David Lax
Senior Policy Advisor
API
202-682-8479
lax@api.org

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Advanced Clean Fleets
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on Proposed Advanced Clean Fleets (ACF) Regulation

The American Petroleum Institute (API)[1] respectfully submits the following comments on the proposed "Advanced Clean Fleets" (ACF) regulation developed by the California Air Resources Board (CARB) for consideration at an upcoming public hearing on October 27, 2022.[2]

The oil and gas industry supports 1 million workers in California and contributes, directly and indirectly, over $199 billion to the state economy.[3] API members have invested billions of dollars in the production, supply and distribution of low carbon transportation fuels consistent with both federal and state fuels regulatory programs such as California Low Carbon Fuel Standard (LCFS). Our members with operations in California also employ vehicle fleets that include trucks and they are therefore directly impacted by the proposed rule.

API and its members commit to delivering solutions that improve air quality and help to reduce the risks of climate change while meeting society's growing energy needs. We support global action that drives greenhouse gas (GHG) emissions reductions and economic development. A federal policy with an economy-wide carbon pricing mechanism is the most efficient and transparent framework to address GHG emissions for the U.S. as a whole and for the state of California. Absent an economy-wide policy, a federal technology neutral framework of carbon intensity-based fuel requirements linked to new vehicle standards on a well-to-wheels basis provides a targeted, systems-focused approach to achieving significant GHG emissions inventory reductions from the transportation sector both nationwide and for California.

API offers the following comments for consideration:

Include Low-NO_x Trucks and Lower Carbon Intensity (CI) Fuels in the Proposed ACF Rule

Consistent with its desire to expeditiously achieve criteria air pollutant and greenhouse gas emissions reduction goals, CARB should include low-NO_x trucks (including natural gas and hydrogen powered internal combustion engines) and lower-carbon-intensity fuels (including renewable diesel, renewable natural gas and hydrogen) in the proposed ACF rule. Medium-, and heavy-duty vehicles (MHDV) are used in a wide variety of applications with a

[1] API represents all segments of America's natural gas and oil industry, which supports more than ten million U.S. jobs and is backed by a growing grassroots movement of millions of Americans. Our 600 members produce, process, and distribute the majority of the nation's energy, and participate in *API Energy Excellence®*, which is accelerating environmental and safety progress by fostering new technologies and transparent reporting. API was formed in 1919 as a standards-setting organization and has developed more than 700 standards to enhance operational and environmental safety, efficiency, and sustainability. *See www.api.org*.

[2] CARB, Notice of Public Hearing to Consider Proposed Advanced Clean Fleets Regulation, accessed 5 October 2022

[3] Price Waterhouse Cooper, *"Impacts of the Oil and Natural Gas Industry on the US Economy in 2019"* Prepared for American Petroleum Institute, July 2021

diverse set of equipment specifications and performance requirements which range from light to extremely demanding. A policy centered on a "one-technology-fits-all applications" approach could result in stranded investments and lost opportunities to achieve significant emissions reductions from in-use vehicles over the very ambitious 2024-2040 timeline that CARB requires for the fleet uptake of new zero emission MHDV.[4]

API members are making significant investments in new fuels and process technologies that reduce carbon emissions. Examples include:

- Stand-alone production and coprocessing of bio-feedstocks to make renewable fuels,
- Manufacturing of renewable natural gas from wastewater, landfill gas, and biodigesters at farms as fuel for CNG vehicles,
- Production of blue and green hydrogen for transportation and stationary applications including building infrastructure,
- Manufacturing of low carbon ethanol,
- Direct air carbon capture,
- Carbon capture and sequestration of CO_2, and
- Installation of electric vehicle charging stations.

As illustrated by the CARB LCFS program[5], lower-carbon intensity fuels such as renewable diesel, biodiesel, and renewable natural gas are being used today in existing diesel and CNG medium- and heavy-duty vehicles. Studies show that these lower-carbon fuel options can provide significant near-term GHG emissions reductions from the in-use fleet that will help drive California towards meeting its goals.[6] [7]

Include support of in-state production of blue and green hydrogen in the proposed rule

A majority of the existing California hydrogen fuel stations rely on hydrogen sourced from outside the state. As a mechanism to encourage expanded in-state supplies of low CI hydrogen to facilitate uptake of hydrogen fuel cell-equipped ZE MHDVs by "advanced clean fleets," CARB should allow hydrogen produced from renewable natural gas as well as the use of carbon capture and sequestration on hydrogen production units. Allowing producers the flexibility to produce low CI hydrogen from other sources is important during periods of drought when availability of hydrogen via electrolysis is limited. In addition, as California refineries transition to produce renewable transportation fuels, renewable propane, a by-product of the production processes for these fuels, could be utilized as another source of hydrogen.

A Full Lifecycle Greenhouse Gas Analysis for the Vehicle/Fuel System is Needed

A performance-based lifecycle well-to-wheels approach, combined with fuel carbon intensity reductions, provides a broad spectrum of industries that power the transportation system with incentives to reduce GHGs. When combined with an assessment of all technologies compared on an equal footing and considered within the framework of a fuel/vehicle pathway, the most effective solution to carbon emission reductions will be adopted and implemented.

[4] The California South Coast Air Quality Management District commented in April 2021 that the proposed rule did not meet the state's more immediate public health and welfare goals associated with the reduction of NOx and diesel particulate matter emissions and was more costly than a regulatory policy focused on the use of currently available technology.
[5] California Air Resources Board, LCFS Data Dashboard, Figure 2, accessed 6 October 2022
[6] American Transportation Research Institute, *Understanding the CO2 Impacts of Zero-Emission Trucks*, 3 May 2022
[7] Ramboll US Consulting, "Attachment D: *Multi-Technology Pathways To Achieve California's Greenhouse Gas Goals: Light-Duty Auto Case Study,"* May, 2022, appended to May 31, 2022 WSPA-AFPM-CIPA, Joint Comments to CARB on ACC II Regulation ISOR

It does not appear that CARB undertook this approach in either the ISOR or in the draft EA. CARB estimated the reductions in tailpipe GHG emissions from the proposed ACF regulation, but it did not fully account for the changes in upstream (well-to-tank) GHG emissions or the potential increases in vehicle cycle emissions that would occur. Vehicle cycle emissions are associated with vehicle material recovery and production, vehicle component fabrication, vehicle assembly, and vehicle disposal/recycling.[8] Failure to account for the full lifecycle GHG impacts, including increasing the incremental power demand sourced from the grid exchange, misrepresents the actual environmental effects of the proposed rule and could lead to incorrect conclusions.

CARB Should Define "Commercial Availability" for ZEVs and NZEVs in the Proposed Rule

The proposed ACF rule establishes ZEV purchase requirements for fleets, with the ultimate goal of requiring 100% ZEV purchases. While the proposed rule ostensibly includes exemption provisions to address ZEV unavailability and emergency response, these are in many ways arbitrary and impractical and do not adequately consider the duty cycles that may be required for some fleets that must sometimes operate in remote areas on difficult terrain and/or under emergency response conditions where safety issues become paramount.

If a ZEV is deemed "commercially available" by CARB, the proposed rule requires that the ZEV must be purchased instead of an internal combustion engine (ICE) vehicle. However, the ACF rule does not define or provide clear and robust criteria on what constitutes a commercially available ZEV. Instead, the determination of commercial availability is left solely to CARB's discretion. To address this issue, the ACF regulation should define "commercial availability" using criteria that address, at a minimum, whether: (a) the specific and required ZEV configuration is available for purchase and delivery in sufficient quantities and with satisfactory performance for its intended use , (b) the ZEV is available from multiple established manufacturers as a zero-emission powertrain certified model, and (c) the ZEV retail price is no more than a certain percentage greater than that of an ICE vehicle of the same configuration.

We appreciate this opportunity to provide comments and would be happy to discuss them in greater detail should you have any questions.

Sincerely,

Paul H Lax

[8] *See*, for example, Burnham, A. (2012). *Updated vehicle specifications in the GREET vehicle-cycle model*. Center for Transportation Research, Argonne National Laboratory. https://greet.es.anl.gov/publication-update-veh-specs