GLADSTEIN, NEANDROSS & ASSOCIATES

CLEAN TRANSPORTATION & ENERGY CONSULTANTS

August 18, 2022

Tony Brasil, Branch Chief
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on the Advanced Clean Fleets Regulation Draft Language and Workshop Concepts

Dear Mr. Brasil:

Thank you for the opportunity to provide comments on the California Air Resources Board's (CARB) proposed Advanced Clean Fleets (ACF) regulation. GNA is North America's leading environmental consulting firm specializing in the use of clean low carbon alternative fuels and advanced transportation technologies in the commercial transportation sector. Our firm has 29 years of experience in low-emission and low-carbon technology adoption for the commercial fleet sector, including extensive electrification and hydrogen project implementation. GNA is involved in more medium- and heavy-duty zero-emission truck projects than anyone in the industry. Our clients are at the forefront of the transition to zero-emission medium- and heavy-duty vehicles and include the most progress public and private fleets in the nation, nearly every major electric OEM, utilities, infrastructure providers, public agencies, and community partners. **We have successfully developed California's largest and most high profile zero-emission truck projects including: the Daimler Trucks North America Innovation and CX Fleet projects; the Frito Lay ZANZEFF project in Modesto, CA; the Volvo LIGHTS project; the JETSI project; and many others.** GNA's team excels at helping clients across the zero-emission ecosystem accelerate adoption, including: identifying technology rollout plans, grant funding, technology procurement, LCFS credit management, marketing and customer engagement, and program management of large-scale ZEV pilot and deployment programs.

Our focus on identifying and overcoming large- and small-scale barriers to ZEV adoption has given us unique and extensive perspective into the opportunities and challenges facing the state of California as we move to a fully zero-emission transportation system. We support dozens of progressive fleets working to move aggressively into the commercial electric truck space. We also host the annual ACT Expo, North American's largest and most important annual conference and trade show providing a one-stop-shop educational forum for thousands of medium- and heavy-duty fleets looking to learn about today's array of zero-emission truck and infrastructure technologies. We also created and manage the ACT Fleet Forum, an educational network of the industry's most innovative commercial fleets working to share best practices and evaluate opportunities to successfully deploy the latest advanced clean transportation technologies[1]. In addition, our company's grant funding expertise has helped secure over $1 billion for our clients' clean transportation projects. Our comprehensive clean fleet services also include proactive regulatory planning and ongoing compliance management efforts for numerous clients.

As you can tell from the above, there is no one that is more intimately involved on the front lines of the zero-emission truck transportation revolution. We hope our experience as ZEV grant, project, and regulatory compliance consultants provides an important perspective on strategies CARB can utilize to improve the ACF rulemaking, so we can achieve our shared goal of a large-scale, near-term transition to zero-emissions.

[1] Please see https://www.actfleetforum.com/ for a list of the ACT Fleet Forum members.

We share CARB's commitment to an effective rollout of zero-emission technologies throughout the commercial vehicle sector and appreciate the addition of exemption categories that better support early-year roll out. We appreciate the updates in the most recent language and workshops to account for various challenges, including the CARB-hosted list for the ZEV Unavailability Exemption, the energy-based Daily Usage Exemption addition, and the inclusion of an Infrastructure Construction Delay process. However, ***we still see opportunities to clarify and streamline reporting and efficiently manage early-year implementation challenges, while still enabling us to meet our critical long-term air quality and carbon targets***.

Infrastructure Exemption

The commercial fleet industry is increasingly realizing that the major limiting factor in adoption is not vehicles, but infrastructure. While we welcome the addition of a one-year delay for vehicle orders due to infrastructure delays, our experience on infrastructure projects indicates this will be insufficient to address and align vehicle deliveries with infrastructure availability. **Vehicle purchase delays should be made based on project-specific timelines for High Priority and Drayage fleets with in-progress infrastructure projects, including owned sites, shared sites, and contracted-agreement retail sites.**

Many MHD projects to-date have been early deployment, pilot projects. Physical locations were chosen with infrastructure access in mind, selecting for site ownership, site power availability, and physical footprint capacity. In these cases, where available physical sites matched the limited project needs, GNA's clients have achieved infrastructure plus vehicle project implementation in as little as 20-24 months. The schedule below is a representative example of our clients' average timelines across investor-owned utility SB350 funding programs, ***for pilot project, small scale infrastructure projects only***.

Months	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Infrastructure Planning (Avg Timeline), As Aligned with Existing CA Utility Programs	Internal Charging Needs Analysis		Engage with Utility, Prelim Design and Project Scoping		Utility Funding and Project Approval		Finalize Design, EV and EVSE Purchase Contracts		Permitting, Design, Build										Rebate Issued		*(Awaiting Truck Delivery)*	

This timeline assumes:

- Fleet has completed an extensive EV suitability planning prior to this site-specific charging needs analysis
- Site owned by fleet
- 1-2 MW project
- No onsite battery storage or renewable power installation
- Site footprint enables appropriate charging setup without impacting fleet operational needs
- Power available from utility onsite without grid upgrades
- New utility service and transformer
- 480v supply
- Existing utility right of way
- Limited to no building load integration
- Project design doesn't undergo significant modifications/revisions with utility

While the above schedule aligns with ACF deadlines for High Priority fleets, an industry-wide transition scenario will significantly extend these timelines for all fleet operators, with impacts well beyond a one-year delay. As just one datapoint among many that impact project schedules, we are now seeing lead times for

new switchgear extended to approximately 70 months (i.e. 1.3 years), in addition to being 100% more expensive than the same switchgear a year ago. What's more, we are unfortunately being told that these lead times and cost increases are only expected to increase in the future. Additionally, the market is now experiencing significant delays in the delivery of other EVSE, which is only expected to worsen given the billions of dollars of incentives coming from the just adopted Inflation Reduction Act, and the previously adopted Infrastructure Investment and Jobs Act. **Fleets that implement high-power infrastructure to suit or scale to the operations of an entire site are looking at 1.5-5 years for large-scale infrastructure project development.**

Therefore, a one-year vehicle delivery extension based on construction delays is insufficient because infrastructure projects to support the 1/2025, 1/2027, and 1/2028 face a high likelihood of extending well beyond a year past the regulatory deadlines. Fleets need an approved delay on finalizing vehicle order plans until infrastructure is actually available, not just for an arbitrary one-year metric. The following fleet charging infrastructure timelines are based on Black & Veatch's public summary of its transit and high-power fleet charging experience at over 1,000 sites, in addition to GNA's California-specific fleet and utility application experiences:

1. Initial Fleet ZEV Plan: 1-2 years
2. Real Estate Acquisition: 1-2 years
3. Infrastructure Project Implementation: 1.5-5 years
    - 0-2 MW projects: 1.5-2 years (no significant grid upgrades needed)
    - 3-5 MW projects: 3-4 years (grid upgrades needed)
    - 5-10 MW projects: 4-5 years (new feeder and/or substation needed)
    - 10+ MW projects: 4-5 years (new substation needed)

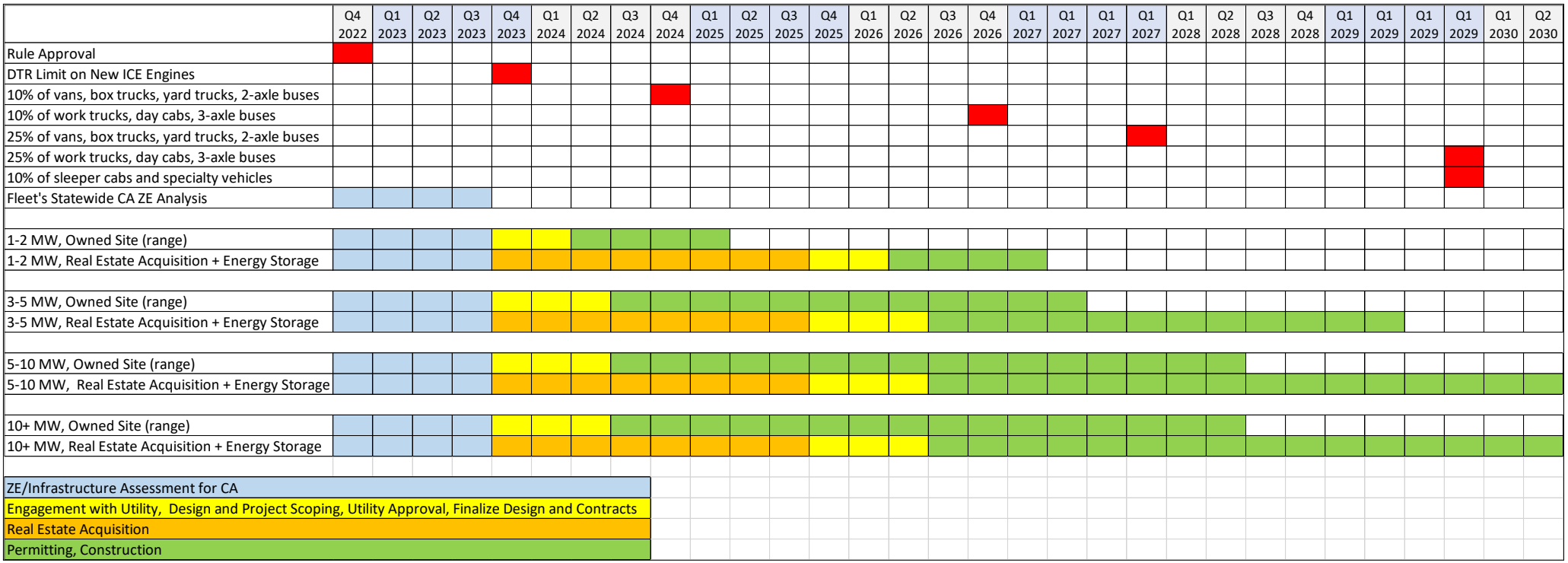
Fleets also need clarification that supporting documentation for a delay will enable fleets to include documentable real estate searches as part of the allowable delay Real estate challenges for fleets are substantial and can add an additional two years to the project timelines noted above, especially in real-estate constrained California. Where fleets own facilities, existing lots may not have the physical footprint to accommodate fleet-scale charging, necessitating a new site search. In addition, the transportation industry has a current reliance on leases, where owners have shown minimal appetite for onsite charging, even when the fleet agrees to absorb the entire expense. GNA's recent survey of nine (9) commercial fleet clients with 430 truck facilities statewide showed that 54% of their facilities are currently leased, underscoring the scope of the impending real estate challenge in California for fleet electrification.

For fleets that depend on retail fueling, including early-year drayage truck operators, the same infrastructure timeline challenges apply. Neither the onsite nor current retail energy marketplace is ready to meet the needs of drayage and other commercial fleet vehicles in the early-year timelines of the rule.

Given these fundamental project development challenges, **GNA requests that vehicle purchase delays should be made based on project-specific timelines for High Priority and Drayage fleets with in-progress infrastructure projects, including owned sites, shared sites, and contracted-agreement retail sites.** Fleets making good-faith efforts to implement a complex energy transition plan with numerous unknowns at the site, utility, and vendor levels should not be forced to buy vehicles they cannot charge or be categorized as Non-Compliant if they cannot meet the ACF compliance benchmarks.

The chart on the following page outlines a range of real-world infrastructure timelines, as aligned with initial implementation targets for the ACF rule. The schedules clearly demonstrate that many fleets will face compliance challenges in the early years of the proposed rule, due only to the standard timelines for fleet-scale infrastructure projects.

Advanced Clean Fleets Proposed Implementation Deadlines
Alignment with Fleet-Scale Charging Infrastructure Project Development Timeline



Infrastructure-Related Vehicle Delay Reporting Concept

Similar to the current ICT rule, GNA believes that ACF compliance could reasonably include a high-level infrastructure checklist document from each regulated fleet demonstrating their: turnover plans, real estate or retail vendor contract, vendor and utility contracts, permitting engagement, anticipated timelines, and project progress. These plans could be reviewed and verified by CARB. Fleets making progress on approved plans would be able to achieve "Interim Compliance" in any given year and to delay site-associated vehicle purchases, even if they haven't yet been able to achieve the ultimate rollout targets of any particular year due to delays. This Interim Compliance would not put contracts and business arrangements at risk, and fleets would still be required to make continual progress on fleet-wide ZEV turnover.

CARB could further help align vehicle planning and infrastructure under this approach, which would minimize the potential capital impacts from misaligned purchase cycles or stranded vehicle assets. ZEVs cost hundreds of thousands of dollars apiece, and fleets cannot afford for capital to remain tied up in unused assets for months and years because ACF deployment deadlines don't match infrastructure project timelines. Fleets with approved infrastructure plans could be allowed to make VIN-specific turnover and replacement decisions based on actual infrastructure availability.

Grant-Funded Vehicles

GNA's grant writing supports many of the industry-leading deployments of battery- and hydrogen-powered heavy-duty vehicles, across all weight classes and vocational types. We have been involved in funding awards at every stage of the zero-emission market pipeline, from technology development, to pilot, early commercial, and now mid-sized rollouts. The clients who develop, test, iterate, and advance the entire zero-emission marketplace were only able to undertake these projects via grant-funded support from public agencies. **These are the investments that advanced the entire zero-emission technology supply chain, and early adopters should not be penalized with the exclusion of pre-ACF grant-funded vehicles from counting towards ACF compliance**.

CARB's ACF rule is a technology-accelerating rule that will rapidly change technology supply and demand dynamics. The combination of The Advanced Clean Truck (ACT) and Fleet (ACF) rules aim to achieve manufacturing targets and availability by 2024. This means CARB's assumptions themselves acknowledge there is not adequate availability or pricing during the current market ramp up period. Furthermore, initial assumptions around ACT commercialization timelines were also predicated on pre-pandemic supply-chain disruption assumptions, which have created delays and pricing increases throughout the commercial trucking industry, particularly for zero-emission technologies.

Battery electric vehicles still carry very significant economic risk for fleets: the technology has not yet reached full maturity and will not likely hit that mark prior to the 2024 vehicle purchases envisioned under ACF. For clients with additional complex body modifications, the costs can be 3x-4x the cost of conventionally fueled vehicles, and costs for this technology continue to rise. Just last week, a dealer for a large truck OEM informed GNA that the price of their Class 8 battery electric truck was increasing by $50,000. This price increase is consistent with other quotes we have recently seen from other large truck OEMs. Grants therefore remain essential to helping to reduce – but not eliminate - upfront capital risk. And the market cannot advance and continue to commercialize at the levels envisioned under the 2024 regulatory targets without grant-supported deployments over the next several years.

The ACT and ACF regulations are pushing the manufacturers to bring more of these products into market, which will hopefully reduce cost differentials at some point in the future, but we are simply not yet there. The new provision inserted into the ACF regulation titled "Vehicles Acquired with Public Funds" further

stresses economics for the leading fleets that have long been committed to electrification, at a time when the entire industry needs accelerated investment and deployment.

We all collectively—the vehicle manufacturers and charging industry as well as regulatory bodies—understand that this is nascent technology that requires support, testing, and early deployments. We should be finding ways to reduce barriers for fleets to adopt these technologies and not create new ones.

While we recognize that state agencies do not like to "pay for compliance" as a common practice, ACF is unlike any previous regulation. This rule is writing the framework for an entire energy transition, with risks, questions, and costs that we are all still working to identify. The market is still in an early, nascent stage, and the public-private partnerships enabled by grants remain necessary to advance the marketplace for everyone. Industry leaders should not be penalized for working with funding agencies to collaboratively build the zero-emission marketplace. We therefore recommend that this provision surrounding Vehicles Acquired with Public Funds do the following:

- Grandfather in all vehicles acquired (defined by purchase order) prior to adoption of the Advanced Clean Fleet regulation.
- Give a 3-year buffer to allow for a fleet to count the vehicle secured with public funding before it is removed from the fleet count.
- Consider delaying implementation of this provision until Model Year 2030.

CA Fleet Definition

CARB's current draft language requires all vehicles that enter the state of California to be registered and counted as part of a fleet's total compliance obligation. In past California diesel emission reduction rules, registration in CARB's TRUCRS system was not required for vehicles meeting the engine model year standards, enabling broad flexibility for interstate fleets to operate in California with compliant diesel engines. However, under the percent-of-total ACF concept, even transitory interstate vehicles would be included in a fleet's total, thereby changing the denominator associated with fleet percentage turnover targets.

This approach places an outsized burden for compliance reporting and zero-emission turnover targets on interstate fleets, due to vehicles which are a) predominantly non-California vehicles and b) the least able to electrify for the near- and medium-term timelines based on mileage profiles and gaps in long-haul infrastructure across state lines.

CARB should modify the existing temporary pass language from the Truck & Bus rule to allow one-time access to California roads each year, without the need to register in the CARB system or get pre-approvals. Vehicle operating for less than 10 days in the state of California per year, should not be counted as part of the California fleet. This could be verified from GPS mileage data, dispatch data, and other available records, that demonstrate a truck's short-term and transitory operations in the state of California.

Integrated Reporting Systems

Given the scope and breadth of California's emission requirements and associated reporting systems, GNA hopes that CARB will develop an integrated reporting system that accommodates data across all on-road rules. Reporting the same VIN-specific data, odometer, sale information, and corporate information could be simplified and immediately verified and populated across regulation reporting systems including the ARBER Drayage Truck Registry, ACF Reporting, HDVI/M reporting, TRU, and legacy Truck & Bus systems.

Hiring Fleet Verification System

One key aspect of the ACF rule is the requirement for all motor carriers, brokers, and other entities to only hire compliant fleets. Hiring entities must implement compliance *verification* procedures that include annual review of ACF compliance certificates. Based on GNA's experience managing CARB rule compliance and implementing compliance verification protocols for motor carrier, brokerage, and hiring entity clients, we request that CARB's implementation of ACF include a comprehensive database, searchable by CA Carrier and DOT number, consisting of:

- All ACF compliant fleets
- All fleets that are *excluded* from ACF compliance (i.e., those under 50 vehicles/$50 million in revenue)

For fleets that must comply with ACF, i.e. 50+ vehicles or $50M+, the hiring entity verification process is simple: they will be listed as compliant or non-compliant, and motor carriers and brokerages can make clear decisions. However, small fleets, which make up a huge proportion of the active vehicles in the goods movement industry, will not be listed in an ACF-only database. Hiring entities will be unable to **verify** small fleets' ACF compliance because no documentation would reasonably exist.

The majority of our motor carrier and brokerage clients utilize onboarding vendors or in-house teams who quickly access and cross-check the public FMCSA and CARB databases for all insurance, safety, and emissions verifications. There is a likelihood that smaller motor carriers that do not fall under ACF would simply be excluded from *any* contract or brokerage opportunities, due to the administrative challenges of verification. This would also create knock-on effects for the already-strained goods movement supply chain**.** We therefore hope that CARB will implement a more robust centralized compliance database in which non-ACF carriers can register and be listed as Not Applicable, so that hiring entities can easily and efficiently ensure ongoing compliance and supply chain continuity.

Conclusion

Thank you again for the opportunity to comment on this rule and work with the entire team at CARB on zero-emission progress. This is the most ambitious and important fleet rulemaking in our lifetimes, and much depends on getting it right. Premature rollouts of new technologies set back industry adoption and progress, as California learned with the introduction of 9-liter natural gas trucks into the Southern California ports. While we can't afford to wait on zero-emissions, we also can't afford to get it wrong. Exemptions that match the current state of the industry, as well as more comprehensive reporting systems, can help ease zero-emission planning and implementation for this rule.. We hope our extensive experience implementing, iterating, and learning vital lessons, in partnership with clients, CARB, and agencies throughout California, can inform and improve details in the ACF language to better achieve this energy transition.

If you have any further questions on GNA's ZEV fleet implementation experiences, we would be happy to host members of the CARB board and/or staff to discuss additional details. GNA and our clients are eager to provide insight that can help CARB prepare a successful and effective zero-emission pathway for the State of California.

Sincerely,

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