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August 4th, 2022

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

Re: Comments on Draft Regulatory Language for the Advance Clean Fleets (ACF) Regulation and 2040 100% ZEV Sales requirement – Updated for May 2022 Draft Regulation Revision

Daimler Truck North America (DTNA) submits the following comments in response to the proposed draft regulatory language published by the California Air Resources Board (CARB) dated May 2-6th, 2022 and discussed in subsequent workshops led by CARB staff.

DTNA is fully committed to supporting the emerging zero-emission vehicle (ZEV) market; we expect these technologies to play a significant part in the future of commercial transportation, and know they are a vital contributor to lowering NOx and GHG emissions. DTNA is investing heavily in the development of electric vehicles, and has ambitions for large market penetration. We currently offer battery-electric school buses, walk-in van chassis (Class 4), as well as heavy-duty (Class 8) trucks for sale, and we are preparing for the market introduction of an all-electric medium-duty (Class 6/7) truck. Additionally, DTNA has significant experience in the market, garnered from providing an advanced demonstration fleet of electric trucks to commercial truck fleets in the U.S., primarily California, and Canada. Lastly, DTNA recently built the first-of-its-kind heavy-duty truck charging facility on Swan Island in Portland, developed specifically for use with the types of zero-emission vehicles affected by this rule. Consequently, DTNA has a significant interest in CARB's rulemaking and aims to ensure that the CARB implements an effective and well-considered set of rules.

Proposed 100% ZEV Sales Mandate in 2040:

CARB should consider Zero carbon technologies for vehicle applications where electrification is not ready.

In the proposed rulemaking, CARB intends to sunset the existing Advanced Clean Trucks rule and replace it with a 100% sales requirement for 2040 and later. DTNA has set a target to be 100% zero-emissions vehicles by 2039, but we believe that CARB's proposed rulemaking does not consider that there may be certain applications that are not ready for electrification, and fuel cells may not be practical in all cases. DTNA believes that CARB should provide provisions that allow for zero carbon, near zero-emission vehicles in certain applications, especially advanced, carbon-free technologies like hydrogen combustion engines.

Advanced Clean Fleet Provisions

CARB should consider targeted revisions to the Advanced Clean Fleet and Advanced Clean Trucks rule to better harmonize the two programs, and to implement a practical and enforceable rule.

DTNA believes that, to be successful, any program to electrify the state's fleets must not be limited to only a manufacturer sales mandate. Instead, the state must create a variety of programs that will ensure supply, support demand, create a positive business case for purchasers, and ensure stability and predictability for manufacturers and fleets alike. To that end, DTNA supports CARB's programs such as the

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Low Carbon Fuel Standard, Hybrid and Zero-Emission Truck and Bus Voucher Incentive Project (HVIP), and other efforts designed to ensure demand and adequate infrastructure.

The ACF rule, as proposed, will spark demand for ZEVs, but DTNA believes there are some areas of the rule that deserve further attention:

1.) Disparity between ACT and ACF Credit Provisions:

The required fleet ZEV percentages proposed by CARB in the High Priority and Federal Fleets regulation do not align with the classes and percentages required of manufacturers in the ACT rule. In the already-adopted ACT rule, manufacturers are required to sell vehicles in certain categories at certain percentage rates, according to the following table:

Model Year	Class 2b-3 Group	Class 4-8 Group	Class 7-8 Tractors Group
2024	5%	9%	5%
2025	7%	11%	7%
2026	10%	13%	10%
2027	15%	20%	15%
2028	20%	30%	20%
2029	25%	40%	25%
2030	30%	50%	30%
2031	35%	55%	35%
2032	40%	60%	40%
2033	45%	65%	40%
2034	50%	70%	40%
2035 and beyond	55%	75%	40%

While vehicle sales are transferable, credits cannot be transferred into the Class 7-8 tractors category, and credit weighting provisions count heavier vehicles within the Truck categories with a higher weighting than lighter vehicles. Ultimately, this obligates manufacturers to sell significant quantities of electric vehicles in the higher weight classes, and especially, in the Class 7-8 Tractors group – as early as 2024.

Meanwhile, in the proposed rules for High Priority and Federal Fleets, fleets are required to either add only ZEVs to the California fleet beginning in 2024, or opt-in to the Flexible ZEV Milestone Path. Using the ZEV Fleet Milestone path, fleets must operate with annual target percentages assigned by Milestone Group, but ultimately, only need to meet a calculated total number of ZEVs in their fleet. These categories are not aligned with the categories in the ACT rule, and ZEV quantity requirements are completely fungible within these categories.

Table A: ZEV Fleet Milestones by Milestone Group and Year

Percentage of vehicles that must be ZEVs	10%	25%	50%	75%	100%
Milestone Group 1: Box trucks, vans, buses with two axles, yard tractors, light-duty package delivery vehicles	2025	2028	2031	2033	2035 and beyond
Milestone Group 2: Work trucks, day cab tractors, buses with three axles	2027	2030	2033	2036	2039 and beyond
Milestone Group 3: Sleeper cab tractors and specialty vehicles	2030	2033	2036	2039	2042 and beyond

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In short, especially in the first decade of the rule, fleets are very likely to meet their ZEV target by operating comparatively inexpensive Group 1 ZEVs, while continuing to use traditional combustion engines for their heavier trucks and tractors. Under the ACF's proposed Milestone Path, depending on the fleet makeup, a fleet may avoid purchasing any Class 8 trucks or tractors until very late in the program. Manufacturers, conversely, do not have such flexibility, and will be required to sell Class 8 ZEVs whether or not demand exists, and will generate additional obligations each time a fleet purchases a lighter-weight ZEV instead of a heavier-weight one. This is especially problematic since it remains to be seen whether the pace set by the ACT rule is possible. If the early ZEV market favors adoption of lighter trucks over heavier trucks and tractors, as expected, a manufacturer could face significant difficulties complying with the rules when no substantial demand is generated for heavy trucks in the first decade of the rule. CARB must set up the compliance pathways in the ACF rule such that it supports the existing sales mixes required under the ACT rule or risk creating an unsupported class, which manufacturers are required to sell, but for which sufficient demand does not exist.

In addition, CARB has not resolved the discrepancies between vehicles that are required to be used under the ACF rule, and the vehicles that count as credit for manufacturers under the ACT rule. Under the ACT rule, a manufacturer may only earn ZEV credit by selling a new on-road vehicle to the ultimate purchaser in California. However, under the proposed High Priority and Federal Fleets Draft Regulation order, "California fleet" is defined as the total number of vehicles operated in California during a calendar year, with no requirements for purchase or registration in California. These vehicles may be purchased by customers outside of the State of California, where they do not generate ZEV credit for a manufacturer's ACT obligations, but do generate ZEV credit for a fleet's ACF obligations. It is possible, or even likely, that a major fleet operating across the US can meet their obligations under the ACF without generating a single ACT ZEV credit by purchasing and registering their vehicles out of state. DTNA recommends CARB harmonize the two programs by adopting an approach that is clear, workable, and recognizes the way that vehicles are produced, sold, registered, and operated in California.

DTNA recommends CARB reassess the ACF and ACT programs, and work to provide parity between the two rules, targeting common category definitions and similar demand and supply requirements for each category.

2.) Inconsistency in value of NZEV Credits between ACT and ACF:

Under the proposed ACF rule, a qualified Near-Zero-Emission Vehicle (NZEV) counts for 1 vehicle for purposes of a fleet's obligation until 2035. However, under the ACT rule, NZEV credits are discounted in value, based on their all electric range, with a maximum of 0.75 credits per NZEV. Similarly, the ACT rule has caps on the amount of credit generated by NZEVs, but no such cap exists in the ACF rule. DTNA recommends CARB revise the ACT and the ACF to provide parity between how NZEVs are treated between the two rules.

3.) Misalignment in Exemptions between ACT and ACF:

DTNA believes that the exemptions provisions for the ACF programs drives the need for an equivalent provision in the ACT rule. CARB rightly recognizes that some applications, duty cycles, or customer profiles will not allow a ZEV to replace its conventionally powered counterpart in the timeframe required by the rule. Such exemptions might be due to a lack of available or appropriate

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infrastructure, remote vehicle operations, or other factors outside the control of the fleet owner. Such exemptions are necessary to account for the wide range of operations in the California commercial fleet. Other exemptions are provided for certain vehicle types, including emergency vehicles, school buses, and dedicated snow removal vehicles. Some of these vehicle types readily lend themselves to ZEV adoption and could provide significant environmental improvements, but are exempted from the ACF rule.

However, no such exemption process is provided for manufacturers under the ACT rule. Manufacturers are required to sell ZEVs regardless of category, infrastructure availability, or application, even if the ACF rule does not require fleets to purchase such vehicles. DTNA recommends CARB re-evaluate the two programs, and harmonize their exemption provisions. Forcing a manufacturer to sell a ZEV to a customer who CARB recognizes cannot use a ZEV due to their specific needs is a fundamental misalignment of the program.

4.) Zero carbon technologies considerations:

As written, the ACT and ACF rule effectively require the use of battery-electric vehicles or hydrogen fuel cell vehicles. While these vehicles reduce tailpipe emissions to zero, this fails to consider the well-to-wheel emissions impact of these vehicles in comparison to other technologies. While DTNA supports and invests heavily in electric vehicles and hydrogen fuel cells, we also believe that there is a place for advanced combustion technologies, such as hydrogen combustion engines, which offer zero-carbon solutions that could be introduced to market quickly and might be appropriate for certain applications. DTNA recommends that CARB consider allowing such technologies to fulfill obligations under the ACT and ACF rules.

5.) Vehicles regulated under the ACF rule:

CARB has heard comments from a number of parties regarding the difficulties of managing the scope and size of the regulated California fleet and the number of ZEVs that must be operated in California. CARB's draft regulations are particularly challenging for out-of-state fleets, who may move vehicles in and out of California frequently, and rental/lease fleets, who may not have knowledge or control over where those fleets operate. Fleets should not incur additional obligations for ZEV purchases because a single diesel truck entered California for one day. Similarly, fleets should not be relieved of their obligations under the ACF rule by moving a ZEV into California for one day. An effective rule cannot be subject to gamesmanship regarding which specific ZEVs or non-ZEVs are sent into California on a daily basis. Additionally, managing fleet-wide compliance "continually" is impractical, as fleet size may change continuously throughout the year, or even within a day, as vehicles enter and leave California, or as vehicle ownership and operations change due to leasing and rental arrangements.

DTNA also believes that the rules regarding responsibility for fleet compliance should be evaluated with the input of the experts in the field. Truck ownership, operations, and dispatching arrangements are complicated, and the parties making decisions about fleet makeup or dispatching arrangements are not always arranged as the CARB draft regulations assume. DTNA urges CARB to dedicate resources to this issue, and to engage manufacturers and fleets alike, who are experts in this space, to determine the definition of a "fleet" for purposes of the ACT rule.

DTNA believes that our customers need stability and predictability when it comes to their fleet purchasing decisions to provide the certainty necessary to invest in zero-emissions vehicles. To that end, California must create clear, concise, and easily predictable rules regarding which vehicles need

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to be included for the purposes of compliance, what groups of vehicles are defined as a fleet, and at what time compliance should be evaluated.

6.) Manufacturer Test Fleet Exemption

CARB must provide an exemption to the ACF rule for vehicles which make up manufacturer's test fleets - and for vehicles which have otherwise been exempted from compliance with California and Federal emissions requirements. These vehicles have not been "sold" in the traditional sense and are not operated as a "fleet" in the traditional sense, and manufacturers are not capable of balancing their test fleet makeup in terms of ZEV quantity. Development needs and product life cycles dictate the size and composition of test fleets, and CARB should make accommodations for that testing, so that manufacturers may continue to bring to market the cleanest, most reliable products possible.

The Role of Incentives in achieving California's ZEV penetration goals

DTNA recommends California further prioritize all available incentive programs to develop a thriving market for ZEVs in order to become self-sustaining.

DTNA strongly supports CARB's various incentive programs that encourage fleets to adopt ZEVs. Commercial fleet operators and owners of installed capital (such as charging infrastructure) are strongly sensitive to the Total Cost of Ownership (TCO) of their equipment. Fleets are unlikely to invest in zero-emissions vehicles unless they can create a positive business case. To that end, DTNA believes that the various incentive programs California can offer are capable of driving ZEVs much more efficiently than purchase and sales mandates.

- 1) DTNA supports increased funding and support for programs such as HVIP and LCFS to create a positive TCO for infrastructure and fleet owners, and the development of new programs where appropriate. HVIP funding is typically completely spoken for in a matter of hours after it is released. This demonstrates that, given adequate financial support, fleets are ready and willing to buy ZEVs. The HVIP program is considering limiting its applicability to large fleets – the very customers who are best positioned to be early adopters of ZEVs in California. Rather than setting limits on who can qualify for such incentives, DTNA recommends that CARB and the state of California further invest in such programs.

This is especially true in the near-term. Early adoption of ZEVs, in the next 5-10 years, will not only help replace a conventionally powered vehicle, but will have significant continued effects – increasing market confidence in ZEVs, driving demand for ZEV infrastructure, kick-starting further manufacturer development to meet demand, and normalizing the electric vehicle in commercial operations. DTNA believes that, if California can provide adequate funding and stability for fleets to feel comfortable making decisions to invest in ZEVs, their widespread adoption will be assured much sooner than possible with the proposed mandates.

- 2) DTNA recommends that all ZEVs, subsidized by public funds or not, should qualify as credit under the ACF program. Many fleets today are dependent on incentive programs to attain cost parity with diesel technologies and create a positive business case. If funding programs prohibit those vehicles from being used for ACF credit, fleets will have difficulty creating positive business cases and this could have the effect of stifling ZEV adoption.

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- 3) DTNA recommends that CARB reconsider ZEV credits in the Omnibus program for CY 2027+ : , DTNA believes effective incentives are not always financial in nature. CARB has created, in their Omnibus Low NOx rule, a credit program with which cleaner engines can generate credits that can be used to manage a manufacturer's other obligations under the rule. In the early years of the program, CARB rightly incentivizes ZEVs by providing credit multipliers for them. This will incentivize manufacturers to further invest in ZEVs to capture this credit, allowing them flexibility as they release new low NOx engines. However, the Omnibus program sunsets all NOx credits generated by ZEVs in 2027, and does not allow any further credit generation from ZEVs. This has the effect of devaluing the NOx credits generated by ZEVs, incentivizing manufacturers to prioritize investment in diesel engines over potentially accelerating their ZEV introductions. In 2027 and later, ZEVs still offset NOx that would otherwise be emitted by combustion engines, and the credit program should recognize that. DTNA believes CARB should use all of their programs to incentivize ZEV adoption, wherever possible.

Infrastructure hurdles threaten the ACT and ACF rules:

DTNA recommends CARB reevaluate the ACT and ACF rules in the future based on the state of available infrastructure.

California's proposed adoption of ZEVs within the ACT and ACF rules should more fully consider the infrastructure challenges associated with these vehicles. While charging infrastructure is expanding in California, much of it is not accessible or practical for commercial fleets. Where fleets are willing to install their own charging infrastructure, the electrical grid is often not up to par, and installation can take years to complete. Significant hydrogen infrastructure to support such trucks is even further removed. Without adequate infrastructure in place, even with a sales mandate in place, ZEVs will sit idle while their conventionally powered counterparts perform the operations of a commercial fleet, negating the emissions benefits of CARB's rules while increasing their cost.

DTNA believes CARB should further incentivize and streamline the creation of the necessary infrastructure to support such ZEVs, and should create off-ramps within the ACT and ACF rules, to reduce the obligations under each rule if adequate infrastructure is not present.

ACT Credit Generation Uncertainty

We believe CARB should take this opportunity to further clarify and codify the criteria under which ZEV credits are earned under the ACT rule. 1963.2 says that a manufacturer "may generate ZEV credits for each ZEV produced and delivered for sale in California" and that "ZEV credits are earned when a new on-road vehicle is sold to the ultimate purchaser in California". There is significant uncertainty over the exact timing and transaction type that results in the generation of a ZEV credit. While California has defined the "ultimate purchaser" the definition of "sold[...]in California" is subject to interpretation and has substantial implications for the wide variety of transaction types in the commercial vehicle sector and/or manufacturer ability to comply with the regulation and adequately report their credit generation. DTNA recommends that CARB work with the Engine Manufacturers Association (EMA) to understand the wide variety of transaction types and create a workable definition that assures CARB's ZEV penetration projections are secured.

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Conclusion

In addition and in support of these topics, DTNA supports the comments of the Truck and Engine Manufacturers' Association (EMA), and incorporates them as their own. Specifically, we re-iterate EMA's concerns on ZEV volumes, weight class modifiers, cost estimates, and ACT Credit and Deficit generation timing. DTNA looks forward to working collaboratively with CARB to promote heavy-duty ZEVs through incentive-based programs and the development of the necessary refueling and recharging infrastructure and funding mechanisms to enable their adoption.

We appreciate your consideration of our comments and concerns.

Sincerely,

A handwritten signature in blue ink, appearing to read "Dan Potter", with a stylized flourish extending to the right.

Dan Potter

Manager, Compliance and Regulatory Affairs
Daimler Truck North America