Elizabeth Bourbon
Sr. Managing Counsel

October 17, 2022

Submitted via the ISOR Comment Submittal Form

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

Re: Valero's Comments on Proposed Advanced Clean Fleets Regulation

Dear Chair Randolph:

The Valero family of companies (representing operating subsidiaries of Valero Energy Corporation – collectively "Valero") plays a significant role in the California fuel market. In addition to operating two petroleum refineries, Valero is one of the largest, if not the largest, producers of renewable diesel and other low carbon renewable fuels supplied into California. Using existing infrastructure, our renewable fuels are being used today by the current vehicle fleet to generate the lion's share of the actual GHG emission reductions that have been achieved from the California transportation sector under the California Low Carbon Fuel Standard. Currently, there are efforts underway to produce greater volumes of renewable fuels and to further reduce the carbon intensity of these fuels. With innovation in feedstocks and production processes and carbon capture opportunities, Valero's low-carbon liquid fuels have outperformed, and have the continuing potential to outperform, the mandated technology choice of CARB in its Advanced Clean Fleets proposal on a full life-cycle carbon intensity basis as well as on a cost basis.

Valero urges the California Air Resources Board (CARB) to reevaluate the Advanced Clean Fleets program. The proposed rule seems to have been outcome determinative, designed to meet the Governor's stated goal to electrify the transportation sector. This political goal appears to have foreclosed meaningful consideration of any low carbon option other than electrification – even if such options would achieve the same or better full life-cycle reductions earlier, at lower cost, and with greater energy security.

Valero appreciates the Board's consideration of the attached comments.

Respectfully yours,

Elizabeth Bourbon

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VALERO'S COMMENTS ON THE ADVANCED CLEAN FLEETS RULE

I. The proposed Advanced Clean Fleets rule is not necessary to meet emission reduction goals supported by California law.

The California Health and Safety Code requires that before a new rule is adopted, it must be deemed necessary to achieve a legitimate objective within the scope of an agency's authority.[1] The proposed Advanced Clean Fleets (ACF) rule arbitrarily and incorrectly presumes that electric vehicles (EV) and hydrogen fuel-cell vehicles (FCEV) offer the only way to achieve desired emission reductions for GHGs and criteria pollutants such as NOx. However, as detailed below, the draconian and costly vehicle replacement and purchase mandates set forth in the proposed ACF rule are neither the only nor the best way to achieve meaningful emissions reductions from the medium- and heavy-duty truck sector.

A. Utilizing a full lifecycle analysis is the most effective way to reduce greenhouse gas emissions

CARB has long recognized that evaluating the lifecycle emissions of fuels is the most accurate way to measure and reduce GHG emissions, but has chosen to implement this powerful GHG measure selectively, and unevenly, across the transportation sector. To the extent CARB seeks to achieve real reductions in GHG emissions, then it must consider the full lifecycle impact of all available technologies.

Renewable fuels have contributed significantly to California's success to date in reducing GHG emissions from the transportation sector, and liquid fuels producers are continuing to innovate to reduce GHG emissions from their products. CARB nevertheless appears poised to abandon the market-based incentive approaches that have been successful in the context of the Low Carbon Fuel Standard (LCFS) and Cap-and-Trade programs in favor of dictating the modes of transportation that may be used. By phasing out altogether the use of vehicles powered by liquid fuels rather than setting emission reduction targets and creating a framework for different technologies to compete to achieve these goals, the proposed Advanced Clean Fleets regulation would reduce flexibility, undermine existing incentives for technological innovation in carbon or criteria pollutant reduction measures, and constrain consumer choice, all while imposing tremendous costs on fleet owners as well as on customers of goods throughout the United States.

On June 14, 2022, the U.S. Department of Energy (DOE) released the results of a six-year initiative that provides a national roadmap for alternative ways to reduce GHG emissions from the transportation sectors as electric vehicles slowly phase in.[2] This initiative involved approximately 140 experts including 100 from nine U.S. DOE laboratories, two representatives from CARB, and an additional 40 experts from industry and universities. The report states that "numerous breakthroughs" were made "with the potential to dramatically improve the

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[1] Cal. Health and Safety Code § 40727.

[2] U.S. DOE, Office of Energy Efficiency & Renewable Energy, "Co-Optimization of Fuels & Engines: The Road Ahead Toward a Net-Zero-Carbon Transportation Future" (June 14, 2022), https://www.energy.gov/eere/bioenergy/articles/co-optima-findings-impact-report

performance of ICE vehicles" and that the researchers also "identified new low-emission, high-efficiency fuel-engine combinations for light-duty (LD), medium-duty (MD), and heavy-duty (HD) vehicles, using innovative methods and tools to expand understanding of combustion and fuel properties." Moreover, "findings reveal potential for dramatic improvements in vehicle fuel economy and increases in the use of domestically sourced bio-based fuel for transportation, along with steep emissions reductions. This, in turn, has the potential to create new jobs and keep energy dollars in the United States, while decreasing costs for consumers and commercial operators at the pump. But most importantly, it holds promise for making a meaningful difference in the fight against climate change." "All top-performing blendstock candidates were shown to reduce lifecycle GHG emissions by at least 50%," "have the potential to be produced at a commercial scale," "delivered reductions in harmful particulate criteria emissions," and further "enabled changes in engine operation that reduced nitrogen oxide production." Detailed results are documented in more than 250 peer-reviewed journal articles, conference papers, and technical reports.

B. Existing drop-in fuel and internal combustion engines achieve greater emissions reductions compared to CARB's defined ZEVs while commercially available and widely in use today.

In CARB's Draft Scoping Plan, CARB projected 390,000–1.5 million medium- and heavy-duty BEVs, and 130,000–600,000 medium- and heavy-duty FCEVs by 2035;[3] an ambitious projection, when at end Q2 2022, the total combined medium- and heavy-duty "ZEVs" on Californian roads numbered 1,943, of which only 61 were FCEVs.[4] Based on CARB's projected range, the current California "ZEV" medium- and heavy-duty fleet is 0.1–0.5% of CARB's projected "ZEV" fleet. The total ZEV fleet, including light-, medium-, and heavy-duty vehicles, consumed a combined approximately 149 million gasoline gallon equivalents in 2021.[5]

The size of California's existing medium- and heavy-duty fleet and the concomitant fuel consumption underscores the full scale of the problem that CARB's approach in the Advanced Clean Fleets regulation will create. In 2021, California consumed approximately 2.5 billion gallons of diesel fuel.[6] The existing medium- and heavy-duty fleet and fuel consumption dwarf the growth seen in electric vehicles or FCEV sales to date. While the scale of the problem might seem daunting, market-based principles have already developed an immediate and workable solution that is in use today: renewable diesel and other biomass-based liquid fuels. Yet CARB's approach in the proposed regulation would sacrifice real emissions reductions today in order to achieve arbitrary policy objectives to "lead the transition away from petroleum fuel and towards electric drivetrains" and to "enhance widespread ZEV deployment"[7] based on the false and unsupported premise that ICE vehicles cannot achieve the same or better standard of performance as ZEV, notwithstanding numerous promising developments in carbon capture and other innovations in emission reduction technologies.

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[3] CARB, *Draft 2022 Scoping Plan Update*, *AB 32 GHG Inventory Sectors Modeling Data Spreadsheet*

[4] CEC, https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics/medium-and-heavy

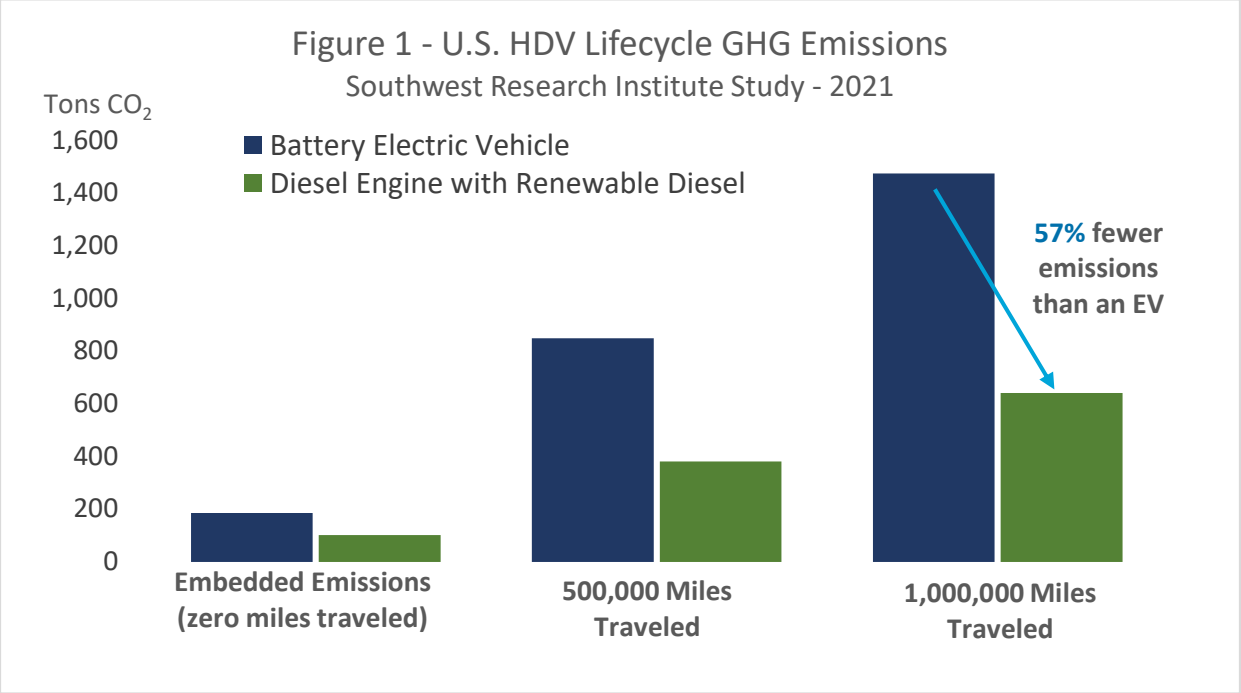
[5] CARB, *LCFS Data Dashboard, Quarterly Summary*

[6] *Id.*

[7] CARB, *Advanced Clean Fleets Rule Initial Statement of Reasons* at 2.

When existing production capacity and announced projects are accounted for, projected volumes of renewable diesel are enough to replace 100% of the California diesel market. Renewable diesel can also utilize existing infrastructure (i.e., pipelines, terminals, and retail distribution supply chains), resulting in lower economic investments and avoiding additional greenhouse gas emissions when compared against a buildout of new EV charging and hydrogen fueling infrastructure. Renewable diesel can even be used a petroleum diesel substitute to address a number of hard to decarbonize market segments where BEV and FCEV technologies are challenged, including the fleet segments CARB has targeted in the regulation.

A lifecycle analysis conducted by Southwest Research Institute finds that GHG emissions from a heavy-duty vehicle that runs on renewable diesel with a carbon intensity of 25 gCO_2e/MJ results in 57% fewer lifecycle GHG emissions when compared to a BEV, as illustrated on the next page in Figure 1. If CARB's true goal is to reduce GHG emissions rather than advancing electrification for electrification's sake, then it must consider the full lifecycle impact of all available technologies, and the market availability of the fuels that will power the vehicles.



II. CARB Must Perform an Adequate Assessment of Economic Impacts Resulting From Its ZEV Mandates.

CARB's limited assessment of economic impacts resulting from the forced transition of the medium- and heavy-duty transportation sector fails to meet applicable legal standards requiring comprehensive assessment of economic impacts, resulting in an

ISOR that grossly underestimates the economic impacts of this unprecedented action. There are various provisions of the California Administrative Procedures Act ("APA") and the California Health & Safety Code ("HSC") that require CARB to consider the economic impacts associated with any rulemaking proposal.[8] Together, these provisions establish a broad requirement for CARB to consider potential impacts to California's workers, businesses, and greater economy.[9] By conducting an insufficient economic analysis, CARB fails to comply with these mandates.

Specifically, the APA and HSC require CARB to assess:

- HSC §§ 43101, 43018.5 and APA § 11346.3—Impacts to the state's economy, including specific evaluation of the following.
    - The creation of jobs within the state;
    - The creation of new businesses or the elimination of existing businesses within the state;
    - The expansion of businesses currently doing business within the state;
    - The ability of businesses in the state to compete with businesses in other states;
    - The ability of the state to maintain and attract businesses in communities with the most significant exposure to air contaminants, localized air contaminants, or both, including, but not limited to, communities with minority populations or low-income populations, or both;
    - The automobile workers and affiliated businesses in the state;
    - The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.
- HSC § 57005—Less costly but equally effective alternatives to ACC II.
- APA § 11346.5(a)(7)—Adverse economic impacts on California business enterprises and individuals, including the ability of California businesses to compete with businesses in other states.
- APA § 11346.5(a)(7)(A)—The specific types of businesses that would be affected by the proposal.
- HSC § 38562(b)(8)—The potential for leakage.

[8] *See e.g.,* APA § 11346.3, 11346.5; HSC § 43101, 43018.5.

[9] *See John R. Lawson Rock & Oil, Inc. v. State Air Res. Bd*., 20 Cal. App. 5th 77, 112 (2018) (supporting a "broad reading of the required analysis").

While the ISOR is a preliminary assessment, this assessment must still take into account fact-based analysis based on information and impacts currently known to CARB.[10] Importantly, this analysis cannot "ignore evidence of impacts to specific segments of businesses already doing business in California"— as a recent decision emphasized, "[i]f the Board's proposed regulatory amendments place the state's thumb on the scale for one group of in-state businesses over another, it need[s] to consider that impact."[11]

The analysis presented in the ISOR and SRIA is deficient in several respects. First, although CARB acknowledges that the capital investment required for fleet owners to purchase new ZE vehicles is significantly greater than the cost to replace current ICE vehicles, the analysis nevertheless projects eventual cost savings for fleet owners based on CARB's unsupported speculation that vehicle owners will realize income from LCFS credits. No analysis is provided to support these speculative values.

Second, CARB provides no or only superficial consideration of competitive impacts to oil and gas production and refinery businesses in the state and the numerous other businesses related to the petroleum industry (e.g., truck stops, parts stores, storage terminals, asphalt production, petrochemicals, lubrication facilities, and others). After designing the California Low Carbon Fuel Standard to incentivize investment in production of renewable diesel and other low-carbon renewable fuels, CARB now fails to consider impacts on these industries as a result of forcing vehicles that use these fuels out of the market.

Further, CARB fails to consider the leakage potential of the ACF rule. As required by HSC § 38562(b)(8), CARB must analyze the potential for emission reduction activities in the state to be offset by an equivalent or greater increase in emissions of GHGs outside the state. This analysis necessarily requires estimating emissions impacts outside the state, which CARB has failed to do. Specifically, CARB fails to account for the economic and emissions consequences that would occur if disadvantages to California oil and gas production, refining, and renewable fuel businesses ultimately result in greater reliance on imports to meet remaining demand for non-transportation fuels impaired by this rulemaking and/or for residual transportation fuel demand. Similarly, CARB does not consider the likelihood that older ICE vehicles compelled to be taken out of service in California will continue to be used out of state and potentially outside the United States, where they are less likely to combust fuels that are subject to a low-carbon fuel standard.

Finally, despite CARB's access to ample information related to the economic impacts of electrification and existing strains on California's grid, CARB has failed to address these impacts, constraining its analysis to a narrow consideration of direct costs to fleet owners associated with vehicle purchase, fuel costs, maintenance, and an unsupported the like. CARB's SRIA projects a net cost savings based in part on unsupported assumptions regarding projected LCFS revenue, and fails to account for extensive economic impacts stemming from the electrification of the transportation sector, discussed

[10] *See California Assn. of Med. Prod. Suppliers v. Maxwell-Jolly*, 199 Cal. App. 4th 286, 304–05 (2011); *W. States Petroleum Assn. v. Bd. of Equalization*, 57 Cal. 4th 401, 428 (2013).

[11] *John R. Lawson Rock & Oil, Inc. v. State Air Res. Bd*., 20 Cal. App. 5th 77, 112 (2018).

in detail below. This assessment is therefore insufficient to fulfill CARB's legal duty to broadly consider economic impacts.

III. Technological Feasibility

The transition of a transportation system as large and complex as California's to a new technology is a massive undertaking, requiring the establishment of new manufacturing, assembly, and supply chains; build-out of new charging and fueling infrastructure; interface with public utilities; re-conception of fuel distribution logistics; and end-of-life resource recovery strategies (e.g., efficient battery recycling). California is pursuing this undertaking not once, but twice, simultaneously, with independent and unrelated technologies. Since neither BEVs nor FCEVs are sufficient to fully replace the ICE, the timing and degree of coordination between the deployment of each medium- and heavy-duty BEVs and FCEVs and the retirement of medium- and heavy-duty internal combustion engines and the associated infrastructure will be critical to the success of the transition. Many of the variables that require careful coordination are outside of California's sphere of control, and great potential exists for the transition not to occur as CARB plans it. CARB must consider the consequences of its actions on the statewide transportation sector, including: the compatibility of vehicle technology with use, charging and fueling infrastructure, raw material and supply chain vulnerabilities attendant with ZEVs, and impacts to cross-state transport.

A. BEVs and FCEVs are not interchangeable with the existing medium- and heavy-duty vehicle fleet.

The shortcoming of each the electric vehicle and fuel cell vehicle technologies is that neither one is compatible today with the full range of use, duty and demand posed by California's MD/HD transportation sectors, and therefore neither one is suitable to replace the ICEV and adequately serve the state's freight and transit needs. For example:

- The current BEV technology is not suitable for long-haul trucks. Considering the present lithium-ion battery technology, to achieve a range of 600 miles, a battery pack on a long-haul truck would need to store 1,200 kilowatt-hours (kWh) of energy, weigh 6,300 kilograms (13,900 pounds), have a volume of 2,700 liters (95 cubic feet), and cost about $180,000.[12]

    - Due to federal weight constraints for tractor trailers, a long-haul BEV truck would lose 20% of payload capacity compared with a diesel truck, reducing the available revenue per mile and increasing the number of trucks needed to avoid delay or interruption of California's statewide freight services.[13]

[12] Assumes a battery pack energy density of 170 Wh/kg. Burke, Andrew, "Assessment of Requirements, Costs, and Benefits of Providing Charging Facilities for Battery-Electric Heavy-Duty Trucks at Safety Roadside Rest Areas: A Research Report from the National Center for Sustainable Transportation," (Feb 2022), page i.

[13] Based on a federal maximum loaded weight of 36,000 kg, on a tractor weighing 8,600 kg and compared to a tractor carrying 965 kilograms (300 gallons) of diesel fuel. *Id* at 4 and 15.

- At a range of 150 miles, a long-haul BEV truck would need to stop three time to recharge over a 600-mile day. Even if a network of 350-kilowatt (kW) fast-chargers was widely available, charging time would reduce a driver's effective work day by over 2 hours, further requiring an increase in the number of trucks of to maintain the pace and demand of freight services.[14]

- The current FCEV technology facilitates larger and heavier vehicles due to its higher energy storage capacity than EVs, and it offers drivers a refueling experience much like conventional vehicles, with the fuel tank capable of being refilled in a matter of minutes. However, adoption of the technology and particularly commitment to developing fueling infrastructure has been limited within the U.S. – currently the U.S. has 48 active FCEV hydrogen fueling stations, of which 47 are in California and one in Hawaii.[15] Any adoption of MD/HD FCEV in California would realistically be limited to use within California, and specifically to a limited range around the San Francisco, Los Angeles and Sacramento metropolitan areas (which account for 44 of the hydrogen charging stations in California).

B. Significant investments in charging/fueling infrastructure will be needed.

CEC has projected that an additional 157,000 chargers will be needed to support California's anticipated MD/HD EV population in 2030 – all of these will be DC fast chargers, representing 9,100 additional job-years of dedicated workforce requirements,[16,17] compounding timeline feasibility challenges.

CEC further projects that the MD/HDV charging network will see loads "in excess of 2,000 MW around 5 p.m. on a typical workday," further exacerbating the existing gap between net peak energy demand and existing generation.[18]

C. A rapid transition to BEVs and FCEV risks raw material shortages and supply chain vulnerabilities from geopolitical rivals.

There is a mismatch between California's MD/HD EV target and the availability of critical minerals essential to realizing its target.[19] Results have shown that "mass electrification of the heavy-duty segment on top of the light-duty segment would substantially increase the lithium demand and impose further strain on the global lithium supply."[20] The significant impact

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[14] Based on the Volvo Class 8 Box truck, having a range of 150 miles and an energy capacity of 1.75 kWh/mi. *Id.* at 3.

[15] U.S. DOE Alternative Fuels Data Center, Hydrogen Fueling Station Locations, https://afdc.energy.gov/fuels/hydrogen_locations.html#/analyze?region=US-CA&fuel=HY&country=US

[16] CEC, Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment Analyzing Charging Needs to Support ZEVs in 2030, 19-AB-2127 at 1 and 6 (July 14, 2021), https://www.energy.ca.gov/programs-and-topics/programs/electric-vehicle-charging-infrastructure-assessment-ab-2127

[17] Carr, Edward; Winebrake, James; Winebrake, Samuel, "Workforce Projections to Support Battery Electric Vehicle Charging Infrastructure Installation," June 8, 2021.

[18] *Id.* at 6.

[19] IEA, World Energy Outlook Special Report – The Role of Critical Minerals in Clean Energy Transitions (Revised March 2022), https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf.

[20] Hao, H., Geng, Y., Tate, J.E. *et al.* Impact of transport electrification on critical metal sustainability with a focus on the heavy-duty segment. *Nat Commun* 10, 5398 (2019). https://doi.org/10.1038/s41467-019-13400-1

is attributed to the large single-vehicle battery capacity required by HDV and the expected battery replacement needed within the lifetime of HDV.[21] Specifically, "[t]he results suggest that global lithium resources will not be able to sustain simultaneous mass electrification of both the LDV and HDV segments."[22] Because the electrification in the LDV segment has already imposed significant strains on the global lithium supply, further mass electrification in the HDV segment, which is expected to increase the accumulated net demand by 29% to 53%, would come with risks.[23] Even if electric HDVs gain a technoeconomic advantage over other powertrain technologies and achieve market success in the short term, their long-term development is likely to face resource constraints with a reflected surge in lithium prices.[24] It is therefore "recommended that both the government and vehicle manufacturers should carefully consider the ambitious promotion of vehicle electrification in the heavy-duty segment."[25]

D. CARB Must Consider Grid Reliability Impacts from the Electrification of the MD/HD Transportation Sector.

As part of its evaluation of potential economic impacts to the welfare of California residents and in-state businesses, CARB must assess grid reliability impacts stemming from ACF's forced electrification of much of the transportation sector.

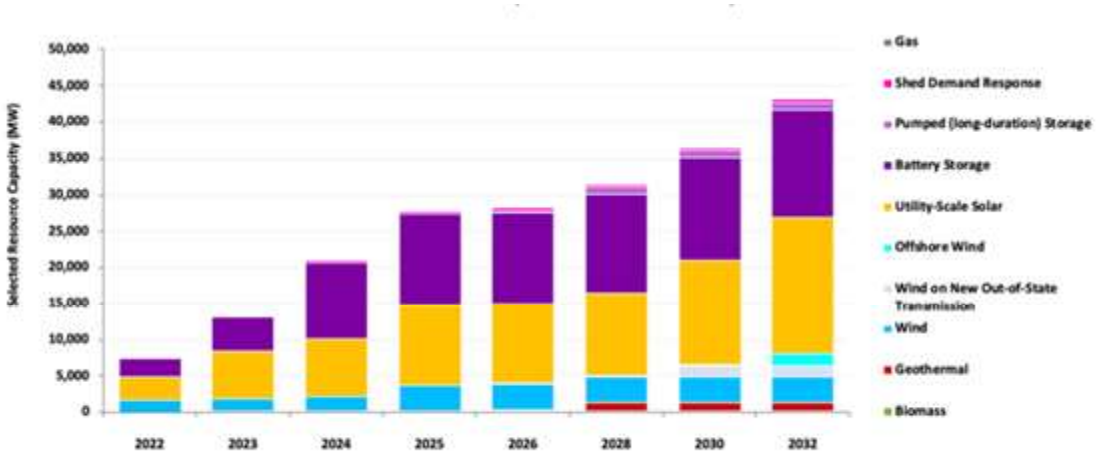
Together with ACC II and other CARB rulemakings, the ACF rule will intensify California's current supply challenges by exponentially increasing demand for electricity in California. The accelerated buildout of California's electrical grid will itself have public health consequences for local communities. California has 25,526 miles of higher voltage transmission lines, and 239,557 miles of distribution lines[26]—enough to stretch from the Earth to the moon. Additional electrical infrastructure will need to be introduced into the environment as a result of increasing demand for reliable and renewable energy supplies under ACF. The electrical buildout required will have considerable impacts on communities living in proximity to visual intrusion (for overhead power lines), noise and a reduction of property values, along with potential health risks associated with the increased likelihood of wildfires and exposure to electromagnetic fields. Disadvantaged communities will bear the burden of living in close proximity to California's expanding grid, containing high-voltage transmission and power lines as well as battery storage technologies prone to thermal runaway, which can trigger releases of toxic and explosive gasses while also starting fires that impact neighboring cells. Above-ground power lines expose those nearby to the risk of electrocution and electric shock injury due to downed or faulty power wires and defective equipment. Storms and trees routinely knock down cables and natural elements cause deterioration of inadequately maintained infrastructure. These dangerous conditions lead to deaths, injuries, and heightened wildfire risk. California's rural and low-income stakeholders would also bear the risk of any medical unknowns. Claims about health effects from exposure to magnetic fields have been made since the late

[21] *Id.*
[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] *Id.*
[26] "*Why not bury California's fire-prone power lines underground? The reason is sky high*", Janel Wilson, - Oct. 11, 2019.

1970s.[27] Pooled analyses showed a small but consistent association between childhood leukemia and living near an overhead power line, and led to renewed attention for the potential health risks of power lines.[28] A 2007 report by the World Health Organization concluded that when it comes to the link between power lines and childhood leukemia "…on balance, the evidence is not strong enough to be considered causal, but sufficiently strong to remain a concern".[29]

While securing additional generation capacity will mitigate some of these supply challenges, overreliance on renewable generation may exacerbate existing shortages, particularly during early evening hours. The California Public Utility Commission's ("CPUC") recently adopted Integrated Resource Plan for 2018-2020 demonstrates that substantial new resource capacity will be required to support accelerated electrification.[30] The CPUC's preferred portfolio for electricity generation heavily relies on substantial scale-up of renewable resources that already face reliability challenges:

New Resource Buildout Based on CPUC's Preferred Portfolio[31]



By 2026, the CPUC must plan for a new resource buildout of 28,154 MW, climbing to 43,131 MW by 2032.[32] Nearly half of this capacity depends on battery storage, for which feasibility has not been demonstrated, and the majority of the remaining capacity is supplied by

[27] Wertheimer N, Leeper E: Electrical wiring configurations and childhood-cancer. Am J Epidemiol. 1979, 109: 273-284.

[28] Ahlbom A, Day N, Feychting M, Roman E, Skinner J, Dockerty J, Linet M, McBride M, Michaelis J, Olsen JH, Tynes T, Verkasalo PK: A pooled analysis of magnetic fields and childhood leukaemia. Br J Cancer. 2000, 83: 692-698. 10.1054/bjoc.2000.1376; Greenland S, Sheppard AR, Kaune WT, Poole C, Kelsh MA: A pooled analysis of magnetic fields, wire codes, and childhood leukemia. Epidemiology. 2000, 11: 624-634. 10.1097/00001648-200011000-00003.

[29] World Health Organization. Extremely Low Frequency Fields. Switzerland: WHO press; 2007, p. 12.

[30] CPUC, Order Instituting Rulemaking to Continue Electric Integrated Resource Planning and Related Procurement Processes, Decision No. 22-02-004 (Feb. 10, 2022), https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M451/K412/451412947.PDF.

[31] *Id.* at 87.

[32] *Id.*

utility-scale solar, which also involves significant feasibility concerns.[33] Battery storage at this scale would result in significant additional demand for critical minerals, increasing consumers' costs for both electricity and for electric vehicles. And with increasing reliance on solar and wind generation, California also faces reliability hazards due to power inverters that serve solar and wind farms not being able to "ride-through" short-term disturbances, as occurred in California on four separate occasions between June and August 2021.[34] CARB has failed to include *any* assessment of these reliability challenges, despite its legal duty to do so.[35]

E. CARB's proposal will impact interstate transport.

By imposing restriction on freight vehicles travelling across state lines, the Advanced Clean Fleets regulation would restrict the movement of goods in the United States. Road freight plays a vital role in the economic growth of our country and is an important and ongoing component of the transportation planning processes in the United States as the interstate transport of goods impacts the national economy and qualify-of-life standards. Despite the nationwide impacts that California's MD/HDV benchmarks would have, the availability of out-of-state charging infrastructure and support for electric and fuel cell MD/HDVs outside of California is outside CARB's control or influence. CARB fails to assess or address impacts to its own economy, much less the national economy, as a result of one state accelerating electric and fuel cell freight transport that would cease to be reliable or functional outside its geographically confined network of charging infrastructure and support systems. In particular, CARB does not address how consumers will be impacted by higher costs of food and goods as the costs of replacing existing vehicles with ZEVs are passed through to customers. Nor does CARB recognize, much less attempt to quantify, the economic impact of supply-chain disruptions and bottlenecks likely to occur if fleet owners are forced to retire their existing vehicles before they can procure ZE replacements and if fleet owners acquire ZEV vehicles that are not supported by adequate infrastructure outside the State.

IV. Medium- and heavy-duty "ZEVs" are not cost-efficient investments for fleet operators compared to internal combustion engines.

The lack of cost-parity between conventional and emerging medium- and heavy-duty vehicle technologies is a significant barrier to California's ZEV fleet ambitions. The choice of commercial trucks and buses is driven by function and cost. Total costs of ownership of medium-

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[33] *See id.*

[34] Behr, Peter and Plautz, Jason, *Grid monitor warns of U.S. blackouts in 'sobering report'* , E&E News (May 19, 2022) and North American Electric Reliability Corporation *2022 Summary Reliability Assessment* (May 2022)

[35] CARB similarly does not consider the magnitude of out-of-state emission increased from increased electricity generation. In 2021, California was the fourth-largest electricity producer in the nation, but the state was also the nation's second-largest consumer of electricity, and in 2020, it received about 30% of its electricity supply from generating facilities outside of California, including imports from Mexico. *See* U.S. Energy Administration, *State Profile and Energy Estimates*, available at: https://www.eia.gov/state/?sid=CA. As recently as 2020, WECC included 30 gigawatts of coal-fired generation resources, and is expected to continue to contain 16 gigawatts by 2030. WECC, *The Western Assessment of Resource Adequacy Report*, 23 (Dec. 18, 2020), https://www.wecc.org/Administrative/Western%20Assessment%20of%20Resource%20Adequacy%20Report%202020201218.pdf. Given California's reliance on imported power, CARB must evaluate the emission impact from increased demand for electricity generated out of state.

and heavy-duty vehicles includes both the capital expense to purchase the vehicle and operating costs either over the vehicle lifetime or ownership period. Electric and fuel cell medium- and heavy-duty vehicles require higher upfront costs than their internal combustion engine counterparts.[36] Although CARB speculates that these costs will decrease in the future, no support is offered for this proposition, nor does CARB acknowledge the potential for significant price increases in vehicles that rely on batteries requiring scarce minerals. Vehicle costs are often too high for the MD/HDV payback period (the length of time required for an investment to recover its upfront costs).[37] Battery packs for MD/HDVs must also be specifically suited for high lifetime mileage, deeper discharges per cycle, overall ruggedness, resistance to temperature extremes, and for production at low sales volumes. These characteristics push costs for MD/HDV battery packs toward the uppermost end of cost-range. The relatively high daily range needed by commercial vehicles results in battery costs that drive vehicle incremental costs as high as 50%–100% of the price of a conventional truck.[38]

In addition to requiring bigger batteries, batteries used for medium- and heavy-duty vehicles are required to be different than those used in light-duty vehicles—merely scaling designs and technology from LDVs will be insufficient. The life expectancy of a heavy-duty truck is about fourteen years or 1 million miles, which is traveled over more demanding duty cycles.[39] Medium- and heavy-duty components are required to be more durable, and the vehicles themselves consume more energy and require more horsepower, with greater electrical power flowing to and from the battery. Because medium- and heavy-duty vehicles travel longer daily distances and have greater mile per energy demands than light-duty vehicles, greater battery capabilities and charging rates are needed on medium- and heavy-duty vehicle BEVs when compared to light-duty electric vehicles. [40]

Along with their higher upfront capital expenditure, electric MD/HDVs also must contend with electricity price projections, where utility demand charges are difficult to determine and electricity costs carry uncertainties such as whether there will be additional costs for trained personnel to operate a high-powered fast charging system. According to an Atlas Public Policy report, "[r]elying on public charging networks to charge medium- and heavy-duty EVs was not a viable option due to the high cost of charging."[41] Further, 2020 market prices "were high enough that EVs were more expensive to fuel on a per-mile basis than their diesel counterparts."[42] The battery payback period is also highly sensitive to not only battery life and replacement, but electricity price as well. And commercial and industrial electricity rate structures are not aligned to MD/HDV charging needs. The substantial electricity demand requirements of MD/HDVs coupled with limited downtime to charge larger class vehicles greatly reduces any financial savings associated with electricity, if they exist at all, over diesel based on current rates.

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[36] ISOR at 159.

[37] U.S. DOE, "Medium- and Heavy-Duty Vehicle Electrification: An Assessment of Technology and Knowledge Gaps," at 35 (December 2019), https://info.ornl.gov/sites/publications/Files/Pub136575.pdf/.

[38] *Id.* at 24.

[39] *Id.*

[40] Forrest, K., Mac Kinnon, M., Tarroja, B., & Samuelsen, S. (2020). Estimating the technical feasibility of fuel cell and battery electric vehicles for the medium and heavy duty sectors in California. Applied 59 energy, 276, 115439, doi: 10.1016/j.apenergy.2020.115439 http://dx.doi.org/10.1016/j.apenergy.2020.115439.

[41] Satterfield, Charles and Nigro, Nick, "Assessing Financial Barriers to Adoption of Electric Trucks," (February 2020), https://atlaspolicy.com/wp-content/uploads/2020/02/Assessing-Financial-Barriers-to-Adoption-of-Electric-Trucks.pdf

[42] *Id.*

The North American Council on Freight Efficiency (NACFE) assessed EV total costs of ownership from the fleet owner perspective for the U.S. medium-duty market.[43] They concluded that, while electric trucks are a viable option in several operations, they are not the solution for every application and there are still a large number of unknowns. These uncertainties include economic, regulatory, and electric power issues, but key unknowns arise from the relative immaturity of the technology. Significantly, there is "insufficient field data to establish a baseline for comparison against alternative truck types," including maintenance and repair costs, battery and vehicle expected lifetime, and vehicle residual value.[44] Each unknown represents a risk for fleet owners.[45] Long term data has yet to confirm actual savings realized by medium and heavy-duty ZEVs.

MD/HD FCEVs are similarly less cost-effective than ICEV utilizing low-carbon liquid fuels or on-board carbon capture technology. Per CARB's own estimate, final capital costs for a hydrogen fuel cell Class 8, day cab tractor used in regional operation[46] were $629,189 in 2018 compared with $134,000 for an analogous diesel vehicle.[47]

In 2024, CARB estimates that a hydrogen fuel cell tractor truck will cost $431,480 compared to $144,101 for a new diesel tractor.[48] Consistent with CARB's estimates, the International Council on Clean Transportation (ICCT) recently forecast that composition costs for a hydrogen fuel cell tractor-truck in 2025 will exceed $400,000.[49] CARB has also recognized that operating costs for a regional-hydrogen tractor in 2024 will exceed those for tractor trucks powered by diesel or battery electric.[50]

Analysis from a Northwestern University research team has shown that cost-effective diesel tractor trucks combined with well-developed on-board carbon capture technologies offer a practical way to make large freight vehicles carbon neutral when running on fossil fuels and even carbon negative when running on biofuels.[51] Given existing liquid fuel infrastructure, "rapid adoption of such vehicles should be possible and CO2 emissions can be continuously decreased."[52]

By contrast, major hydrogen production and distribution infrastructure will need to be put in place before FCEV are even serviceable.[53] "[A]nalysis [also] suggests that the infrastructure for the hydrogen pathway is generally costlier than battery electric," with hydrogen transport

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[43] https://nacfe.org/emerging-technology/medium-duty-electric-trucks-cost-of-ownership/

[44] *Id.*

[45] *See id.*

[46] CARB, Appendix H: Draft Advanced Clean Trucks Total Cost of Ownership Discussion Document at 1 (October 22, 2019) https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/apph.pdf.

[47] *Id.* at 9.

[48] *Id.*

[49] Sharpe, Ben & Basama, Hussein, The International Council on Clean Transportation (ICCT) Working Paper 2022-09, "A meta-study of purchase costs for zero-emission trucks" at 12 (February 2022), https://theicct.org/wp-content/uploads/2022/02/purchase-cost-ze-trucks-feb22-1.pdf.

[50] *Id.* at 10.

[51] Schmauss, Travis A. & Barnett, Scott A, "Viability of Vehicles Utilizing On-Board CO2 Capture," ACS Energy Letters 2021, 6, 8, 3180-3184 (August 18, 2021) https://doi.org/10.1021/acsenergylett.1c01426.

[52] *Id.*

[53] *Id.*

facing "the largest cost-penalty in the near-term."[54] It is estimated that the capital cost for a single hydrogen filling station is $1.5 to $2.0 million.[55] Moreover, there are currently no hydrogen fuel cell tractor-trucks commercially available in North America or Europe to confirm their true cost or economic viability.[56]

V. CARB Does Not Adequately Consider Feasible Alternatives or the Full Range of Environmental Impacts.

CARB's Draft Environmental Analysis ("EA") does not meet requirements under the California Environmental Quality Act ("CEQA") because it (1) fails to consider low-carbon fuel and engine technologies as feasible alternatives and (2) ignores a number of potentially significant environmental impacts.

A. The Environmental Analysis Must Consider Low-Carbon Fuel and Engine Technologies as Alternatives.

CARB's Environmental Analysis summarily rejects any alternative that does not meet the Governor's conclusory directive to accelerate adoption of EV and FCEV. However, CEQA demands that CARB consider a reasonable range of alternatives, including "*alternatives that are proposed as less burdensome and equally effective* in achieving the purposes of the regulation in a manner that ensures full compliance with the authorizing statute or other law being implemented or made specific by the proposed regulation."[57] This aligns with the California Environmental Quality Act ("CEQA") Guidelines, which also specify that CARB must consider a reasonable range of alternatives that "shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects."[58] The CEQA Guidelines define "feasible" as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors."[59] Specifically, when considering the feasibility of alternatives, the CEQA Guidelines provide the following factors to consider: "economic viability, availability of infrastructure, general plan consistency, other plans, or regulatory limitations, [and] jurisdictional boundaries."[60]

Importantly, CARB is prohibited from predetermining a particular method in order to narrow the alternatives it considers for achieving the agency's ultimate policy goals. When examining whether or not alternatives or particular features have been foreclosed by

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[54] *Id.*

[55] For stations built between 2015 and 2017 for 400-500 kg/day. California Hydrogen Business Council, "Hydrogen FAQs," https://californiahydrogen.org/resources/hydrogen-faq/#:~:text=Capital%20costs%20in%20California%2C%20where,early%20(2013)%20market%20fueling., accessed June 23, 2022.

[56] Sharpe, Ben & Basama, Hussein, ICCT Working Paper 2022-09, "A meta-study of purchase costs for zero-emission trucks" at 12 (February 2022), https://theicct.org/wp-content/uploads/2022/02/purchase-cost-ze-trucks-feb22-1.pdf.

[57] California Government Code § 11346.2(b)(4)(A).

[58] Cal. Code Regs. tit. 14, § 15126.6(c).

[59] *Id.* § 21061.1; *Bay Area Citizens v. Ass'n of Bay Area Governments*, 248 Cal. App. 4th 966, 1018 (2016).

[60] Cal. Code Regs. tit. 14, § 15126.6(f)(1).

> the agency, courts look "to the surrounding circumstances to determine whether, as a practical matter, the agency has committed itself to the project as a whole or to any particular features, so as to effectively preclude any alternatives or mitigation measures that CEQA would otherwise require to be considered."[61]

CARB states that its evaluation of reasonable alternatives to the proposed rule concluded that no alternative proposed was found to be less burdensome and equally effective in achieving the purposes of the regulation.[62] However, some of the objectives CARB identifies as the basis for rejecting reasonable alternatives to the proposed rule have no support in California law; rather, they derive from the policy preferences articulated in Executive Orders issued by the Governor and CARB's own policy bias. For instance, Objective 6 ("Lead the transition of California's medium- and heavy-duty transportation sector from internal combustion engines to ZE technology…") is based only on Executive Order N-79-20 and CARB Resolution 20-19; Objective 8 ("Incentivize and support emerging ZE technology that will be needed to achieve CARB's SIP goals") lacks any basis other than staff's conclusory statements that these technologies- and only these technologies – will contribute to meeting SIP goals; and Objective 10 ("Provide market certainties for ZE technologies and fueling infrastructure to guide the acceleration of the development of environmentally superior medium- and heavy-duty vehicles…") similarly derives from CARB's policy preference but lacks any statutory support.

It is therefore unreasonable and inconsistent with CARB's obligations under CEQA to summarily reject reasonable alternatives such as the "Cleaner Combustion" approach advocated by the California Council for Economic and Environmental Balance ("CCEEB") on the basis that it does nothing to advance CARB's policy preference to force adoption of BEV and FCEV technologies. Further, CARB incorrectly asserts that the "Cleaner Combustion" alternative will not result in GHG reductions equivalent to those sought in the proposed rule, overlooking the potential for on-board carbon filtration and capture systems to be installed quickly and at low cost on medium-and heavy-duty vehicles. CARB failed to consider whether engines meeting the Heavy-Duty Omnibus Standard (thus achieving 90% NOx reductions) equipped with on-board carbon capture could in fact achieve the statutorily supported objectives of the rule at a lower cost and in an accelerated time frame.

Similarly, CARB inappropriately rejects the California Trucking Association's suggestion to exempt Group 2/3 vehicles and extend the timeline for purchase of Group 1 vehicles on the basis that this alternative "would not be as effective at advancing the adoption of medium- and heavy-duty ZE technologies and develop[ing] a self-sustaining ZEV market…"[63] An alternative advocated by the Owner-Operator Independent Drivers Association that would provide relief for small businesses and low-mileage truckers was rejected because "This alternative would not apply to long-haul applications" (an objective that is at odds with the dormant Commerce Clause of the United States Constitution to the extent it seeks to regulate miles driven outside of California) and because it "would not provide the market certainty for the needed infrastructure investments to develop a charging or hydrogen fueling network."[64]

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[61] *Save Tara v. City of W. Hollywood*, 45 Cal. 4th 116, 139 (2008), *as modified* (Dec. 10, 2008).

[62] ISOR at 235.

[63] *Id.* at 257.

[64] *Id.* at 258.

Another alternative offered by CCEEB that would limit the ZEV purchase requirement to fleets that use centralized depot charging was similarly rejected on the basis that it would not do enough to advance adoption of medium- and heavy-duty ZE technologies.[65]

By dismissing alternatives that do not support the Governor's and CARB's policy preference to prop up the electric and fuel-cell vehicle markets, CARB shirks its duty to consider and evaluate alternatives to the proposed rule that may meet statutory objectives to reduce criteria pollutant and GHG emissions in a less burdensome and more cost-effective manner. By deeming ZEVs as the only acceptable technologies to meet the Governor's preordained policy objectives, CARB is effectively predetermining the outcome of this proceeding. This predetermined outcome is not only arbitrary and capricious but also a violation of CARB's statutory obligations to consider costs and benefits of reasonable alternatives to the proposed rule.

B. The Draft EA Fails to Consider Potentially Significant Environmental Impacts.

CEQA requires that the Draft EA and Final EA contain "[a] discussion and consideration of environmental impacts, adverse or beneficial, and feasible mitigation measures which could minimize significant adverse impacts identified," as well as "[a] discussion of cumulative and growth-inducing impacts."[66] The Draft EA for the Proposed Regulation fails to consider the following potentially significant environmental impacts:

- In view of the devastating wildfires in recent years that have been ignited due to failures of strained and poorly maintained electrical infrastructure, CARB must evaluate how the increased demand for electricity resulting from the proposed rule will increase the risk of wildfires, and CARB must further evaluate the potential impacts more frequent wildfires will have on public health and the environment. Wildfire smoke substantially contributes to $PM_{2.5}$ emissions. A recent study by researchers from Stanford found that "the contribution of wildfire smoke to $PM_{2.5}$ concentrations in the US has grown substantially since the mid-2000s, and in recent years has accounted for *up to half of the overall $PM_{2.5}$ exposure in western regions*."[67] Exposure to wildfire smoke can contribute to "a range of negative health consequence[s]," and increased emissions from wildfires can "erode gains from efforts aimed at reducing $PM_{2.5}$ from other pollution sources." [68] By substantially increasing demand for electricity, the proposed ACF rule may increase wildfire risks to the additional detriment of air quality and public health, undermining not only clear legislative priorities but also CARB's responsibility to "coordinate, encourage, and review the efforts of all levels of government as they affect air quality."[69] As the agency charged with overseeing attainment for state criteria pollutant standards, CARB cannot overlook these

[65] *Id.* at 261.

[66] Cal Code. Regs. tit. 17 § 60004.2(a).

[67] M. Burke, et al., *The Changing Risk & Burden of Wildfire in the United States*, PROCEEDINGS NTL. ACADEMY SCI. (Jan. 11, 2021), https://www.pnas.org/doi/10.1073/pnas.2011048118.

[68] *Id.*

[69] HSC § 39500.

impacts and the significant risk that increased wildfires will exacerbate existing nonattainment issues.

- CARB does not adequately consider how increased demand on the electric grid due to significantly increased ZEV use will require additional increases in electric utility construction, which will likely include gas or nuclear power units to make up for the intermittency of renewable resources such as wind and solar. The construction and operation of these facilities may have negative environmental impacts, including impacts on biological resources and increased GHG emissions.

- CARB does not consider potential environmental and safety risks associated with production, storage and distribution of large volumes of hydrogen, particularly in high-density population areas where hydrogen fueling hubs may be located.

- CARB does not consider the impact of the rule on owners of fleets that are not subject to the requirements of the rule. If diesel ceases to become accessible or affordable, small operators may be forced to drive longer distances to obtain fuel, frustrating the emissions reductions goals of the rule.

- CARB does not consider how the negative economic impact the ACF rule will have on the petroleum industry could result in the abandonment of carbon capture, utilization, and storage technology already being developed, thereby increasing GHG emissions.

- CARB does not consider how the negative economic impact this Proposed Regulation will have on the renewable fuels industry could result in the abandonment of further technological advancements in fuels that already outperform ZEVs from a GHG emission and cost perspective.

- CARB does not consider the additional GHG emissions over the life cycle of ZEVs beyond the narrow snapshot in time of emissions at the tailpipe. The local air quality benefits of ZEVs' tailpipe emissions in California, if any, are thus offset and surpassed by these additional life cycle emissions, which exacerbate the global issue of climate change that the ACF rule is intended to address.

- CARB has not considered how increased demand for critical minerals and the resulting mining and smelting in potentially sensitive environments may adversely impact critical habitat, watershed impacts, endangered species, and indigenous people.

- CARB has not adequately addressed increased potential for human rights and labor abuses resulting from the significant increase in demand for minerals necessary for large-scale forced electrification.

- CARB does not consider the cumulative effects of the factors mentioned above that could result in increases of GHG and criteria pollutant emissions.

Valero asks that CARB fully consider and provide mitigation measures for these factors, as it must do under CEQA.[70] Notably, supporting low-carbon fuels and efficient ICE technologies would be a potential mitigation measure.

C. The SRIA Underestimates Economic Impacts on Low-Income Communities from Pass-Through of Higher Consumer Costs.

In establishing GHG emission reduction limits and standards to achieve statewide GHG emission goals, SB 32 directs CARB to ensure that its activities do not disproportionately impact low-income communities. Recognizing that the costs incurred by affected businesses and the public sector ultimately will flow to consumers, the SRIA projects that total personal income growth for Californians will result in a decrease of approximately $2.1 billion by 2050.[71] However, this projection is based on changes attributable to job losses and gains among various employment sectors. The SRIA does not quantify the increased costs to consumers resulting from passthrough of vehicle purchase costs, nor does it assess the disproportionate impact on low-income communities, for whom costs of goods represent a relatively larger share of household budgets.

V. The ACF Rule is Unconstitutional and Precluded by State and Federal Law.

CARB's ACF rule would require 100% of new MD/HD vehicles purchased in California by affected fleets to be ZE starting as early as January 1, 2024, culminating in a requirement that all new MD/HD vehicles sold in California must be ZE by 2040. These targets necessitate electrification of significant portions of the transportation sector, forcing the phase-out of oil and gas production, refining, and renewable fuel production. Attempting to unilaterally ban entire industries while unreasonably constraining the choices of individual market participants exceeds CARB's authority under California's Constitution and is precluded by numerous provisions of state and federal law.

A. The Forced Phase-Out of Internal Combustion Engines Intrudes on the Constitutional Guarantee of Substantive Due Process.

The proposed ACF rule would render obsolete all businesses that operate in support of the internal combustion engine. CARB's stated policy goal is the elimination of fossil fuels and renewable transportation fuels.[72] Ultimately ACF would eliminate an entire industrial sector by displacing demand for oil production, petroleum pipelines and terminals, refineries, renewable

[70] *Id.* § 60004.2(b).
[71] SRIA at 126.
[72] California Air Resources Board, *Draft 2022 Scoping Plan,* https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp-appendix-i-nwl-modeling.pdf

fuels production facilities, tanker trucks, oil change shops, and truck stops. Such a taking interferes with liberty interests protected under the California Constitution.

The California Supreme Court has held that "the constitutional guaranties of liberty include the privilege of every citizen to select those tradesmen he desires to patronize."[73] ACF will intrude on this liberty interest by preventing California fleet operators from using ICEVs and effectively banning the infrastructure to support these vehicles. Under the California Constitution, substantive due process "requires legislation not to be 'unreasonable, arbitrary or capricious' but to have 'a real and substantial relation to the object sought to be attained.'"[74] While California has an interest in limiting GHG and criteria pollutant emissions, ACF's arbitrary and exclusive selection of ZEVs is neither necessary nor rationally tailored to achieve this goal.

CARB lacks authority to ban oil and gas production and refinery industries and to force fleet owners to purchase vehicles they do not want and cannot afford because ACF is not rationally related to CARB's goal of reducing GHG and criteria pollutant emissions from vehicles. As discussed above, low-carbon fuels and highly efficient ICEVs meeting the stringent requirements of the Heavy-Duty Truck Omnibus rule can achieve emissions reductions comparable to ZEVs on a shorter timeline. Low-carbon fuels like renewable diesel are compatible with existing vehicle infrastructure, from light- to heavy-duty long-haul vehicles. These fuels can *immediately* reduce transportation emissions without the significant delay and exorbitant cost required to build out electrical and hydrogen infrastructure, all without impairing liberty interests. As noted above, GHG emissions from a light-duty vehicle that runs on soybean-based renewable diesel has 25% less life cycle GHG emissions when compared to an EV, and this percentage is even greater for a vehicle that runs on waste-oil-based renewable diesel.

B. The ACF Rule violates the Dormant Commerce Clause of the U.S. Constitution.

Under the Dormant Commerce Clause of the U.S. Constitution, state regulations may not impose burdens on interstate commerce that are clearly excessive in relation to the local benefits attained as a result of the regulation.[75] As home to the two largest ports in the United States, California plays a critical role in the distribution of international freight to and from the United States.[76] Forty percent of all containerized imports and thirty percent of all U.S. exports flow through California ports.[77] By imposing costly obligations on California drayage fleets and on broadly-defined high priority fleets to purchase ZE trucks that inevitably will be passed through to consumers and shippers, the proposed ACF rule will increase costs of consumer goods and will increase operating costs for shippers throughout much of the United States. Further, because the ACF rule requires replacement of Class 7-8 vehicles with ZE vehicles that rely on charging or fueling infrastructure that does not currently exist even within California and may never exist in other states that depend on interstate transport for receipt and shipment of goods, the rule has the

[73] *New Method Laundry Co. v. MacCann,* 174 Cal. 26, 32 (1916).

[74] *Coleman v. Department of Personnel Administration*, 52 Cal.3d 1102, 1125 (1991) (internal citations omitted).

[75] *Pike v. Bruce Church*, 397 U.S.137, 90 S.Ct. 844 (1970).

[76] https://lao.ca.gov/Publications/Report/4618

[77] *Id.*

potential to result in significant supply-chain disruptions throughout the United States, resulting in economic impacts far outweighing the purported local benefits to California.

Additionally, the Dormant Commerce Clause precludes states from directly or indirectly regulating commerce outside their own borders.[78] This principle is fundamentally incompatible with CARB's overt aim to force a nationwide transition of the medium- and heavy-duty vehicle market to ZE, both through direct and indirect control over out-of-state transactions and through its collective market share of new vehicle sales when combined with Section 177 states expected to adopt its standards. According to the ISOR, "The proposed ACF regulation is necessary to ensure California leads the nation in a shift to ZE…"[79] Indeed, by way of example, the ACF requires "high priority fleets" with at least one qualifying vehicle operating in California—and the remainder necessarily operating outside California's borders—to comply with the rule and replace ICE vehicles operating in California with ZE vehicles at the end of their purported "useful life." While the precise definition of "operating" in this context is unclear, the rule would presumably implicate fleets housed wholly beyond California's borders but that do business with and travel to/from California, such that a 50-vehicle fleet in Phoenix, Arizona, Las Vegas or Reno, Nevada, or even Tijuana, Mexico would ultimately be required to replace its existing ICE vehicles with ZE vehicles to continue doing business in California. And if such fleets do not have specific California-designated vehicles to conduct such travel in and out of the state, then the rule would appear to require the entire fleet to comply with its replacement requirements, despite residing beyond state or even national borders. Clearly this level of regulation constitutes an overreach of authority and impermissibly regulates interstate commerce. In addition, the rulemaking aims to regulate out-of-state transactions by, among other things, requiring out-of-state companies who hire and direct third-party vehicles to undertake additional measures to verify third party compliance and by requiring the manufacture of new ZE vehicles in lieu of ICE vehicles by predominantly out-of-state automobile manufacturers. This is further intended, by Executive Order, to force a "transition away from fossil fuels," which ultimately has the effect of regulating business and industries that operate predominantly beyond California's borders—e.g., oil and gas, petrochemicals, manufacturing, and agriculture. The proposed ACF therefore both directly and indirectly controls out-of-state conduct and runs afoul of the extraterritoriality principle of the Dormant Commerce Clause.

C. CARB Cannot Deprive California Businesses of Vested Rights or Commit an Unconstitutional Taking.

The ACF rule raises significant concerns over the vested economic interests of a variety of California businesses. California courts have held that businesses have "the right to continue operating an established business in which he has made a substantial investment."[80] The proposed ACF rule would deprive a multitude of established large and small businesses of this right.

Vested rights are rights that are "already possessed" or "legitimately acquired."[81] California courts have recognized both vested rights in economic interests (ability to continue

[78] *Healy v. Beer Institute, Inc.,* 491 U.S. 324,109 S.Ct. 2491(1989).
[79] ISOR at 6.
[80] *Id.* at 1529.

[81] *Harlow v. Carleson,* 16 Cal. 3d 731, 735 (1976).

operation of a business) and the vested rights doctrine as it relates to land use development (ability to develop land in accordance with a valid government authorization).[82] In addition, where the real property is legitimately acquired, the business activity is "undertaken in accordance with applicable statutory mandates," and the right has a "potentially massive economic aspect," then, "[c]ertainly, a fundamental vested right is at issue."[83] When these types of rights are at stake, they are considered too important to be relegated to "exclusive administrative extinction."[84] Courts have been careful to require more than economic burden by way of increasing the cost of doing business and instead have looked to protect economic interests where a company will be driven out of business or "forced to operate at a loss and close."[85]

Similarly, the Takings Clause of the Fifth Amendment to the U.S. Constitution, made applicable to the states through the Fourteenth Amendment, provides: "[N]or shall private property be taken for public use, without just compensation."

Here, the ACF rule has the ultimate goal of limiting all MD/HD vehicles sales to ZEVs and establishes a timeline for ICEV extinction in order to eliminate use of fossil and renewable fuels for transportation. It is evident that the proposed ACF rule would foreclose opportunities for numerous large and small businesses that have lawfully operated in the state of California for decades and have invested heavily in their operations within the state. The shutting down of these businesses will have a potentially massive economic impact and therefore represents an unconstitutional deprivation of vested rights under California law as well as an unconstitutional taking under the U.S. Constitution.

Likewise, the proposed ACF rule seeks to displace the renewable fuel industry. Not only have renewable fuels businesses been conducting operations within the state, but the state and CARB have actively encouraged substantial investment and growth of such businesses in recent years through the LCFS. It would be an unconstitutional deprivation of vested rights and unconstitutional taking of the substantial and unrealized investments made in response to the federal Renewable Fuel Standard and the California LCFS to now drastically undercut the market for and ultimately eliminate such businesses altogether.

Furthermore, the arbitrary selection by CARB of 13 years or 800,000 miles traveled as a vehicle's useful life would in many circumstances require businesses to prematurely retire and

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[82] *Goat Hill Tavern v. City of Costa Mesa*, 6 Cal. App. 4th 1519, 1526 (1992).

[83] *The Termo Co. v. Luther*, 169 Cal. App. 4th 394, 407–08 (2008) (Finding a fundamental vested right where the Director of Conservation ordered the plugging of 28 oil wells that had been lawfully in operation for over 20 years).

[84] *Id.* at 406 (citing *Goat Hill Tavern*, 6 Cal. App. 4th at 1526).

[85] *Mobil Oil Corp. v. Superior Court*, 59 Cal. App. 3d 293, 305 (1976) (Determining a fundamental vested right was not impacted because "[w]e are not presented with the enforcement of a rule which effectively drives the Oil Companies out of business. At most it puts an economic burden on them increasing the cost of doing business"); *Standard Oil Co. v. Feldstein*, 105 Cal. App. 3d 590, 604 (1980) (Concluding that the action did not impact a fundamental vested right because "[t]here is no contention that Standard will be driven to financial ruin by the action of the District; there is not even a contention that this particular facility will be forced to operate at a loss and close."); *San Marcos Mobilehome Park Owners' Ass'n v. City of San Marcos*, 192 Cal. App. 3d 1492, 1502 (Holding that "there is no contention, nor does the evidence suggest, that if the Commission denied the requested rent increases, the park owners would be in such an unfavorable economic position they would go out of business.").

replace valuable assets without any form of compensation—and on the contrary, at great expense—which likewise constitutes a deprivation of vested rights and an unconstitutional taking.

D. The ACF Rule Exceeds the Scope of CARB's Authority because CARB Cannot Demonstrate that it Would Qualify for a Clean Air Act Preemption Waiver.

The proposed ACF rule is *ultra vires* because CARB has not crafted the regulation such that it is eligible for a waiver under § 209 of the federal Clean Air Act. California HSC § 43013(a) authorizes CARB to "adopt and implement motor vehicle emission standards…unless preempted by federal law." Section 209 of the federal Clean Air Act expressly preempts California from adopting or attempting to enforce "any standard related to the control of emissions from new motor vehicles," unless the State receives a preemption waiver from EPA. No such waiver may be granted if the standards fail to meet any one of the following three criteria:

> 1) the determination of the State [that the standards are at least as protective of public health and welfare as Federal standards] is arbitrary and capricious,
>
> 2) such State does not need such State standards to meet compelling and extraordinary conditions, or
>
> 3) such State standards and accompanying enforcement procedures are not consistent with section 7521(a) of this title.[86]

The ACF rule cannot and does not satisfy any of these three criteria.

First, the ACF rule is not consistent with Section 7521(a) of the Clean Air Act. While EPA has described its review under this criterion as narrow,[87] EPA has previously stated that the determination is based on whether "California's standards are technologically infeasible." [MEMA I, 627 F.2d at 1126]. In prior evaluations, EPA relied on CARB demonstrations that "the necessary technologies presently exist to meet the stablished standards," but that is not the case here. ACF requires 100% ZEV sales by 2040, resulting in an absolute ban on internal combustion engine vehicles. Given this total removal of alternatives from the market, it is not enough for CARB to demonstrate that vehicle manufacturers have the technology (and, inherent in this question, the resources) to produce ZE vehicles. Rather, examining the technological feasibility of the ACF standards must include asking whether vehicle manufacturers have the technology and resources to rapidly shift to producing only electric and fuel-cell vehicles—a relatively new technology category that requires different resources than traditional vehicles—by the millions, as well as whether there are reliable supplies of electricity and batteries and/or hydrogen and fueling infrastructure. For the reasons detailed above—including insufficient global supply of lithium and other rare earth minerals that already are hampering electric vehicle deliveries of light-duty

[86] 42 U.S.C. § 7543(b).

[87] *See California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles*, 74 Fed. Reg. 32,744, 32,747 (Jul. 8, 2009).

vehicles,[88] insufficient electricity supply, and insufficient hydrogen fueling infrastructure—the answer is no.

Second, global climate change cannot be California's "compelling and extraordinary conditions" under Section 209, which instead refers to California's distinctive *local* pollution problems. Although the ACF rule purports to also be aimed at criteria pollutants, the reality is that CARB failed to consider any alternative options that it viewed as not aligned with Governor Newsom's Executive Order N-79-20, which as described above is strictly aimed at mitigating climate change via a pre-determined technology selection of ZE vehicles at the expense of ICE vehicles and fossil fuels. This predetermined goal of, and strategy for, combatting climate change cannot satisfy the requirements of Section 209, as California's conditions are "extraordinary" only if California suffers a distinct localized problem. Moreover, California's conditions related to global climate change are not "extraordinary" in that any purported impacts to California are also experienced elsewhere throughout the country and, indeed, the world. Similarly, California has not established that it "needs"—and indeed does not need—its own emission standards to "meet" climate change conditions when there are other reasonable alternatives available, as described herein, which CARB failed to consider. Any incidental impacts on local criteria pollution cannot be used to justify standards aimed at global climate change.

Finally, CARB's determination that the standards are at least as protective of public health and welfare as Federal standards is arbitrary and capricious. In this regard, the California waiver from federal preemption is an exception that was intended by Congress to give added flexibility in addressing unique conventional pollution issues in limited areas of California. It was not contemplated by Congress that this exemption would be used decades later to allow CARB to ban the use of the ICEV for California and elsewhere in states that adopt the rule. The proposed ACF rule would force a significant portion of the domestic transportation sector to be dependent on electric vehicle batteries. The widespread economic implications, policy consequences for energy independence, and geopolitical risks are simply too significant to be approved by a state executive agency under an exception to federal preemption that was never contemplated for this purpose.

Given the sweeping national implications of forced conversion of a substantial portion of the vehicles critical to distribution of goods throughout the United States, California is and should be federally preempted from unilateral action. Further, setting federal GHG tailpipe emission standards in a manner that would force elimination of ICEV is beyond even the U.S. Environmental Protection Agency's statutory authority. Forced electrification of a significant share of the U.S. medium- and heavy-duty transportation fleet is a major question with tremendous potential economic, environmental, and social consequences that is properly placed with the United States Congress—and cannot be based on a predetermined outcome dictated by Executive Order.

[88] *See e.g.,* S&P Global, *Graphite supply a concern in meeting battery demand*, Feb. 16, 2022, available at https://www.spglobal.com/commodityinsights/en/market-insights/latest-news/energy-transition/021622-feature-graphite-supply-a-concern-in-meeting-growing-battery-demand; CNBC, *Stellantis CEO warns of electric vehicle battery shortage, followed by lack of raw materials*, May 24, 2022, available at https://www.cnbc.com/2022/05/24/stellantis-ceo-warns-of-ev-battery-shortage-lack-of-raw-materials.html.

E. The ACF Rules Is Preempted by the Federal Statutory Mandates of EPCA, the CAA, and the EISA.

CARB lacks authority to approve the proposed ACF rule because it is inconsistent with, frustrates, and is preempted by the statutory mandates of federal legislation, including the Energy Policy and Conservation Act ("EPCA"), the CAA, and the Energy Independence and Security Act ("EISA"), including the Renewable Fuel Standard ("RFS").

Congress has authorized the U.S. Department of Transportation and NHTSA to establish fuel economy standards under EPCA. These average standards are known as "corporate average fuel economy" or "CAFE" standards. The CAFE standard is "a performance standard specifying a minimum level of average fuel economy applicable to a manufacturer in a model year." [89] Under EPCA, "When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard."[90] Through the ACF rule, however, CARB seeks to do precisely that by virtue of its 100% ZEV mandate. More specifically, the motor vehicle emissions standards underlying this mandate are "related to" fuel economy standards because regulating fuel economy controls the amount of motor vehicle emissions and, in turn, regulating motor vehicle emissions controls fuel economy.[91] Indeed, the GHG emissions targeted by the ACF rule relate directly to combustion or the actual consumption of fuel, the rate of which is determinative of a vehicle's fuel economy. Accordingly, ACF is indeed related to fuel economy standards and, therefore, expressly preempted by EPCA.

Moreover, any authority that CARB might otherwise claim with regard to the ACF rule's regulation of GHG emissions necessarily stems from the CAA, under which EPA is authorized by Congress to regulate motor vehicle emissions. Similar to EPCA, however, the CAA generally preempts state adoption or enforcement of "any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to [the CAA]."[92] The only exception to this prohibition is if EPA grants a preemption waiver to impose standards more stringent than those imposed by the CAA, following notice and opportunity for public hearing and provided certain criteria are met.[93] For the reasons stated above, however, the ACF program does not meet the criteria for a preemption waiver under the CAA and is, therefore, preempted by the CAA, as well as EPCA.

Further, because the proposed ACF rule would decrease and ultimately eliminate the volume of renewable fuel used for transportation, it frustrates Federal mandates under the Renewable Fuel Standard. Congress created the RFS to "move the United States toward greater energy independence and to reduce greenhouse gas emissions."[94] Congress intended the program "to be a 'market forcing policy' that would create 'demand pressure to increase consumption' of

[89] 49 U.S.C. § 32901(a)(6).
[90] *Id*. § 32919(a).
[91] *See, e.g., California By and Through Brown v. EPA*, 940 F.3d 1342, 1345 (D.C. Cir. 2019) (providing that "the technologies to control CO2 emissions and to improve fuel economy overlap to a great degree").
[92] 42 U.S.C. § 7543(a).
[93] *See id*. § 7543(b)(1).
[94] *Americans for Clean Energy v. EPA*, 864 F.3d 691, 696 (D.C. Cir. 2017).

renewable fuel."[95] Because Congress directed EPA to comply with the RFS, EPA cannot—either on its own or by virtue of a Section 209 waiver of the ACF Program—promote the substantial or exclusive use of technologies that will frustrate its goals. By extension, CARB cannot do what EPA cannot do on its own, yet that is precisely what ACF would do by decreasing or eliminating consumption of biomass-based diesel and other renewable fuels and arbitrarily promoting replacement technologies to achieve the very same objectives. Therefore, ACF's mandate of ZEV purchases at the expense of renewable fuels both decreases volumes of renewable fuels in transportation and creates even greater energy security risks through dependence on minerals sourced almost entirely outside the United States.[96] Thus, ACF frustrates the goals of EISA and the RFS, and goes beyond the authority of CARB.

Additionally, by targeting federal fleets as high-priority fleets subject to ACF's accelerated schedule for retirement and replacement of vehicles, CARB oversteps its authority in a manner that may conflict with requirements under federal procurement laws. To the extent the federal government complies with the rule's requirements, the increased capital costs to purchase new ZEV vehicles will be borne by taxpayers nationwide, not just those in California. Similarly, if federal fleets such as the U.S. postal fleet operating in California experiences delays and bottlenecks due to inability to procure vehicles timely or at all, the rule may result in nationwide impacts due to delays in mail receipt and delivery.

Finally, the proposed ACF rule may violate other Constitutional provisions. These include, but likely are not limited to, the equal sovereignty doctrine, which precludes the disparate treatment of the states by the federal government, and the dormant foreign affairs preemption doctrine under the Supremacy Clause, which preempts state laws that intrude on the exclusive federal power to conduct foreign affairs.[97] Because the proposed ACF rule is unprecedented in its scope and reach, CARB should pause further rule development pending legal review to confirm that its actions are authorized under state law and that they are not preempted or precluded as a matter of Federal law.

[95] *Id*. at 705 (quoting Final Rule, 80 Fed. Reg. at 77,423) (emphasis added).
[96] *See* the State of California's Memorandum of Understanding with China, setting climate policies that would increase dependency on China's near-monopoly power over transition minerals; *see also* International Energy Agency, *The Role of Critical Minerals in Clean Energy Transitions,* available at https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions.
[97] *See Movsesian v. Victoria Versicherung AG*, 670 F.3d 1067 (9th Cir. 2012).