October 17, 2022

Honorable Chair Liane Randolph
Honorable Board Members
California Air Resources Board
1001 “I” Street
Sacramento, CA 95814

RE: Support for Advanced Clean Fleets Rule

Dear Chair Randolph and California Air Resources Board (“CARB”) Members,

Thank you for the opportunity to provide comment on the proposed Advanced Clean Fleets (“ACF”) regulation. Forum Mobility (“Forum”) provides zero-emission trucking solutions for drayage in California. Forum develops, builds and operates the charging infrastructure, purchases and leases class 8 zero-emission electric trucks, and wrap all the costs and incentives into one monthly fee for truck drivers or fleet owners to provide Truck as a Service (“TaaS”) and Charging as a Service (“CaaS”) solutions.

Our climate and our communities require a transition to zero-emission transportation. Success in this effort will make our air cleaner, our communities healthier, and if done right, will lower the costs of goods movement and deliver economic benefits to drivers and fleets. Below, Forum offers some suggested improvements to the proposed ACF regulation, and suggestions for additional CARB actions that will be necessary to make this ambitious effort a success.

First, Forum notes that much of the public resistance to the proposed ACF regulation has hinged on an assumed lack of fueling or charging infrastructure. Fueling or charging infrastructure is a challenge, but with proactive measures from CARB, the California Energy Commission (“CEC”), the California Public Utility Commission (“CPUC”) and other state agencies, it is solvable. The CEC recently prepared an analysis pursuant to Assembly Bill (“AB”) 2127 that indicated the necessary charging for medium and heavy-duty (“MHD”) battery electric vehicles (“BEV”) by 2030 would require about $6.2 billion in capital expenditure (not including land and operating costs)[1]. Private companies have been gearing up for the challenge. Atlas

[1] Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030 “projects that the state will need 180,000 medium and heavy-duty ZEVs in 2030 to achieve state climate and air quality goals and comply with Executive Order N-79-20. Preliminary modeling, which considered 50-kilowatt (kW) and 350- kW charging power levels, suggests that to charge these vehicles, 157,000 DC fast chargers will be needed, of which 141,000 are

Public Policy recently compiled a list of more than $6.4 billion in equity and debt financing announced by private-sector efforts to build electric vehicle ("EV") charging infrastructure in the U.S. to date.[2] While some of the companies in that list have historically focused on the light-duty sector, several of them are growing to encompass MHD as well. Forum compiled a list of more recent announcements of private sector funds focused more on MHD, and found announcements totaling well over $1 billion[3]. This is just the tip of the Electric Vehicle Supply Equipment ("EVSE") funding iceberg. With clear policy direction, and with further fine-tuning of policies to support scalable business models, a lot more private funding will enter the EVSE market.

Forum provides the following suggestions for improvement of the proposed ACF regulation:

Include signing up for a truck-as-a-service ("TaaS") and similar "Provider" models as a valid reason for an extension.

Given that the majority of the drayage fleet is comprised of small fleets and independent owner operators ("IOO"), an effective and increasingly popular option for transitioning to ZEVs is through TaaS models. TaaS bundle vehicles, access to charging infrastructure fuel, and long term investment into one monthly fee for the customer. This as-a-service model allows sizeable amounts of third-party capital to provide a one-stop solution for the customer, especially IOOs.

Recognizing gaps in services and the need for additional solutions, CARB's Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project ("HVIP") has developed a new program and funding mechanism to support third-party provided business models. Called Innovative Small e-Fleets ("ISEF"), the program allows small fleets to access flexible financing, lease, rental, and truck-as-a-service options from third parties with enhanced incentives and fueling support. In the program, third-party "Providers" can be dealers and their financing partners, leasing and rental companies, or truck-as-a-service providers. CARB proposed budget anticipates providing an increasing amount of support for independent operators and small fleets through this mechanism. It follows, then, that the ACF should recognize it as a compliance pathway, and incorporate it into the DNA of the regulation.

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50 kW and 16,000 are 350 kW." Assuming $28k for a 50 kW charger and $140k for a 350 kW charger, that's $6.2 B of cap-ex.

[2] https://www.canarymedia.com/articles/ev-charging/terawatt-infrastructure-snags-1b-for-ev-charging-buildout

[3] https://www.yahoo.com/lifestyle/loop-global-inc-secures-60-130000185.html
https://www.crunchbase.com/organization/wattev
https://www.reuters.com/markets/rates-bonds/ev-charging-startup-terawatt-infrastructure-raises-1-billion-2022-09-13/
https://www.globenewswire.com/news-release/2022/07/06/2475140/0/en/Zeem-Solutions-EV-Fleet-as-a-Service-Provider-Secures-50-Million-Capital-Investment-from-Affiliates-of-ArcLight-Capital-Partners-Announces-Strategic-Partnership-with-LAZ-Parking-Re.html
https://www.globenewswire.com/en/news-release/2022/08/09/2495043/0/en/Voltera-Launches-as-Turnkey-Charging-Infrastructure-Solution-for-Companies-Operating-EVs-With-Plans-for-Multibillion-Dollar-Investment.html
https://techcrunch.com/2021/11/10/ev-fleet-and-charging-infrastructure-startup-inspiration-comes-out-of-stealth-with-200m-and-revel-as-first-customer/

Forum supports the proposed ACF regulation provisions giving an extension to operators that have a binding purchase agreement for a ZEV truck due to delays in vehicle delivery as well as delays in construction or in developing infrastructure, and, in this same vein, Forum requests that similar treatment be given to TaaS and Providers (as defined in the ISEF program) as well. TaaS and Providers face similar challenges and delays and should be accorded similar extensions in navigating them.

Forum notes that State and Local Government and High Priority and Federal fleet portions of the proposed ACF regulation include language specifying that fleets that use "truck leases that are part of a bundled service agreement," are now afforded extensions. The ‘bundled service agreement’ indicates to Forum that the TaaS or Provider service model is already being considered in the proposed ACF regulation. Forum requests that the drayage portion of the proposed ACF regulation be clarified accordingly. Providing this critical degree of flexibility will better facilitate a smooth transition straight to ZEVs, rather than force an intermediary investment in newer diesel truck models - a costly investment that does not maximize either cost or emissions benefits.

Forum suggests some key parameters for obtaining an extension for infrastructure delays. First, a regulated entity must have a multi-year contract with a TaaS or Provider for a conforming ZEV and/or fueling services. Second, a TaaS or Provider must provide documentation to the effect that it has site control over a suitable site (lease, lease option, purchase or purchase option); a load hosting capacity study demonstrating adequate power availability; and an engineering layout illustrating the charger configuration. Third, once the TaaS or Provider site is thusly qualified, the TaaS or Provider would then be subject to similar requirements as other ACF participants regarding proof of delayed equipment, permits from Authorities Having Jurisdiction, and utility equipment and infrastructure delays.

The proposed extension window will already be closed before the ACF regulation is final

Forum notes that the proposed ACF regulation provides that extensions be given for covered entities if “ZEVs [are] ordered at least one year prior to the next compliance date.” The proposed ACF regulation is due to come into effect January 1, 2024, meaning that covered entities would have to make their purchase by January 1, 2023 to meet the extension window. However, given the timelines for the proposed ACF regulation to become final, it is unlikely that the ACF regulation will become final before that date.

Forum believes that it is problematic to offer an extension that requires action (with substantial associated costs) before a regulation is finalized. Forum asks that covered entities be given a window for action that begins after the proposed ACF regulation is finalized. Again, this will better facilitate a transition straight to ZEVs, rather than incentivize an intermediary investment in newer diesels.

Reform the Low Carbon Fuel Standard to support successful implementation of ZEV mandates

While the proposed ACF regulation sets a firm goal for the transition to zero-emission fleets, it will require a lot of additional policy support, from many agencies and institutions, to achieve the goal. One crucial policy matter is squarely within the purview of CARB, and Forum addresses it here to make the point that these efforts are closely linked and complimentary.

Rewiring and repowering California to run on ZEVs will be a huge undertaking, requiring immense investments from millions of people and businesses, big and small, that are involved in goods movement in the world's 5th largest economy. Lives and livelihoods are at stake, and failure to successfully navigate this transition will imperil the lifeblood of our state and national economy. CARB itself must use all the tools at its disposal to help support the success of this endeavor. The biggest and most important matter to address this is to revamp the Low Carbon Fuel Standard (LCFS).

The biggest challenge presented by the current state of the LCFS is that credit values are currently around $70, down from recent highs of $200. The total cost of ownership ("TCO") analysis in Appendix G of the proposed ACF regulation projects LCFS credit value of $200 until 2030 – indeed, at that level ZEVs can compete quite favorably with diesels on a TCO basis. However, the huge decrease in LCFS values is an existential challenge to the economics of burgeoning ZEV transportation solutions, and risks undercutting a key policy goal of CARB of "rapidly moving to zero-emission transportation, electrifying the cars, buses, trains, and trucks that now constitute California's single largest source of planet-warming pollution."[4] Electrifying heavy duty transportation is going to require focused support, and LCFS must be modified to support California's policy goals. The proposed ACF regulation mandates an accelerated transition to ZEVs – not to renewable diesel or renewable gas – and fleets deserve parallel support for providing charging and building the required ZEV infrastructure.

In 2021, the LCFS delivered ~$3.7 billion to low carbon fuels[5]. Only 22%, however, went to electrification - the rest to biofuels, the vast majority of which will not play a role in supporting the transition to ZEVs that the proposed ACF regulation (and related ZEV regulations addressing light-duty vehicles) requires. According to CARB data, from Q4 of 2020 to Q4 of 2021, the number of credits in the LCFS market has grown by 29%, and 70% of this growth was from growth in renewable diesel and biomethane. In the same period, the number of renewable diesel credits grew by 605,357, a 47% increase, and the number of biomethane credits grew by 279,653, a 52% increase.

Without action, the LCFS market will become increasingly flooded, as there is much more renewable diesel refining capacity due to come online. According to data submitted by California Bioenergy, "Based on the identified RD [renewable diesel] projects, there are approximately 1.4 billion gallons of RD production operational in the United States, with another 1.9 billion gallons under construction, and 2.4 billion gallons of production planned. In total, as much as 5.7 billion gallons of RD production could be online by 2025. Of this production, approximately 2.1 billion

[4] Draft 2022 Scoping Plan Update, Executive Summary
[5] https://asmith.ucdavis.edu/data/LCFS

gallons is expected to be derived from waste feedstocks. The remaining 3.6 billion gallons will likely use food crops (soy and corn, primarily) as feedstocks for production." [6]

Forum would like to point out that the analysis provided by California Bioenergy is persuasive that increasing the carbon intensity ("CI") beyond 2030 and capping crop-based biofuels in tandem will be most effective in returning LCFS credits to levels supportive to the transition to ZEVs. Further echoing the need for reform, a former CARB branch chief in the LCFS program recently submitted eye-opening testimony to the effect that crop-based biofuels are not sustainable; in some cases resulting in carbon emissions exceeding that of petroleum; risk increasing food prices and hunger; and cannot be scaled as a solution.[7] The letter deserves deep consideration, as does a corroborating report, "Setting a lipids fuel cap under the California Low Carbon Fuel Standard," from the International Council on Clean Transportation.[8]

CARB has the tools to chart a better path. In LCFS pre-rulemaking workshops, CARB staff have proposed consideration of increasing CI targets to 2030 and beyond, capping crop-based biofuels and establishing a capacity program - Fast Charging Incentive ("FCI") - for MHD. Forum supports all of these and they should be implemented with urgency. As per the CEC analysis, California needs to install 53 chargers a day, every day through 2030 to be on track to meet the charging needs of the proposed ACF regulation. An FCI would be extremely helpful in this regard and should be implemented as soon as possible.

Conclusion

Our communities and our climate deserve a transition to zero emission transportation, and the proposed ACF regulation is a crucial step forward. We urge CARB to support the regulation with the modifications we have described, and CARB should also continue to advance all the other actions necessary to successful implementation.

Forum thanks CARB for the opportunity to provide input to these important regulations. We'd be happy to discuss in further detail at any time.

Yours,

Adam Browning

Boardmember for Forum Mobility

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[6] https://www.arb.ca.gov/lists/com-attach/2-lcfs-wkshp-aug18-ws-VDcAZwBtV2ZQP1U6.pdf
[7] https://www.arb.ca.gov/lists/com-attach/4303-scopingplan2022-VDdVPAZqVGoAY1U7.pdf
[8] https://theicct.org/wp-content/uploads/2022/08/lipids-cap-ca-lcfs-aug22.pdf