May 27, 2020

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

RE: Comments on the Proposed Advanced Clean Truck Regulation – Real World Heavy-Duty Zero-Emission Fleet Experiences

Dear Mr. Brasil:

Thank you for the opportunity to provide comments on the California Air Resources Board's (CARB) proposed Advanced Clean Truck Regulation on behalf of members of the Advanced Clean Technology (ACT) Fleet Forum (www.ACTFleetForum.com). The ACT Fleet Forum is an educational network for North America's most progressive commercial fleet operators that are working to deploy advanced, clean technologies. Several members of the group have significant experience at the leading edge of commercial electric truck deployment and operations. Given the educational focus of the organization, members with electric truck experience wished to aggregate and share with CARB their real-world project data and information as part of the Advanced Clean Truck rulemaking process.

Over the last few years, several fleets in the ACT Fleet Forum have been working to test pilot stage technologies, prototypes, and early stage commercial zero-emission truck technologies across a wide variety of routes, vocations, and on- and off-road operations. These fleets are testing and working to deploy electric and fuel cell trucks from nearly all major technology developers and leading OEMs, including products from Freightliner, Volvo, Peterbilt, Kenworth, Kalmar, BYD, Tesla and others. Additionally, several of the ACT Fleet Forum members have experience with prior generations of electric trucks from companies such as Navistar, Smith EV, and others. Members of the ACT Fleet Forum are utilizing charging infrastructure from a wide variety of heavy-duty EV charging infrastructure providers, including ABB, Siemens, BTC Power, EVgo, Greenlots, Tesla, BYD, and others, and are simultaneously working with several of California's electric utilities, including SCE, PG&E, SDG&E, and several municipal utility districts. With a dozen different projects now being implemented at individual fleet site locations throughout California – and with each project operating between 3 to 5 electric trucks at a site, to as many as 20 units – the depth and breadth of electric truck experience represented within the ACT Fleet Forum is unmatched.

This comment letter provides additional details on where the data from ACT Fleet Forum member's electric truck projects both confirm and conflict with CARB's assumptions in the development of the Advanced Clean Truck rule. Information from ACT Fleet Forum members with electric truck experience and data has been aggregated and provided below. It is hoped that the collective experiences of large commercial fleets with real-world, project-based insight will help CARB better refine cost models and market assumptions so that its rulemaking efforts are developed with the best data on environmental and economic sustainability metrics.

Fleets join the ACT Fleet Forum with the express purpose of refining and growing their clean technology operations, and these fleets want to see ongoing growth and opportunity for electric truck adoption. However, members of the ACT Fleet Forum have a core responsibility to maintain fleetwide benchmarks for operations and costs, and have experience with the challenges that result when current technology is not ready for broad adoption, either based on service or cost metrics. The members of the ACT Fleet Forum want electrification to succeed and believe it is imperative that CARB's forward-thinking emissions goals are calibrated to account for the real-world economics and operations experiences from early electric truck adoption.

Near-Term Zero-Emissions Opportunities

ACT Fleet Forum members have reviewed and compared the current cost models and adoption targets in the proposed Advanced Clean Truck regulation against their current zero emission vehicle technology projects, and were able to identify electric vehicle operations that validate some of CARB's regulatory provisions. The following section provides specific examples of the current and near-term electrification opportunities from current real-world fleet operations.

The data from members of the ACT Fleet Forum with experience with Class 2b-3 and class 4-5 electric vehicles, infrastructure, and charging costs largely aligns with the information outlined in CARB's Initial Statement of Reasons (ISOR) and the updated April analysis. The ACT Fleet Forum members that operate last-mile delivery fleets are taking delivery of vehicles in the U.S. and Europe with costs that are nearly in line with the $15,000 to $20,000 incremental cost benchmarks noted by CARB for Class 2b-3 in 2024. These vehicles also fit the operational profile for electrification, allowing fleets the opportunity to take advantage of lower-cost, lower-kW charging equipment and optimal electric charging times. Some fleets are seeing EV charging infrastructure installation costs of approximately $1,000 per kW for Level 2 fleet charging, which include equipment and installation (and appears to hold true for larger chargers); these costs are generally in line with CARB's $25,000 cost estimate for Class 2b-5 EV charging infrastructure for 19 kW. Overnight charging also allows fleets to take advantage of the lowest off-peak electricity costs identified by CARB for utilities throughout the state. Each of these factors are critical to achieving a positive Total Cost of Ownership (TCO) that supports large-scale adoption.

Some ACT Fleet Forum members project that Class 3 electric delivery operations will be cost-neutral without incentive funding in the 2024 timelines targeted by this regulation, inclusive of vehicles, chargers with infrastructure upgrades amortized over the lifetime of multiple trucks, and a managed overnight depot charging strategy. The medium-duty EV fleet experiences are broadly in line with CARB's TCO analysis included in the ISOR, which relies on the following medium-duty last-mile-delivery assumptions:

- 20 Class 4-5 trucks
- 19kW EVSE
- Overnight depot charging
- Low-cost off-peak EV charging rates
- LCFS credits
- 12-year amortization

ACT Fleet Forum member project data show that this Class 3 last-mile-delivery operational profile is *the* key factor for economic feasibility in the near-term, up to and beyond 2024.

In addition to this Class 3 example, members of the ACT Fleet Forum with regional short-haul distribution Class 7-8 tractor operations do see potential opportunities for fleet electrification, but only with clear caveats regarding vehicle costs and availability, grants and incentives, and ideal charging operations. A member of the ACT Fleet Forum working to deploy 20 electric tractors in a delivery application has modeled a long-term

positive TCO. This has resulted from a very aggressive price on the Class 8 electric truck (which is not yet commercially available), combined with a favorable operational profile which includes:

- A daily range under 200 miles;
- Single-shift daytime operations; and,
- The ability to park and charge the truck overnight in a centralized, owned, depot.

These factors enabled the fleet to:

- Utilize 100kW chargers due to the available charging window;
- Access the lowest-cost utility EV rates due to overnight charging; and,
- Access LCFS credits at proprietary depot charging to offset overall project costs.

Given the real estate availability and site characteristics, the fleet is integrating charging and battery storage, at installed costs of approximately $90,000 per 100kW, which is less expensive than CARB's estimates for Class 7/8 truck charging of $110,000 per installed charger.

While this Class 8 delivery truck project was able to access a significant grant to offset portions of the project costs, even without the incentive being applied, the combination of low truck costs and an ideal charging and site scenario demonstrates early potential for similar electrification efforts.

The positive TCO model developed by CARB therefore matches the experiences and projections of fleet members with last-mile Class 7-8 operations and last-mile Class 3 operations, under specific circumstances. This provides some insight into the early commercial potential for certain transportation sectors; however, it is important to note that these fleets' positive TCO scenarios are dependent on the applicability of a) overnight, lower-kW, depot fueling and b) vehicle incremental costs in line with CARB's MY 2024 projections. As detailed in the following section, the medium- and heavy-duty transportation sector is exceptionally varied, with charging and vehicle needs that currently fall outside these positive TCO parameters for non-delivery applications.

Real-World Challenges in Zero-Emission Project Implementation

Multiple members of the ACT Fleet Forum are aggressively pursuing extensive and varied electric truck pilot projects, some at multiple sites, to determine the best business cases and technologies for fleet electrification. The technological and operational needs of drayage, regional haul, vocational, food distribution, retail distribution, last mile, public fleet and other types of medium- and heavy-duty truck applications vary tremendously. There is no one size fits all approach. Dramatically different vehicle types, charging infrastructure, charging rate strategies, technologies and other factors are critical for success, as measured on an individual basis.

The members of the ACT Fleet Forum, collectively, represent the largest collection of heavy-duty electric truck operators in the nation. Their industry-leading pilot projects are still early in their implementation; thus, the data from these projects is still very limited and should therefore be used judiciously to make large conclusions about the overall truck market. However, it is one of the largest data sets actually available on the (moderately) scaled deployments of heavy-duty trucks. It is therefore being provided to CARB to assist in its modeling of the rule and future electric truck policy initiatives.

Below, data from ACT Fleet Forum members has been provided to clarify real-world costs around electrifying vehicles and operations outside of the positive TCO use cases listed in the section above.

Charging Times and Costs

CARB's analysis proposes scenarios for each Vehicle Group where electric truck charging takes place overnight in a depot with lower-kW, lower-cost EV chargers that can utilize low-cost off-peak charging rates. As demonstrated in real-world delivery applications, this model has significant opportunities for positive TCO, dependent on truck costs and other factors. However, the reality is that many fleets have real-world operations that deviate significantly from this model, and these electric truck projects are currently incurring significant incremental costs from more expensive charging equipment, electrical service, and electrical rates.

A member of the ACT Fleet Forum has provided an example from their existing electric truck project where several of the electric trucks leave the depot at 3:00am on their first route and continue to operate (via multiple drivers) up to 20 hours in a given day. For commercial trucking operations, increased asset utilization is at the heart of financial viability. A truck at rest is a truck not making money, and commercial trucks are – ideally – operated as much as possible each day, precluding lower-kW, slower charging strategies. These vehicles are also typically dispatched during off-peak hours – i.e. period of the day when traffic is minimized but also the period of the day when electric rates are lowest. These operations eliminate the opportunity for overnight charging and require the use of high-powered on-demand charging, with one fleet noting that more than 50% of its the charging takes place during on-peak hours.

EV Charger Capacity, Costs and Standards

CARB's analysis assumes that 80kW chargers for Class 7-8 tractors are suitable to sufficiently charge electric tractors used in regional delivery operations. This is inconsistent with the experiences of the ACT Fleet Forum members, where, universally, 150kW chargers are being used to charge their over-the-road Class 7 and 8 electric tractors. Even where overnight charging is practical, 150kW chargers are considered to be the minimum size suitable to support these electric powered regional delivery operations. Further, fleets and their OEM partners are already all actively examining emerging 350kW options for subsequent deployments (and even 1MW and 3MW fast charging). Given the extremely early stages of the electric truck market, it is anticipated that higher capacity EV chargers will become more standardized in the near-term.

As an example, one vehicle demo project recently installed two (2) 150kW charge cabinets fitted with two (2) dispensers each to support four (4) trucks running single shifts as a demonstration project (in a fleet where trucks typically run several shifts). The total cost for the hardware, design, and installation was $590,000, equating to approximately $148,000 per truck or just under $2,000 per kW. Another fleet with 10 trucks recently installed five (5) 150kW chargers with dual dispensers, spending $100,000 per truck. While one of these demo-stage infrastructure costs are broadly in line with CARB's estimate of $105,000 per Class 8 tractor, both these fleets note that 150kW charging cabinets are proving infeasible to support the fueling windows needed for multi-shift operations, and they are actively looking into 350kW chargers. Recent quotes for these higher rate chargers currently range from $350,000 to $400,000 per unit (around $1,000 per kW), before any necessary site and electrical service infrastructure upgrade costs. These fleets are also anticipating a rise in engineering costs to accommodate space constraints or new real estate costs to support adequate infrastructure to support at scale.

Beyond the initial costs of EVSE, ACT Fleet Forum members have also often been surprised by the ongoing networking and management costs required to operate their charging systems. Additional annual costs incurred have ranged from $25,000 per site, to over $200,000 for a single site.

Related to medium and heavy-duty commercial electric truck charging, it is important to point out that there are currently no universally accepted standards by which electric truck charging can follow. The charging receptacles for Freightliner, Volvo, Peterbilt, Tesla, Fuso, and BYD trucks are all different, meaning that individual chargers are required for each brand of truck. While work is ongoing to address such issues, including

some member fleets that insist their next vehicle deliveries be CCS1-compliant, this creates significant challenges for commercial fleet operators who often operate diverse fleet vehicles, or at least buy from multiple OEMs. Successfully scaling up commercial trucking to meet early regulatory targets requires increased standardization of EV charging to ensure that foundational investments in electrification continue to add value and do not require costly new hardware or infrastructure replacement as the market evolves.

Members of the ACT Fleet Forum recommend CARB consider gathering additional real-world data on the higher-rate electric truck charging for more nuanced charging cost models that incorporate the most recent heavy-duty fleet data. It would also be helpful to see sales targets and market growth timelines account for the need for charger standardization prior to large-scale, sunk-cost investments.

Truck to Charger Ratios

CARB's analysis assumes that all Class 8 electric truck charging can take place using a ratio of one (1) EV charger for every one (1) electric truck, using individual 80kW chargers. This may be an aggressive assumption given the initial electric truck and charger demonstrations now taking place, and the fact that ACT Fleet Forum members now using electric trucks see 150kW chargers as the minimum required to support their operations.

Given the approximate $140,000 cost for even a 150kW EV charger, on top of the significantly more expensive truck (compared to a baseline diesel), project financial performance is dependent on improving infrastructure asset utilization. Several fleets are examining how to use one (1) charger to support two (2) or more electric trucks. These efforts, however, are adding new labor expense categories to manage the movement of trucks among the chargers, as well as the daily charger-truck communication and software challenges in an emerging technology space with multiple technologies. The experiences of the members of the ACT Fleet Forum operating electric trucks have shown that dedicated electric vehicle charging labor is currently averaging 1 FTE (full time equivalent) per site that should be considered in future cost models, at least until such time as it is demonstrated that such daily management is not required.

Electricity Costs

CARB has assumed a $0.16/kWh cost of electricity in its ISOR as a weighted statewide average for Class 7-8 tractor operations, $0.18 for Class 8, and $0.21/kWh for Class 2b-3 This is consistent with the data collected by ACT Fleet Forum members where overnight charging does occur. In these cases, these fleet have seen SCE rates average between $0.14 and $0.18/kWh. While there is no data yet from charging on the PG&E system, CARB's assumed rates appear consistent with PG&E's new EV rate structure.

However, ACT Fleet Forum members with over-the-road trucking operations are regularly not able to take advantage of the lowest-cost off-peak EV charging rates presented in the ISOR, with some fleets seeing over 50% of their charging during on-peak hours. And while new EV rates from some utilities can help mitigate peak charging rates, only two (2) of California's more than 50 electric utilities currently offer specialized commercial EV rates to assist in lowering the costs of on-peak charging.

Given the inability for fleets to always charge overnight, combined with some fleet sites and charging occurring in utility service districts without special EV rates, the average cost of electricity being paid by ACT Fleet Forum members charging electric trucks is significantly higher than $0.16-0.21/kWh costs assumed by CARB in its analysis. In a recent sampling of five (5) ACT Fleet Forum member sites located in the service territories of SCE, SDG&E and a municipal utility, the average electricity costs for charging electric trucks at these sites between May 11, 2020 and May 17, 2020 was $0.41/kWh (individual average electricity costs at each site during this period were: $0.17/kWh, $0.23/kWh, $0.68/kWh, $0.20/kWh, and $0.77/kWh). Using a weighted average approach (weighted for the amount of electricity used at each site), the cost of electricity at all five (5) of these sites for the sample period was $0.45/kWh. For these same five (5) sites, if the data is expanded to look at the

weighted average cost of electricity over a six (6) month period (November 2019 – April 2020), the average cost remains $0.41/kWh.

It is important to note that the above cost information is net of any LCFS credit value, which is assumed to be roughly $0.25/kWh at current market values. With LCFS credit values included, the net cost of electricity to the fleet operator is thus $0.16/kWh to $0.20/kWh, which is closer, yet still above CARB's assumption. However, it is also recognized that as the market matures and public access infrastructure becomes one of the strategies employed to charge electric trucks, it becomes much more difficult for the fleet end-user to capture the value of the LCFS credits.

Beyond on-peak charging rates, demand charges are a significant concern to fleets currently running or considering electric trucks. While utilities such as SCE do offer a demand charge waiver, this waiver is only in place for a few more years and, when it expires, preliminary estimates of one ACT Fleet Forum member are that charging costs will increase from an average of $0.15/kWh to approximately $0.50/kWh (more than a 300% increase) based upon current operations. As a vast majority of electric utilities in California do not offer demand charge waivers, these issues must be carefully and properly managed to avoid large price spikes impacting the financial performance of an electric fleet operation

In addition to demand charge mitigation programs offered by large utilities such as PG&E and SCE, special commercial EV fleet rates meant to mitigate the impacts of on-peak charging are currently offered by less than 5% of California's utilities. Many of the existing and future potential electric truck operations for members of the ACT Fleet Forum fall outside of the service territories which offer special commercial EV rate programs. For example, members of the ACT Fleet Forum are running, or considering deployment of electric trucks in the service territories of the Anaheim Public Utilities Department, Los Angeles Department of Water & Power (LADWP), Modesto Irrigation District, Port of Oakland, Riverside Public Utilities Department, San Diego Gas & Electric (SDG&E), Vernon Gas & Electric Department and others. Fleets operating electric trucks and EV chargers have found that the costs for electricity across different utilities can vary quite dramatically. In some more extreme cases, one member of the ACT Fleet Forum has reported average costs of approximately $1.00 to $2.00/kWh across a fleet of electric trucks at one site located in a municipal utility district, thus causing them to stop charging trucks at this site to the greatest extent possible.

Fleets recognize that more sophisticated managed charging solutions, careful planning, and other strategies can be employed to ensure cost-effective fueling of their fleets. However, given the lack of long-term data or effective over-the-road charging cost mitigation approaches at the present time, ACT Fleet Forum members are concerned that CARB's cost model is premature. Member fleets anticipate better data will emerge as these early projects continue to mature and release long-term results, which will in turn shape more effective regulations. To scale electric truck purchases and deployments beyond current pilot and testing programs, it is critical that the state and its businesses better understand proven charging strategies that result in a positive TCO.

Lastly, it is worth noting that California already has some of the highest electricity rates in the country. Given the state's aggressive efforts to move to 100% renewable energy, significant investments will be required in new generation, transmission, and distribution infrastructure. Such investments are traditionally passed back to the ratepayer. Additionally, transitioning the state's transportation fleet to 100% electrical power will roughly double the amount of electricity required on the grid, thus driving significant additional investment in even more renewable energy generation, transmission, and distribution infrastructure. Further, there are growing efforts throughout the state to replace stationary uses of natural gas with electricity, which will place even more demand on the electrical supply grid and likely costs for electrical ratepayers. And lastly, the costs of additional wildfire mitigation by the state's electric utilities are likely to also increase in the near-term. With

so many parallel efforts requiring substantial investment in the generation and distribution of electricity in the state, it is hard to see how CARB's future electricity cost projects can be maintained as such low levels (which are below those seen today). CARB must carefully consider the impacts on future electric rates to end-user customers such as commercial electric truck fleet operators.

Truck Costs & Availability

CARB has assumed a $71,000 incremental cost for a Class 7/8 electric tractor in 2024. Based upon ongoing conversations that all ACT Fleet Forum members are having with the leading truck manufacturers, there is concern that CARB's cost estimate projection may be overly reliant on information being provided by a single supplier (that currently does not produce trucks or have the associated manufacturing lines or service infrastructure to support those trucks) and is therefore inappropriate to apply across all manufacturers.

Few members of the ACT Fleet Forum have been able to secure *actual quotes* from any existing or future potential truck manufacturer. Only one OEM has provided a quote that is consistent with CARB's cost projection for a Class 7/8 electric tractor in 2024. It is worth noting, however, that this quote is from a company that does not currently manufacture trucks. Quotes that members of the Forum have been able to secure for battery electric trucks from traditional OEMs, as well as new entrants into the market, range 3x to 5x current diesel tractor prices (which is in the low $100K range). For fuel cell vehicles, Forum members have been unable to secure firm quotes, with manufacturers indicating early commercial vehicles may be 3-5 years away. If some of the largest commercial trucking operations in North America have not been able to secure validating quotes from the manufacturers from whom they buy tens of thousands of trucks from per year, there is concern about the reliability of the information underpinning the market adoption assumptions.

While Tesla announced pricing on their Semi in 2017, since this time, most members of the ACT Fleet Forum have been unable to secure current quotes to confirm such pricing. However, research conducted by Forum members does indicate that Tesla's battery pack costs for its Model 3 may be "in the ballpark" of what would be required for Tesla to be able to sell its Semi at the previously advertised prices. Of course, this assumes that Tesla is ultimately able to deliver on its 2017 pricing commitment. With Tesla's recent April 2020 announcement of another year delay on its Semi deliveries, questions about this product certainly remain. Member fleets are excited to continue exploring the electrification potential posed by market disruptors, but are concerned that a cost model based on preliminary estimates from emerging manufacturers will underestimate the true costs of the incremental operations needed to support large-scale electric truck deployments industry-wide.

The ultra-experienced members of the ACT Fleet Forum – who collectively purchase tens of thousands of new trucks per year – also know that up-front truck costs include elements of ongoing support and warranty coverage for that truck, which is carried out via extensive dealer, parts distribution, and service networks. While cost estimates for electric trucks from traditional manufacturers tend to be higher than quotes from newer market players, traditional truck manufacturers have institutional data to estimate the long-term expenses to support future warranty, service and support costs for trucks that are expected to run 1.0 million miles or more. As members of the ACT Fleet Forum have seen in their long-standing real-world procurement of advanced technologies, efforts to quickly scale clean vehicle technologies can very quickly falter via out-of-service product and ballooning costs when manufacturers underestimate long-term service, support and warranty costs. Such issues have been a primary reason why many of the nation's first electric truck manufacturers are no longer in business. For the long-term success of the electric truck market, CARB must not underestimate the critical importance of after-sales support and service networks.

Members of the ACT Fleet Forum are also concerned that the gaps in heavy-duty electric vehicle product availability - outside the delivery and tractor segments - are not fully reflected in CARB's cost models. In

particular, there is a notable market gap in the costs for vocational vehicles that require extensive body modifications. Such vocational vehicles are typically built upon the chassis of a Class 6 truck platform, with extensive body modifications required to deliver a fully integrated truck to a customer. Given the infancy of the overall market, and with only one Class 6 electric truck available for sale today from traditional truck OEMs, fleets have been unable to determine the true costs and operational assessments required to support electric project implementation in these vocational segments. As CARB continues to refine its cost models and timelines, vocational fleets need a more nuanced approach that accounts for the current market status and the time required to complete the engineering, integration and total pricing activities required by suppliers.

Need for Incentive Funding to Reach 2024 Regulatory Targets

The recent EV projects now being implemented by ACT Fleet Forum members were only possible due to availability of multiple local, state and federal incentives, including a combination of direct vehicle incentives and LCFS credits. Forum members have utilized funding sources such as HVIP, ZANZEFF, EPA Air Shed, Prop 1B, Charge Ready, and other incentive programs to participate in the pilots that are now leading to true commercial readiness in key vehicle technologies and operations. Current vehicle prices for Class 6-8 vehicles, which are 3x to 5x traditional vehicle costs, are simply not economically feasible without incentives, regardless of whether a fleet has an ideal charging profile and access to special EV fleet charging rates.

Outside of some select applications and opportunities, it is difficult to achieve a positive TCO in a majority of the heavy-duty electric truck market without incentives. When asked about their electric truck projects if funding were reduced in the near-term, one ACT Fleet Forum member quickly confirmed that it would mean the termination of their electric truck program. Getting to an economically self-sustaining marketplace will require significant grant-funded deployments to help develop, demonstrate, and deploy cost-competitive technologies and charging models.

The budgetary impacts from COVID-19 are only just emerging and could have profound impacts on the availability of near-term funding and LCFS revenues that enable the early technology and charging projects that build the foundations of economically feasible technology markets. Limited incentive access due to a rapid-onset recession, which has also impacted demand for the conventional energy markets that drive LCFS credits, could shift the market adoption projections of technology adoption and cost reduction curves that underlie the 2024 regulatory start date. CARB and the Board should therefore prioritize robust ongoing funding levels and ongoing market assessments to ensure the 2024 implementation dates remain reasonable and the Advanced Clean Truck regulation is successful in achieving its goal of stimulating technology development and improved EV market options.

Building a Sustainable Electric Truck Future

Thank you for the opportunity to share with you the collective electric truck implementation experiences of the ACT Fleet Forum members as they relate to the proposed Advanced Clean Truck regulation. It is understood that the Large Fleet Reporting requirements of this regulation will provide CARB with insight about existing fleets' characteristics. In the interim, the members of the ACT Fleet Forum wanted to provide additional insight about specific electric vehicle project considerations and costs to better inform the current rule and any cost models that carry forward for the fleet rule regulatory procedure. As noted at the top of this letter, it is important that CARB "get it right" to ensure the successful implementation of this rule, and thus the successful development of the market for electric trucks. Ensuring that electric trucks can be both economically sustainable in addition to environmentally sustainable will be the ultimately key to success.

Based on these data already collected by ACT Fleet Forum members, it appears that zero-emission trucks have the potential to be cost-effective in certain applications in the near-term, while helping to provide a pathway to future viability for others. For operational and technology profiles that are more challenging, the members

of the ACT Fleet Forum hope to work with CARB on more nuanced cost models that can then help inform sales targets and future fleet rule timelines.

If you have any further questions about any of these EV fleet implementation experiences, the ACT Fleet Forum would be happy to host members of the CARB board and/or staff to discuss additional details. The fleets that joined the ACT Fleet Forum to better implement innovative technology programs are eager to provide insight that can help CARB prepare a successful and effective zero-emission pathway forward for the State of California. To follow up, please contact the ACT Fleet Forum's designated representative, Nate Springer, at (310) 279-7760 or via email at Nate.Springer@Gladstein.org.

Sincerely,

ACT Fleet Forum

CC: Mary Nichols, Chair, California Air Resources Board
Clerk of the Board, California Air Resources Board
Richard Corey, Executive Director, California Air Resources Board

The ACT Fleet Forum brings together best-in-class commercial fleet operators in North America working to deploy advanced, clean technologies to share lessons and learn from leading solutions providers via web discussions and workshops. It is an educational initiative that gives participating fleets, technology providers, OEMs, and fuel suppliers an opportunity to understand best practices on adopting clean transportation technologies. Facilitated by clean transportation consulting firm Gladstein, Neandross & Associates (GNA), the ACT Fleet Forum is an extension of the Advanced Clean Transportation (ACT) Expo, North America's largest advanced transportation technology and clean fleet event. Fleets in the ACT Fleet Forum include Ability Tri-Modal Transportation Services, C&S Wholesale Grocers, EVO Transportation & Energy, J.B. Hunt Transport, Matheson, NFI Industries, Penske Transportation Solutions, PepsiCo, Ruan Transportation Management Systems, Schneider National, Sysco, Total Transportation Services Inc., Walmart, and Waste Management.