.

Please consider our following concerns with the current Draft ACF Regulation:

- Problem No. 1: the Draft ACF exempts fleet owners from the regulation's ZEV/NZEV purchase requirements if a vehicle configuration is not commercially available with a ZEV or NZEV powertrain at the time of purchase.

Limiting exemption considerations to a lack of ZEV or NZEV powertrain ignores the operational needs of the trucking industry and fleet owners and omits other important considerations such as cost, range, one-to-one replacement, available infrastructure, wheelbase range, after-sales support, technician capability, parts availability, network refueling, etc. The Draft ACF should be amended to include a broader consideration of criteria in the exemption process. Additional concerns include:

- At what volume or scale will these ZEVs/NZEVs be produced and when will they be on California's roads?
- For heavy-duty vehicles, will they be able to perform under full loads due to vehicle weight considerations? Can said vehicles function consistently under varying (cold and hot) weather conditions?
- How many models and in what production volumes will HD vehicles be able to operate up to 500 to 650 miles?
- What steps is CARB taking to ensure that many of the startup ZEV/NZEV manufacturers are financially stable and can deliver on the commitments they make relating to the purchase orders they receive?
- Is there any guarantee that HVIP incentives will be available in the longer term, if ZEV costs continue to increase and do not fall as rapidly as forecasted, especially considering supply chain disruptions?
- For heavy-duty ZEVs, we are interested in how CARB is planning to address the following challenges:
 - Battery electric trucks with ranges above 150+ miles may face significant challenges with legally allowable truck weight, and thus may have to reduce their hauling capacity to comply with California weight restrictions. While California does have a 2,000 lbs.-weight exemption for HD ZEVs, the weight impacts of trucks with batteries which can provide a greater distance of 150 miles are likely to exceed this allowable exemption amount and therefore start to impact hauling capacities.
 - Charging times for HD BEVs are several hours. Rapid charging (megawatt charging) is still in the concept phase with product not likely to be commercially available until 2025, and there is no information on the cost of this technology. Many industry experts anticipate said systems to be very expensive. How are the related issues being addressed such as impact on battery life, safety and adaptability to existing charging interface vehicle receptacles?
 - There is currently no publicly accessible HD Electric Vehicle Supply Equipment (EVSE) infrastructure, although a handful of stations are now in the planning stages. However, for HD BEVs to be viable, a comprehensive distribution of charging/fueling infrastructure is an absolute necessity. Does CARB have any information on when this infrastructure will be developed? Where it will be located? How will it operate? What should be expected for operating reliability or uptime? What data is being used to predict what the fuel costs will be? How will the potential lack of needed buildout of transmission capacity affect the ability to quickly charge these trucks?

- Does CARB plan to consider how these various barriers to market may impact the transformation from ICEV to ZEV/NZEV?

One-to-One Replacement

While exemptions will be based on a limited number of factors, replacement vehicles should be able to perform 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 ZEV or NZEV on a one-to-one basis. 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.

- Problem No. 2: the Draft ACF does not define “commercial availability” and therefore limits an exemption to a “vehicle configuration [that] is not commercially available with a ZEV or NZEV powertrain at the time the ICEV is purchased.”

We understand and appreciate that CARB is considering a legal definition of “commercial availability.” We encourage this definition to be included in the final regulation and to include a broader consideration of the variables listed in the previous section of this letter. The Administrative Procedure Act requires “clarity” in adopted rules and we are concerned that without a more comprehensive definition with expressed criteria it is not clear what the rule requires of truck owners.

The definition of “commercially available” will be critical to the regulation and, therefore, needs to be defined and reflect “viability” as well. A truck with a 150 mile range may be available on the market but it may not be “viable,” for example, if it weighs 6,000 lbs. more than the base vehicle, has different truck specifications otherwise deemed necessary for a specific application, has a different wheelbase than what is required, or requires equipment to be added to the back of the truck (different size boxes/van bodies; anything driven by a PTO, which does not exist yet for EVs; etc.) “Commercial viability” is just as important as “commercial availability”, especially relative to such a low baseline standard in the Draft ACF as a ZEV or NZEV powertrain.

If CARB is serious about adopting a definition of “commercial availability” we urge an amendment that uses the same definition as the United State Department of Energy¹ in its “Technology Readiness Assessment Guide.” This includes a “Technical Readiness Level (TRL)” screening analysis that should be used to determine technical maturity and the readiness of each type of technology for the market, taking a technology neutral approach across all sectors. TRL 9 is the highest ranking and considers whether a vehicle is fully tested, available, capable and commercially ready. Even when a technology reaches TRL 9, the DOE then applies a whole range of other screening criteria that speak to “viability.” In fact, the California Energy Commission uses this system to decide whether a particular technology is

¹ United States Department of Energy, “Technology Readiness Assessment Guide,” [Home — DOE Directives, Guidance, and Delegations](#)

commercially mature or not, such as whether projects are in the research and development, development, or deployment phase under the Electricity Program Investment Charge program.

The Guide (page 24) states:

“The primary purpose of using the TRL definitions is to help management in making decisions concerning the development and maturation of technology to ensure it can perform its intended mission. Advantages include the following:

- Provides a common standard for systematically measuring and communicating the readiness of new technologies or new applications of existing technologies at a given point in time in the project life cycle;
 - Provides a measure of risk as a management tool. The gap between the maturity of the technology and the project requirements represents the risks or unknowns about the technology;
 - Assists in making decisions concerning technology funding;
 - Assists in making decisions concerning transition of technology.”
- Problem No. 3: the Draft ACF states that exemptions are to be made only by the Executive Officer who has authority to add and remove eligible vehicles from the list based on limited and unrealistic criteria and without a transparent public process. Vehicles added or removed from the list are for limited reasons and do not consider the criteria we suggested above and do not take into consideration the needs of fleet owners and the trucking industry. This opaque process limited to the discretion of one individual will wreak havoc on the state’s businesses and overall economy and is another reason why the TRL process should be used for evaluating exemptions under the proposed rule.

Exemptions and the exemption process should be standardized and identical for both public and private fleets. Exemptions should also be allowed up to 18 months prior to the needed delivery of the vehicles because significant lead time is needed to budget for procurement, complete bid processes and account for vehicle build time. If on-site charging is required, or necessary, this would add additional timing concerns.

- Problem No. 4: lack of a technical assessment of HD ZEVs. The Draft ACF is without a technical assessment of HD ZEV/NZEV commercial availability. There has not been any public process on what CARB expressly considers “commercially available” for ZEVs/NZEVs, including release of criteria for public comment. With the Draft ACF providing the Executive Officer with sole authority to determine the exemption status, the public should be involved in a transparent process to inform this criteria list. The ACF regulation should be tied to a publicly available technical assessment of the respective technologies and include, but not be limited to, all the criteria mentioned above in this comment letter.

Infrastructure

Current and future electricity supply issues highlight long-term concerns about reliability and affordability associated with the Draft ACF. Beyond these system-level challenges, fleets may

need to work with local utilities and other partners to install vehicle chargers. These projects can suffer their own delays when there is a lack of local distribution capacity. For example, last November the CEC stated that 76 percent of Southern California Edison circuits and 69 percent of San Diego Gas & Electric circuits have less than a megawatt of capacity available, meaning that utility upgrades would be needed before MHD-ZEV charging could be installed.

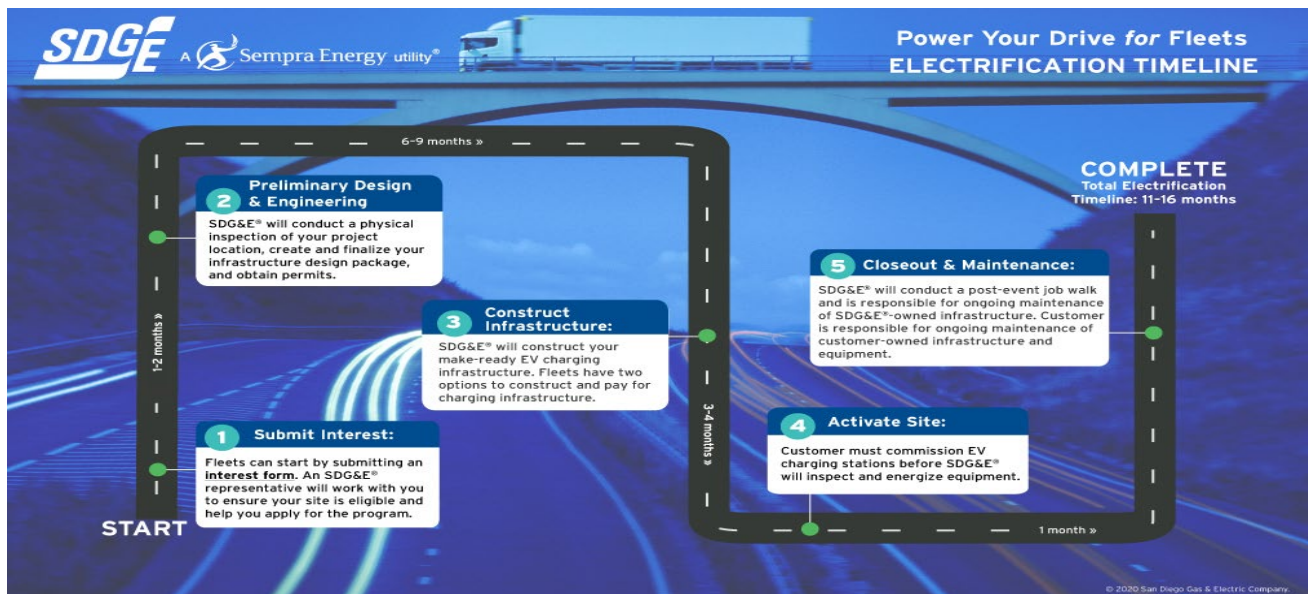
Many of the fleets impacted by the Draft ACF do not currently have charging infrastructure in place to support the ZEV/NZEV deployments and there is no public-access charging solution currently available for MD/HD electric trucks. Even if a fleet can identify a truck that will meet their operational needs, they will not be able to operate the electric truck for at least 9 months based on the infrastructure build timelines laid out by the State's major electric utilities. **According to 3 main Investor-Owned Utilities in the State, electric charging infrastructure development timelines range between 9 to 16 Months.**

Conversely, if a fleet wants to purchase new low NOx compressed natural gas (CNG) trucks that operate on renewable natural gas (RNG), they could buy a truck today and fuel it at the extensive public access fueling network already in place in California and across the country. This would eliminate the need to continue using diesel trucks which emit greater emissions in the near-term. Having charging infrastructure already in place for a deployed technology is essential and should be a principal element to the ACF regulation. Please consider:

PG&E: 9-13 Months²

Following the completion of the ZEV Fleet program application, the ZEV Fleet electrification process, from design to execution, takes approximately 9 to 13 months. This timeline also assumes that the upstream infrastructure to deliver the electrical power is available.

SDGE: 11-16 Months³



² https://www.pge.com/pge_global/common/pdfs/solar-and-vehicles/clean-vehicles/ev-fleet-program/EVFleet_Guide_ElectrificationProcess.pdf

³ <https://www.sdge.com/business/electric-vehicles/power-your-drive-for-fleets#works>

Page 23 of the Draft ACF for “High Priority and Federal Fleet Requirements” provides for an “Infrastructure Construction Delay Extension” and states that a “fleet owner that experiences a construction delay for a project to install their own hydrogen vehicle fueling station or battery-electric vehicle charging station that is beyond its control an extension to delay delivery of a ZEV that needs the infrastructure to operate in the fleet if publicly available infrastructure cannot be used.”

It is likely that such a delay will take longer than one year, per IOU timeline estimates. Compounding this problem is that the fleet owner will still need to make a capital expenditure to order ZEV(s) or NZEV(s) that they cannot use for an extended period. Tying up precious and limited capital on an asset that cannot be used will likely be detrimental to many California businesses.

In addition, this process leads to uncertainty while the Executive Officer decides on the exemption delay request and burdens the fleet owner with unnecessary paperwork and engagement with the utility. Furthermore, the Draft ACF does not provide any relief if an infrastructure project takes more than one year. The fleet owner may have to shut down operations because they could not use their new ZEV/NZEV after the conclusion of the one-year exemption.

There is a stark disconnect between what stakeholders conveyed at a series of workshops in early 2022 concerning infrastructure and what is required in the Draft ACF. It appears that few of those concerns were taken into consideration or incorporated into the updated Draft ACF. In addition, at the April 2022 Board meeting, several board members expressed concern about the reality of infrastructure including development and availability. Furthermore, the Draft ACF regulation is not tied to any funding mechanism to build the required fleet infrastructure, thereby forcing the regulation as an unfunded mandate on fleet owners, subject to the limitations of existing state incentive programs.

Because infrastructure will be needed from day one, fleets owners should not be forced to purchase and deliver ZEVs and NZEVs unless the customer has means to build infrastructure BEFORE the purchase. We urge CARB to incorporate the following into the final ACF:

- Extend the Infrastructure Construction Delay Extension to no less than two years;
- Make the exemption applicable to both on-site private and public property construction delays. Not all parties have the means or capacity for on-site construction but may have made HD ZEV purchasing decisions contingent upon promised access to public infrastructure access
- Provide a funding mechanism so fleet owners can comply with the regulation; and,
- Not force fleet owners to first purchase a ZEV or NZEV before receiving approval for the infrastructure extension.

We also urge a transparent, quantitative process whereby extensions are not granted at the whim of the Executive Officer but based on a set of empirical and standardized criteria.

It is also important to convey that outreach for this regulation is lacking. As we work with our fleet partners, CARB has not been successful in their outreach efforts to engage stakeholders and affected parties. Considering the size, scope, and unprecedented nature of this proposed regulation, this coalition recommends that CARB post on their website a list of those entities for which CARB believes will be subject to the ACF rule.

Low NOx Vehicles Operated on Renewable Fuels Must Be Included

The Draft ACF as currently written supports new diesel purchases if ZEVs and NZEVs (as defined) are not available which is counter to the state's goals of eliminating harmful diesel exhaust known to cause cancer, reproductive harm and identified as the number one source of NOx pollution in our extreme non-attainment regions (South Coast and San Joaquin Valley). This is especially important for the beginning timeline of the ACF regulation because most exemptions will be granted due to the lack of HD ZEV availability, resulting in significant diesel truck purchases during this transitional period.

We support both ZEV and near-zero technologies to help meet the state's criteria air pollutant and greenhouse gas emissions goals. We want to see an effective Final ACF regulation adopted by CARB, but it must be reasonable, not strand assets, and address near-term emissions reductions that continue to impact California communities' health daily.

This regulation should be focused on how to motivate fleets to adopt HD ZEVs in good faith while recognizing the need for near-term flexibility. Absent commercially available HD ZEVs, the Draft ACF should be amended to include a strategy to incentivize vehicles with a low NOx engine operated on renewable fuels that significantly reduces carbon intensity and NOx.

The average carbon intensity value for all RNG sold and used for transportation in California for 2021 was -33.36 based on CARB data. This is the lowest carbon fuel for heavy-duty transportation available under the Low Carbon Fuel Standard. RNG use combined with low NOx 0.02g engines in heavy-duty transportation should be encouraged and be a core strategy to achieve the purpose of the regulation when ZEV and NZEV options are not commercially available. If only new vehicles can be ZEVs/NZEVs after January 1, 2024 – the near-term – and not low NOx, these vehicles will use only fuels that carry on average a positive carbon intensity versus a negative carbon intensity on average with RNG.

Therefore, considering the above discussion, we again present amendment options that we have previously presented to CARB as the easiest path to a flexible regulation focused on near-term emissions reductions and a prevention of diesel truck proliferation:

1. Amend NZEV definition to include 0.02g NOx engine;
2. "Omnibus Pull Forward" concept:
 - Any Omnibus powertrain certified to the Model Year 2027 standard would be eligible, which would include 0.02g NOx and below. This would expire prior to the 2027 calendar year and provide an incentive for powertrain manufacturers to potentially "pull forward" Model Year 2027 product early into California.
3. Amendment as previously submitted for waste management providers implementing SB 1383:
 - Using RNG in their own solid waste collection vehicles
 - Aligns with local government procurement requirements under the newly promulgated SB 1383 regulation
 - Supports CARB's short-lived climate pollutant strategy

Thank you for your time and consideration of our comments. We endeavor to be collaborative partners with CARB staff to ensure an effective and reasonable regulation that delivers real and measurable criteria air pollutant and greenhouse gas reductions.

Sincerely,

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